CS1000
Fault Code Scanner

Mercedes-Benz
Instructions

Model Years 1988-98

Analog/Digital Fault Code Module 1988-98	**OB15-11**
Transmission Fault Code Module 1990-98	**OB15-12**

Table of Contents

ANALOG FAULT CODES

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SCANNER FEATURES

1. Keypad

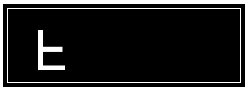
SYSTEM Select vehicle control system for code reading and erasing.

READ Read fault codes.

NEXT 2. View next fault code. (If more than one fault code present)

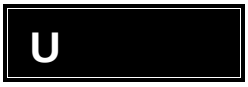
CLEAR Clear fault codes.

2. Screen Symbols

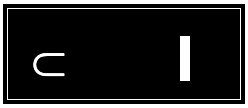


Control systems select.

Scanner is Reading or Clearing fault code



Indicate fault code list number to use.



Indicate fault code.

Four **0**s flashing together.
Connection fault or vehicle not equipped with this system

- » Check that the Ignition key is on or the Engine is running.
- » Check power requirement to scanner (10.5 to 14.5 Volts)
- » Check the in-line fuse on the Yellow probe wire.
- » Check for correct connection to the Vehicle Diagnostic Connector.
- » Check for short circuit in the Vehicle Diagnostic Connector.
- » Check that this memory cartridge is available for this vehicle system.
- » Check that vehicle system requested for test is fitted to this vehicle.

3. Indicator lights

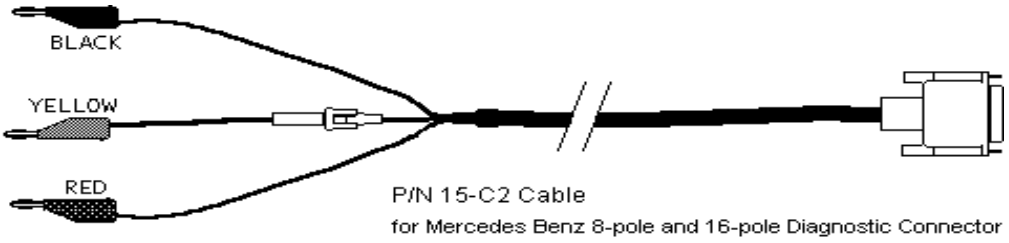
Power indicator (Red LED light)

Data link indicator (Green LED light). Receive data from the control unit.

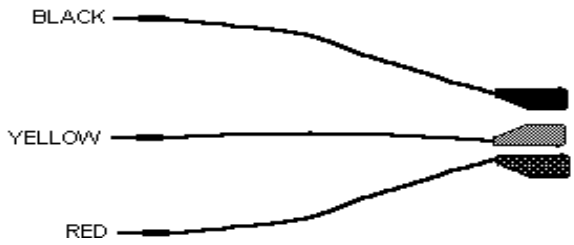
Data link indicator (Yellow LED light). Transfer data to the control unit.

SECTION 1 Using the CS1000 Code Scanner

Diagnostic Cable



P/N 15-C2 Cable
for Mercedes Benz 8-pole and 16-pole Diagnostic Connector



P/N 15-C2-1 Cable
(use with P/N 15-C2)

for Mercedes Benz 38-pole
Diagnostic Connector

General Usage Notes

- The OB15 Code Scanner can display available fault codes from Mercedes Benz vehicles fitted with 8-pole, 16-pole and 38-pole Diagnostic Connectors. The Red wire from the scanner is for powering up the unit and is taken either from the power source socket on the Diagnostic Connector, if available, or from the vehicle battery, using the extension cable supplied. The Black earth wire from the scanner is grounded to the earth socket on the Diagnostic Connector. The Yellow wire from the scanner is used to read the codes from the Diagnostic Connector.

- The P/N 15-C2 diagnostic cable must be used with the P/N 15-C2-1 diagnostic cable for the 38-pole vehicle diagnostic connector.

Connection Table

Test Lead of Cable	Connection source
Red	Power -To power supply socket or vehicle battery
Black	Ground - To socket 1
Yellow	To diagnostic test socket

Power supply (B+) socket on the vehicle Diagnostic Connectors

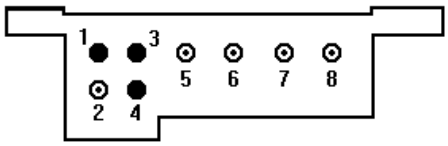
8-pole connector	Use with the battery extension cable to the vehicle battery
16-pole connector	Socket 16 (circuit 15 - ignition ON)*
	Not present in some models. Use battery +.
38-pole connector	Socket 3 (circuit 30 - Battery+)

*Must be performed with the ignition ON to power up the scanner.

Ground (-) socket on the vehicle Diagnostic Connectors

8-pole connector	socket 1
16-pole connector	socket 1
38-pole connector	socket 1

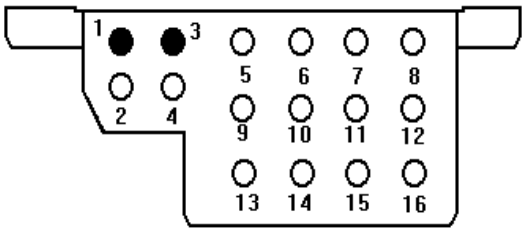
Connector Layout of Vehicle Diagnostic Connector



8-pole Diagnostic Connector

Models 201, 124, 126

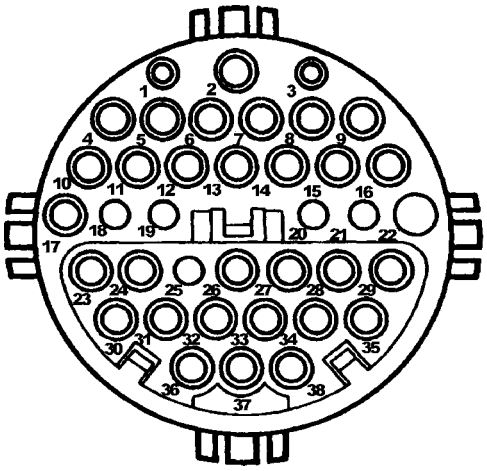
1		Ground
2		Not used
3	CIS-E	Continuous fuel injection system (CFI)
4	ELR	Diesel injection system - Electronic idle speed control system
	EDS	Electronic diesel system
5	ASD	Automatic locking differential
	4MATIC	Automatic-engaged four wheel drive (124 only)
6	SRS	Supplemental Restraint System
7	A/C	Air Conditioning
8		Not used



16-pole Diagnostic Connector

Models 124, 129

1		Ground
2	OBD	Push-button for On Board Diagnostic (California only)
3	CIS-E	Continuous Fuel injection system (CFI)
	DM	Diagnostic Module - LED (California only)
4	EDS	Electronic diesel system
5	ASD	Automatic locking differential
	4MATIC	Automatic-engaged four wheel drive
6	SRS / AB	Supplemental Restraint System / Air Bag
7	A/C	Air Conditioning (Model 124)
	RB	Roll Bar (Model 129)
8	DI	Distributor ignition
	HFM-SFI	HFM Sequential multi-port Fuel Injection/Ignition system
	PEC	Pressurized engine control
9	ADS	Adaptive Damping System
	RB	Roll Bar (Model 124)
10	RST	Roadster Soft Top (Model 129)
		TN-signal (Gasoline)
11	ATA	Anti Theft Alarm system
12	IRCL	Infrared Remote Central Locking
13	ETC	Electronic automatic Transmission Control
14	EA	Electronic Accelerator (Model 124)
	CC / ISC	Cruise Control / Idle Speed Control (Model 124)
	ESCM	Engine System Control Module (MAS), (Model 129)
15		Not used
16		Voltage, Ignition ON (Circuit 15) (Not equipped on all models.)



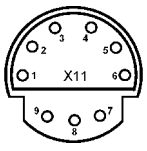
38-Pin Diagnostic Connector

Models 124.034/036, 129.058/063/067/076, 140, 170, 202, 208, 210

The Mercedes Diagnostic “Mushroom” #140-1463 available from Baum Tools Unltd. is recommended to allow easy access to the diagnostic connector. Call 800-848-6657 or 941-927-1414 for more information.

Pin	System	Description
1	Ground (Terminal 31)	W12 (Chassis Ground), W15 (Electronics Ground)
2	Voltage, terminal 87	Ignition Switch 12volts +
3	Voltage, terminal 30	Battery 12volts +
4	EDS	Electronic Diesel System
	IFI	In-line Fuel Injection
	DFI	Electronic Distributor-type Fuel Injection (Diesel)
	HFM-SFI	Hot-Film Engine Management Sequential Multiport Fuel Injection/ignition
	LH-SFI	LH Sequential Multiport Fuel Injection System Engines 104, 119 Engine 120 Right Bank
	ME-SFI	Motor Electronics with Sequential Multiport Fuel Injection/ignition System Engine 119 Engine 120, Right Bank
5	LH-SFI	LH Sequential Multiport Fuel Injection, Engine 120 Left Bank
	ME-SFI	Motor Electronics with Sequential Multiport Fuel Injection/ignition System Engine 120 Left Bank
6	ABS	Anti-lock Brake System
	ETS	Electronic Traction System
	ASR	Acceleration Slip Regulation
	ESP	Electronic Stability Program
7	EA	Electronic Accelerator+
	ISC	Idle Speed Control
	CC	Cruise Control/idle Speed Control
8	BM	Base Module
	BAS	Brake Assist
9	ASD	Automatic Locking Differential, Models 124, 129, 140
10	EATC	Electronic Automatic Transmission Control (5-speed AT) (722.6)
	ETC	Electronic Transmission Control (722.6)
11	ADS	Adaptive Damping System

12	SPS	Speed-sensitive Power Steering
13	TD	Speed Signal (Time Division) (Di) (Diesel) Models 202, 210
	TNA	Signal (Gasoline) on LH-SFI
	TN	Speed Signal (DI/KSS) (Gasoline) on HFM-SFI, ME-SFI
14	Lambda on/off ratio	LH-SFI Engine 119, LH-SFI Engine 120 LH-SFI, Right Bank
15	Lambda on/off ratio	LH-SFI Engine 120 Left Bank
	IC	Instrument Cluster
16	HEAT	Automatic Heater
	TA/C	Air Conditioning (Tempmatic)
	AA/C	Air Conditioning (Automatic)
17	DI	Distributor Ignition, Engines 104, 119, Engine 120, Right
	TD	Speed Signal (Time Division) (Di) (Diesel) Model 140
	TN	Speed Signal (DI/KSS) (Gasoline) on LH-SFI / model 202 HFM-SFI
18	DI	Distributor Ignition, Engine 120, Left
19	DM	Diagnostic Module
20	PSE	Pneumatic System Equipment, Model 140
	MFCM	Multi-function Control Module, Model 210
21	CF	Convenience Feature, Model 140
	RST	Roadster Soft Top, Model 129
22	RB	Roll Bar, Model 129
23	ATA	Anti-theft Alarm
24-25	-	
26	ASD	Automatic Locking Differential, Model 202
27	-	
28	PTS	Parktronic System, Model 140
29	-	
30	AB	Airbag/emergency Tensioning Retractor
31	RCL	Remote Central Locking
32-33	-	
34	CNS	Communication and Navigation System
35	-	
36	STH	Stationary Heater
36	ZUH	Heater Booster
37-38	-	



9-Pole Diagnostic Connector (1980-94)

The 9-pole Diagnostic Connector is used on earlier model vehicles. It can display on-off ratio fault codes (1986 and later), RPM and Lambda sensor values. Various on-off ratio Meters are available that provide access to this type of diagnostic connector. Call Baum Tools at 800-848-6657 or 941-927-1414 for more information on these meters.

Operating the CS1000 - Mercedes Benz

OB15-11 Memory Cartridge - Mercedes Benz Analog & Digital Fault Codes

1. Setting Up

ATTENTION: DO NOT INSERT CARTRIDGE WITH POWER SUPPLIED TO THE CS1000.

PROPER USE OF THE MERCEDES DIAGNOSTIC SYSTEM

Identify vehicle Model and Month/Year of production

Confirm specific drivability complaint. If MIL is on, when did it come on and under what conditions?

Insert the OB15-11 memory cartridge into the base of the scanner. Make sure the arrow on the cartridge is facing up as it is inserted. Gently push the cartridge into the CS1000 until the cartridge seats completely.

Refer to Diagnostic Cable introduction page 9 and connection table page 10 of this manual to determine vehicle cable requirements. Connect the cable specified to the scanner and to the vehicle Diagnostic Connector.

- Connect the 25-pin cable connector head firmly to the scanner 25-pin connection port.
- Connect the Red test lead from the scanner to the power supply socket (B+) on the Diagnostic Connector, where available, or to the vehicle's battery via the extension cable and battery clamp supplied.
- Connect the Black test lead from the scanner to the ground socket on the Diagnostic Connector. Now the scanner powered up and the power indicator light should be fully illuminated. The screen will display E 1.

Note:
Power indicator light (LED) must light up. If it does not, refer to the list below for detailed test.

- Refer to the connection table of this manual; check the Red and Black test lead with the socket number on the Diagnostic Connector, Is there an incorrect or weak connection?
- Check the power requirement on the Diagnostic Connector. (Must be performed with the ignition ON when connected with 16-pole diagnostic connector at socket 16)
- Connect the Yellow test lead to the system diagnostic socket that you use to extract codes.

Refer to this manual or Mercedes Benz maintenance manual for location of the Diagnostic sockets for the type of Diagnostic Connector fitted to the vehicle and the system capabilities available for code access on the applicable Diagnostic sockets.

2. Turn Ignition ON (KOEO) or Engine at idle (KOER)

3. System Selection

E 1	All analog impulse fault code systems. If unsure, start with this system.
E 2	Digital type SRS (1 or 2 airbag) system as follows: **1.** W202 © class). **2.** W129 / W140 1993 - 1996
E 3	Digital type SRS (4 airbags) **1.** W210 (E class). **2.** W129 / W140 1996 1998
E 4	Digital type LH-SFI for the **Current** fault codes. 1991-1993
E 5	Digital type LH-SFI for the **Stored** fault codes. 1991-1993
E 6	Digital type HFM-SFI for the **Current** fault codes. 1993-1997 Digital type PMS for the **Current** fault codes. 1993-1996
E 7	Digital type HFM-SFI for the **Stored** fault codes. 1993-1997 Digital type PMS for the **Stored** fault codes. 1993-1996
E 8	Digital type DM for the **Current** fault codes. 1991-1996
E 9	Digital type DM for the **Stored** fault codes. 1991-1996
E 10	Digital type DM for the **Registered** fault codes. 1991-1996
E 11	Digital type ME-SFI for the **Current** fault codes. 1996-1998
E 12	Digital type ME-SFI for the **Stored** fault codes. 1996-1998

Press the SYSTEM key to scroll to display from E 1 to E 2 system etc....

SYSTEM

ANALOG TEST PROCEDURES

1. Ignition in the KOEO position (Key On Engine Off)
2. Choose system E 1
3. Place test probe (yellow) in pin-out for specific analog test.

DIGITAL TEST PROCEDURE

1. Ignition in the KOEO position (Key On Engine Off)
2. Choose system E 2 thru E 12
3. Place test probe (yellow) in pin-out for specific analog test.
4. If any system does not respond, test it using the Analog Test Procedure.

*Some early LH Injection and Diagnostic Module systems may not respond to the digital test.

4. Read Fault Codes

Press the **READ** key to begin to read the fault codes for the system selected. The scanner will scan all of the fault codes and keep them in memory.

READ

Press the **NEXT** key to scroll through the fault codes ⊂ **xx** . The display will cycle to the first code after the last code is displayed. When there are no faults in the system, ⊂ **0** will be displayed on the screen.

NEXT

There are 5 digital numbers for fault code for the ME-SFI control system, the fault code will automatically display 1 digital number first then 4 digital numbers later. For example, the fault code 1234 will display C 0 then 1 2 3 4 . C 0 stands for (Power-train system)
5678 will display C 1 then 5 6 7 8 . C 1 stands for (Chassis system)
0110 will display C 2 then 0 1 1 0 . C 2 stands for (Body system)
4321 will display C 3 then 4 3 2 1 . C 3 stands for (Unspecified system)

5. Identification/Rectification of Faults

A. Identify fault code and related circuit using this manual or using the factory diagnostic manuals available from Baum Tools Technical Publications 415-566-9229.
B. Carry out required repair before clearing fault codes.

About Current, Stored and Registered Faults

Current Faults - These faults are detected while the car is running at idle or speed. They represent components currently failing. These codes cannot be erased, and are only meaningful with the ignition on and the engine running. Codes found in this system with the KOEO have no meaning. Components not present on the vehicle may be flagged as failing by the cars internal diagnostics due to the generic nature of the cars software. This is particularly true in C-Class (202) cars.

Stored or Permanent Faults - These faults are recorded in the permanent memory of the cars system controller and are the main cause of MIL illumination. These codes can be erased.

Registered Faults - These faults are recorded in the temporary memory of the of the cars system controller. This temporary memory records the number of times a component fails. When a certain number of failures has occurred the fault is moved to permanent storage and the Check Engine Light (MIL) will be illuminated. On cars equipped with Fault Registers the Check Engine Light may stay on after the Stored or Permanent Fault has been erased if another occurrence of the fault has happened since the Permanent Fault was stored. To extinguish the light erase the Stored and Registered faults. These codes can be erased.

Check Engine Light Diagnosis

Mercedes S(140), SL(129), E(210) and C(202) class have multiple systems which can turn on an Check Engine Light. All related systems must be tested for codes and repaired before the light will extinguish.

129 LH	**LH (pin 4 & 5) EA/CC/ISC (pin 7), BM (pin 8), DI (pin 17 & 18) and DM (pin 19)**
140 LH	**LH (pin 4) EA/CC/ISC (pin 7), BM (pin 8), DI (pin 17) and DM (pin 19)**
124 HFM	**HFM (pin 8) EA/CC/ISC (pin 14), and DM (pin 3)**
140 HFM	**HFM (pin 4) EA/CC/ISC (pin 7), BM (pin 8), DI (pin 17) and DM (pin 19)**
202 HFM	**HFM (pin 4) EA/CC/ISC (pin 7) (except C220) and DM (pin 19)**
210 HFM	**HFM (pin 4) EA/CC/ISC (pin 7), BM (pin 8), DI (pin 17) and DM (pin 19)**

6. Clearing Fault Codes

After repairs have been carried out reread the codes. After rereading the codes press the CLEAR key to erase all of the fault codes from the control unit memory. When there are no faults in the system, either ⊂ **1** (Impulse or analog systems) or ⊂ **2** (digital systems) will be displayed on the screen.

CLEAR

7. Return to System Select Function

Press the SYSTEM key to scroll through the system selections.

SYSTEM

Mercedes Benz System Type and Model Applications
OB15-11 Software Cartridge

The Code Scanner will read and clear the fault codes for the following System applications and Year models. Refer to the table of contents section 3 or to system malfunction tables of this manual to determine vehicle model and year.

ANALOG/DIGITAL MODULE OB15-11

SYSTEM	DESCRIPTION	ANALOG	DIGITAL
A/C	Air Conditioning / Heating	1988-93	
ABS	Anti-lock Brake System	1992-95	1992-97
ADS	Automatic Damping System (Suspension)	1991-93	
ASD	Automatic Locking Differential	1991-93	
ASR	Acceleration Slip Regulation	1992-95	1992-97
ATA	Anti-theft Alarm System	1990-95	
BM	Base Module (Master ECU Controller)	1992-95	
CC	Cruise Control (Tempomat)	1992-95	
CF	Convenience Feature	1992-95	
CFI	Continuous Fuel Injection (CIS-E)	1988-92	
CST	Cabriolet Soft Top	1993-95	
DI	Distributor Ignition System	1990-93	
DM (USA)	Diagnostic Module (Emissions)	1990-93	1991-98
EA	Electronic Accelerator	1992-95	
EDS	Electronic Diesel System	1990-93	
ELR	Diesel Electronic Idle Speed Control	1989	
HFM-SFI	Hot Film Engine Management	1993-95	1994-97
IRCL	Infrared Remote Central Locking	1990-95	
ISC	Idle Speed Control	1992-95	
KE	Continuous Injection System (CIS-E)	1987-92	
LH-SFI	LH Sequential Fuel Management	1990-93	1991-93
MAS	Engine System Control Module (Mas)	1990-93	
ME-SFI	Motor Electronic Injection		1996-98
PMS		1993-95	1994-97
PSE	Pneumatic System Equipment	1992-95	
RB	Roll Bar Control	1990-95	
RST	Roadster Soft Top	1992-95	
SPS	Speed-sensitive Power Steering	1992-95	
SRS	Supplemental Restraint System (Airbag)	1988-93	1993-98

TRANSMISSION MODULE OB15-12

4MATIC	4 Wheel Drive Transmission Control	1990-93	1993-95
ETC/EGS	Electronic Transmission Control	1990-93	1993-97

ELECTRONIC IDLE SPEED CONTROL (ELR)

Model	Model Year
201.126	1989

Connect wires of Scanner as follows:

Scanner	Data Link Connector 8-pin
Yellow	Socket 4
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Speed sensor signal
3	Coolant temperature sensor signal
4	ELR control unit or Idle speed control (ISC) system

ELECTRONIC DIESEL SYSTEM (EDS)

Model	Model Year
124.128	1990-91
126.134 126.135	1990-91

Connect wires of Scanner as follows:

Scanner	Data Link Connector 8-pin
Yellow	Socket 4
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Fuel rack position sensor (L7)
3	Air flow sensor (B2/1)
4	EDS control unit (N39), atmospheric pressure sensor
5	EGR valve vacuum transducer (Y31/1) or malfunction in EGR control circuit
6	EDS control unit (N39), internal voltage supply
7	Starter ring gear speed sensor (L3)
8	Coolant temperature sensor (B11/4)
9	Intake air temperature sensor (B2/1a)
10	Voltage supply insufficient
11	Electronic idle speed control actuator or exhaust gas recirculation (EGR) valve vacuum transducer
12	Not used
13	Electronic diesel system control unit (n39), faulty (internal fault memory)
14	Electronic diesel system pressure sensor (B5/1), defective
15	Intake manifold air pressure control valve vacuum transducer (Y31/2), wastage vacuum transducer (Y31/3), or malfunction Intake manifold air pressure circuit

ELECTRONIC DIESEL SYSTEM (EDS)

Model	Model Year
124.128	1992-93
140.134	1992-93

Connect wires of Scanner as follows (124)

Scanner	Data Link Connector 8-pin
Yellow	Socket 4
Black	Socket 1
Red	Battery (+)

Connect wires of Scanner as follows (140)

Scanner	Data Link Connector 38-pin
Yellow	Socket 4
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Fuel rack position sensor (L7)
3	Air flow sensor signal (B2/1)
4	Electronic diesel system (EDS) control unit (N39) or atmospheric pressure sensor
5	Exhaust gas recirculation valve vacuum transducer (Y31/1) or fault in exhaust gas recirculation (EGR) control circuit
6	Electronic diesel system (EDS) control unit (N39), internal voltage supply
7	Starter ring gear speed sensor (L3)
8	Engine coolant temperature sensor (B11/4)
9	Intake air temperature sensor (B2/1a)
10	Voltage supply insufficient
11	Electronic idle speed control actuator (Y22) or exhaust gas recirculation (EGR) valve vacuum transducer (Y31/1) or Boost pressure cut-out switchover valve
12	Not used
13	Electronic diesel system control unit (N39), faulty (internal fault memory)
14	Electronic diesel system pressure sensor (B5/1), defective
15	Boost pressure control/ pressure control flap vacuum transducer (Y31/5) , or defect in Boost pressure control circuit.

Continuous Fuel Injection System (CFI)

Model	Model Year
107.048	1988-91 (California version only)
124.026 124.030 124.050 124.090	1988-89 (California version only)
126.024 126.025	1988-89 (California version only)
126.035 126.039 126.045	1988-91 (California version only)
201.028 (1988-93) 201.029	1988-89 (California version only)

Connect wires of Scanner as follows:

Scanner	Data Link Connector 8-pin
Yellow	Socket 3
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Throttle position switch - wide open throttle fault
3	Engine coolant temperature sensor
4	Air flow sensor position indicator
5	Oxygen sensor
6	Not used
7	TD-signal (rpm)
8	Altitude correction capsule
9	Electronic hydraulic actuator (EHA)
10	Throttle position switch - closed throttle position fault (idle)
12	Exhaust gas recirculation temperature sensor

Continuous Fuel Injection System (CFI)

Models	Model Years
124.026 124.030 124.090 124.230 124.290	1990-93
126.024 126.025	1990-93
201.029	1990-93

Connect Wires of Scanner as Follows:

Scanner	Data Link Connector 8 & 16-pin
Yellow	Socket 3
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Throttle position switch - wide open throttle (WOT), signal faulty
3	Engine coolant temperature signal read by CFI control module
4	Potentiometer voltage illogical
5	Oxygen sensor signal illogical
6	Not used
7	TNA signal(rpm) read by CFI control module
8	Altitude pressure signal from ignition control module illogical
9	Current to EHA is illogical
10	Throttle position switch - closed throttle position fault (idle)
11	Air injection system
12	Absolute pressure values from EZL ignition control module are illogical
13	Intake air temperature reading is illogical
14	Vehicle speed signal read by CFI control module is illogical
15	Not used
16	Exhaust gas recirculation
17	Oxygen sensor is shorted to positive or ground
18	Current to idle control valve is illogical
19	Not used

DTC Readout	Possible Cause of Failure
20	Not used
21	Not used
22	Oxygen sensor heating current illogical
23	Short circuit to positive in purge switchover valve circuit
24	Not used
25	Short circuit to positive in start valve circuit
26	Short circuit to positive in upshift delay solenoid valve circuit
27	Data exchange between CFI control module and ignition control module interrupted
28	Intermittent contact in engine coolant temperature sensor circuit
29	CFI and ignition control module reading different engine coolant temperature
30	Not used
31	Intermittent contact in engine coolant temperature sensor circuit
32	Not used
33	Not used
34	Engine coolant temperature read from ignition control module illogical

Continuous Fuel Injection System (CFI)

Models	Model Years
124.051 129.061	1990-93
129.066	1990-92

Connect wires of Scanner as follows:

Scanner	Data Link Connector 16-pin
Yellow	Socket 3
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Throttle position switch - wide open throttle fault (WOT), signal faulty
3	Engine coolant temperature in CFI control module illogical
4	Air flow sensor position indicator potentiometer current illogical
5	Oxygen sensor signal illogical
6	Not used
7	TNA- signal (rpm) at CFI control module illogical
8	Altitude correction signal from ignition control module
9	Current to EHA is illogical
10	Throttle position switch - closed throttle position fault (idle)
11	Air injection system, open or short circuit
12	Absolute pressure values from ignition control module illogical
13	Intake air temperature illogical
14	Speed signal at CFI control module illogical
15	Not used
16	Exhaust gas recirculation switchover valve, open or short circuit
17	Oxygen sensor signal wire shorted to positive or ground
18	Current to idle control valve is illogical

DTC Readout	Possible Cause of Failure
19	Not used
20	Not used
21	Not used
22	Oxygen sensor heater voltage illogical
23	Short to positive in purge switchover valve circuit
24	Not used
25	Short circuit to positive in start valve circuit
26	Short circuit to positive in upshift delay solenoid valve circuit
27	Data exchange between CFI control module and ignition control module
28	Intermittent contact in engine coolant temperature sensor circuit
29	CFI and ignition control module reading different engine coolant temperature
30	Not used
31	Intermittent contact in engine coolant temperature sensor circuit
32	Not used
33	Not used
34	Engine coolant temperature read from ignition control module illogical

Continuous Fuel Injection System (MAS CONTROLLER)

Models	Model Years
124.026 124.030 124.090 124.230 124.290 129.066 201.029	1990-92

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 14
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Fuel pump relay (circuit 87) not functioning
3	TN/TD signal (RPM) interrupted
4	Output for oxygen sensor heater control defective
5	Output for air injection pump control defective
6	Output for kickdown switch control defective
7	Not used
8	Engine coolant temperature sensor signal out of range
9	Circuit 50 failure
10	Output failure of the start valve
11	A/C compressor engagement signal missing (87Z)
12	Output for A/C compressor control defective
13	Excessive A/C compressor clutch slippage
14	Vehicle speed signal illogical
15	Short circuit detected in fuel primp circuit

LH Sequential Multiport Fuel Injection System (LH-SFI)

Models	Model Years
140.032 140.057 140.076	1992-93
124.034 124.036	1992-93
129.067	1992-95
140.042 140.043 140.051	1992-95

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 4
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Engine coolant temperature sensor circuit 1, open or short circuit.
3	Engine coolant temperature sensor circuit 2, open or short circuit.
4	Voltage at mass air sensor with hot wire circuit. Open or short circuit.
5	Not used
6	Not used
7	TNA-signal (rpm signal) incorrect or open or short circuit.
8	Camshaft position sensor signal. Open or short circuit.
9	Starter signal (circuit 50) missing, open or short circuit.
10	Closed throttle position recognition from electronic accelerator control unit, short circuit.
11	Secondary air injection system, open or short circuit.
12	Burn-off control for mass air sensor with hot-wire, open or short circuit.
13	Intake air temperature sensor, open or short circuit.
14	Not used
15	Not used
16	Exhaust gas recirculation (EGR) switchover valve, open or short circuit.

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DTC Readout	Possible Cause of Failure
17	CAN data: Electronic accelerator control module - no data transmission
18	CAN data: Ignition control module - no data transmission from DI module
19	Left LH-SFI control module no data transmission to right LH-SFI control module
20	LH-SFI control module - no data transmission
21	Oxygen sensor open circuit.
22	Oxygen sensor heater, open or short circuit.
23	Purge switchover valve, open or short circuit.
24	Left adjustable camshaft timing solenoid (Y49/1), open or short circuit
25	Adjustable camshaft timing solenoid, open or short circuit.
27	Injectors, open or short circuit.
29	I GR Start relay module (K29/1), open or short circuit

HFM Sequential Multiport Fuel Injection System

Engines	Model Year
104 111	1993-97

Connect wires of Scanner as follows (124)

Scanner	Data Link Connector 16-pin
Yellow	Socket 8
Black	Socket 1
Red	Socket 16

Connect wires of Scanner as follows (202 129 140)

Scanner	Data Link Connector 38-pin
Yellow	Socket 4
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Engine Coolant temperature sensor
3	Intake air temperature sensor
4	Hot film mass air flow sensor
5	CTP switch
6	Not used
7	Not used
8	Idle speed control (ISC) system at upper or lower control stop or CC or EA indicates "limp home" mode.
9	O2S 1 (before TWC) - voltage too high, circuit open or voltage implausible
10	O2S 2 (after TWC)voltage too high, circuit open or voltage implausible
11	O2S 1 heater (before TWC) - Current too high/low or short circuit.
12	O2S 2 heater (after TWC) - Current too high/low or short circuit.
13	O2S (Lambda) control system operating at rich or lean limit
14	Injector, cylinder 1

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DTC Readout	Possible Cause of Failure
15	Injector, cylinder 2
16	Injector, cylinder 3
17	Injector, cylinder 4
18	Injector, cylinder 5
19	Injector, cylinder 6
20	Self-adaptation at idle speed or upper/lower partial load at rich or lean limit
21	Ignition output 3 or ignition coil for cylinder 1 and 6
22	Ignition output 1 or ignition coil for cylinder 2 and 5 (Engine 111, cylinder 1 and 4)
23	Ignition output 2 or ignition coil for cylinder 3 and 4 (Engine 111, cylinder 2 and 3)
24	CKP sensor or magnet for position sensor not recognized
25	CMP sensor not recognized or implausible
26	Not used
27	TN-signal (rpm signal) - open or short to ground
28	VSS - open circuit
29	Not used
30	Fuel pump relay module - open or short circuit
31	Not used
32	Knock sensors 1 and /or 2
33	Maximum retard setting on at least one cylinder has been reached or the ignition angle deviation between the individual cylinders is greater than 6 degrees crankshaft angle
34	Knock control-output switch in engine control module faulty Momentary fault in self-adaptation closed throttle speed/partial load
35	Model 124,129 and 140 AIR pump switchover valve and/or electromagnetic AIR pump clutch. Model 202 AIR pump switchover valve and/or AIR relay module
36	Purge control valve - open/short to ground or B+
37	Upshift delay switchover valve
38	Adjustable camshaft timing solenoid - open/short to ground or B+
39	Exhaust gas recirculation switchover valve - open/short to ground or B+
40	Transmission overload protection switch - open/short to ground or B+ or open or closed or implausible

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DTC Readout	Possible Cause of Failure
41	CAN communication from engine control module faulty
42	CAN communication from ASR, EA/CC/ISC module or diagnostic module (OBD II) faulty
43	Starter signal (circuit 50) not present
44	Not used
45	Fuel safety shut-off of electronic accelerator or cruise control active
46	Resonance intake manifold switchover valve - open/short to ground or B+
48	O2S 2 (after TWC) heating circuit relay module - open/short to ground or B+
49	Voltage supply at engine control module implausible/low volts
50	Engine control module faulty or not coded.

Base Module (BM)

Models	Model Years
124.034 124.036	1992-93
129.067	1992-95
140.032 140.042 140.043 140.051 140.057 140.076	1992-95

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 8
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2, 3, 4	Not used
5	Maximum permissible temperature in module box exceeded
6	Electromagnetic a/c compressor clutch blocked
7	Poly v-belt slipping
8	Voltage supply for LH-SFI control module interrupted
9	Voltage supply for LH-SFI control module interrupted
10	Voltage supply for LH-SFI control module interrupted Voltage supply for fuel injectors interrupted
11	Voltage supply for accessory equipment control module interrupted
12	Voltage supply for ABS control module, ABS/ASR control module or ASD control module interrupted
13, 14	Not used
15	Voltage supply for kickdown valve interrupted
16	Voltage supply for electromagnetic a/c compressor clutch interrupted
17	Voltage supply for module box blower motor interrupted

Diagnostic Module (DM)

Models	Model Years
124.034 124.036	1992-1993
119.067	1992-1995
140.032 140.042 140.043 140.051	1992-1995

Connect wires of Scanner as follows

Scanner	Data link connector 38-pin
Yellow	Socket 19
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Oxygen sensor faulty
3	Lambda control faulty
4	Air injection system faulty
5	Exhaust gas recirculation faulty
6	Idle speed control faulty
7	Ignition system faulty
8	Engine coolant temperature sensor. Circuit open or circuit short
9	Intake air temperature sensor. Circuit open or circuit short
10	Voltage at mass air sensor too high/low
11	TNA-signal (rpm signal) faulty
12	Oxygen sensor greater, circuit open or circuit short
13	Camshaft position sensor signal from ignition control module faulty
14	Intake manifold pressure too low when starting
15	Wide open throttle position information faulty
16	Closed throttle position information faulty
17	Data exchange fault between individual control module
18	Adjustable camshaft timing solenoid circuit open or circuit short

DTC Readout	Possible Cause of Failure
19	Injector open or short circuit or emission control system adaptation at limit
20	Vehicle speed signal missing
21	Purge switchover valve, circuit open or circuit short
22	Camshaft position sensor signal faulty
23	Intake manifold pressure with engine running too low
24	Starter ring gear segments faulty
25	Knock sensors faulty
26	Upshift delay switchover valve, circuit open or circuit short
27	Engine coolant temperature sensor deviation between sensor circuit 1and sensor circuit 2.
28	Engine coolant temperature sensor (engine coolant temperature change monitor)

Diagnostic Module (DM)

Models	Model Years
140.057 140.076	1992-1995

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 19
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Right oxygen sensor faulty
3	Lambda control of right LH-SFI control module faulty
4	Air injection at right cylinder bank faulty
5	Exhaust gas recirculation of right LH-SFI control module faulty
6	Idle speed control faulty
7	Ignition system for right cylinder faulty
8	Right engine coolant temperature sensor, circuit open or circuit short
9	Right intake air temperature sensor, circuit open or circuit short
10	Voltage at mass air sensor too high/low
11	Tn-signal (rpm signal) at right LH-SFI control module faulty
12	Oxygen sensor heater of right oxygen sensor, circuit open or circuit short
13	Camshaft position sensor signal of right ignition control module faulty
14	Intake manifold pressure at startup (in right ignition control module) too low or too high
15	Wide open throttle position information faulty
16	Closed throttle position information faulty
17	Data exchange fault between right-hand control modules LH-SFI ignition control module electronic accelerator
18	Right adjustable camshaft timing solenoid circuit open or circuit short

1 ANALOG CODES CS1000 Code Scanner OB15-11

DTC Readout	Possible Cause of Failure
19	Right injector circuit open or circuit short or emission control system adaptation in right LH-SFI control module at limit
20	Vehicle speed signal missing
21	Right purge switchover valve, circuit open or circuit short
22	Right camshaft position sensor signal faulty
23	Intake manifold pressure(in right ignition control module) with engine running too low/high
24	Starter ring gear segments faulty
25	Knock sensors or right ignition control module faulty
26	Upshift delay switchover valve, circuit open or circuit short
27	Right engine coolant temperature sensor deviation between circuit 1, and sensor circuit 2.
28	Right engine coolant temperature sensor (engine coolant temperature change monitor)
34	Left oxygen sensor faulty
35	Lambda control of left LH-SFI control module faulty
36	Air injection at left cylinder bank faulty
37	Exhaust gas recirculation of left LH-SFI control module faulty
38	Not used
39	Ignition system for left cylinder faulty
40	Left engine coolant temperature sensor, circuit open or circuit short
41	Left intake air temperature sensor, circuit open or circuit short
42	Voltage at mass air sensor too high/low
43	Tn-signal (rpm signal) at left LH-SFI control module faulty
44	Oxygen sensor heater of left oxygen sensor, circuit open or circuit short
45	Camshaft position sensor signal of left ignition control module faulty
46	Intake manifold pressure at (in left ignition control module) faulty
47	Not used
48	Not used
49	Data exchange fault between left LH-SFI ignition control module

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DTC Readout	Possible Cause of Failure
50	Left adjustable camshaft timing solenoid circuit open or circuit short
51	Left injector circuit open or circuit short or emission control system adaptation in left LH-SFI control module at limit
52	Not used vehicle speed signal missing
53	Left purge switchover valve, circuit open or circuit short
54	Left camshaft position sensor signal faulty
55	Intake manifold pressure(in left ignition control module) with engine running too low/high
56	Starter ring gear segments and/or left crankshaft position sensor faulty
57	Knock sensors or left ignition control module faulty
58	Not used
59	Left engine coolant temperature sensor deviation between circuit 1, and sensor circuit 2.
60	Left engine coolant temperature sensor (engine coolant temperature change monitor)

Diagnostic Module (DM)

Models	Model Year
124.028 124.032 124.052 124.092	1994-95

Connect wires of Scanner as follows

Scanner	Data link connector 16-pin
Yellow	Socket 3
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No Fault Found
2	Heated oxygen sensor faulty
3	Lambda control faulty
4	Air injection system faulty hot film mass air flow sensor with hot wire
5	Exhaust gas recirculation faulty
6	Idle speed control faulty
7	Ignition system faulty
8	Engine coolant temperature sensor open circuit
9	Intake air temperature sensor, open circuit
10	Voltage at mass air sensor too high/low
11	Tn-signal (rpm signal) at engine control module faulty
12	Heated oxygen sensor heater circuit open or circuit short
15	Injector, cylinder 2
16	Closed throttle position information faulty
17	Data exchange malfunction between individual control module
18	Adjustable camshaft timing solenoid circuit open or circuit short
19	Injectors circuit open or circuit short emission control module adaptation in engine control module at limit
20	Vehicle speed signal not present
21	Purge switchover valve circuit open or circuit short

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DTC Readout	Possible Cause of Failure
22	Crankshaft position sensor signal faulty
23	Intake manifold pressure (in base module pressure sensor-) with engine running too high/low.
24	Starter ring gear segments and /or crankshaft position sensor faulty
25	Knock sensors or engine control module faulty
26	Upshift delay faulty
27	Not used
28	Engine coolant temperature sensor (engine coolant temperature change monitor)
44	Not used
45	Fuel safety shut-off electronic accelerator or cruise control active
46	Resonance intake manifold switchover valve
47	Not used
48	Not used
49	Voltage supply at engine control module 8v
50	Engine control module

Distributor Ignition (DI) LH-SFI

Model	Model Years
140.032	1992-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 17
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Maximum retard setting on at least one cylinder has been reached
3	Not used
4	Load sensor in ignition control module faulty.
5	Knock sensors 1 and/or 2 faulty.
6	Camshaft position sensor faulty.
7	Knock output switch in ignition control module faulty.
8	Transmission overload switch does not close.
9	Transmission overload switch does not open.
10	Not used.
11	Preference resistor faulty .
12	Tn-signal is outside the tolerance range.
13	Not used
14	Not used
15	Ignition coil 1 output from ignition control module faulty
16	Ignition coil 2 output from the DI defective or primary winding of the coil has an open circuit
17	Crankshaft position sensor faulty
18	Magnets for crankshaft position sensor (CKP) not recognized.
19	Not used

1 ANALOG CODES CS1000 Code Scanner OB15-11

DTC Readout	Possible Cause of Failure
20	Ignition control module DTC memory faulty
21	Load sensor in control module faulty. (Recognized with engine running)
22	Not used
23	Not used
24	Not used
25	Not used
26	Ignition control module data exchange fault
27	LH-SFI control module data exchange fault
28	Electronic accelerator control module/idle speed control data exchange fault
34	Ignition misfire detected at cylinder 1 (104) / cylinder 1 (119)
35	Ignition misfire detected at cylinder 5 (104) / cylinder 5 (119)
36	Ignition misfire detected at cylinder 3 (104) / cylinder 4 (119)
37	Ignition misfire detected at cylinder 6 (104) / cylinder 8 (119)
38	Ignition misfire detected at cylinder 2 (104) / cylinder 6 (119)
39	Ignition misfire detected at cylinder 4 (104) / cylinder 3 (119)
40	Ignition misfire detected at cylinder 7 (119)
41	Ignition misfire detected at cylinder 2 (119)

Distributor Ignition (DI)

Model	Model Years
124.051	1990-1995
129.061 129.066	1990-1995

Connect wires of Scanner as follows:

Scanner	Data Link Connector 16-pin
Yellow	Socket 8
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Maximum retard setting on at least one cylinder has been reached
3	Engine coolant temperature sensor faulty
4	Load sensor in EAL/AKR control module faulty
5	Knock sensors 1 and/or 2 faulty
6	Camshaft position sensor faulty
7	Knock output switch in EAL/AKR ignition control module faulty
8	Transmission overload switch does not close
9	Transmission overload switch does not open
10	Data exchange from EAL/AKR engine control module to CFI control module faulty.
11	Preference resistor faulty
12	Tn-signal is outside the tolerance range
13	Full load contact does not open.
14	Idle speed contact does not open.
15	Ignition coil 1 output from EAL/AKR ignition control module faulty
16	Ignition coil 2 output from EAL/AKR ignition control module faulty
17	Crankshaft position sensor faulty

Distributor Ignition (DI)

Models	Model Years
124.034 124.036	1992-1995
129.067 129.076	1992-1995
140.042 140.043 140.051 140.057 140.070 140.076	1992-1995

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 17
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Maximum retard setting on at least one cylinder has been reached
3	Not used
4	Load sensor in EAL/AKR control module faulty
5	Knock sensors 1 and/or 2 faulty
6	Camshaft position sensor faulty
7	Knock output switch in ignition control module faulty
8	Transmission overload switch does not close
9	Transmission overload switch does not open
10	Not used
11	Reference resistor (ignition control module) faulty
12	TN-signal (engine RPM) is outside the tolerance range
13	Not used
14	Not used
15	Ignition coil 1 output from ignition control module faulty or primary winding of ignition coil has open circuit
16	Ignition coil 2 output from ignition control module faulty or primary winding of ignition coil has open circuit

DTC Readout	Possible Cause of Failure
17	Crankshaft position sensor faulty
18	Magnets for crankshaft position sensor not recognized
19	Ground, Coding from Left EZL/AKR Ignition Control Module Not Present
20	Ignition control module DTC memory faulty
21	Load sensor in control module faulty. (recognized with engine running)
22	Not used
23	Not used
24	Not used
25	Not used
26	Ignition control module data exchange fault
27	Control module data exchange fault
28	Electronic accelerator control module/idle speed control data exchange fault

Cruise Control/Idle Speed Control (CC/ISC) w/o ASR

Models	Model Years
124 129 140 202	1992-97

Connect wires of Scanner as follows (W124)

Scanner	Data Link Connector 16-pin
Yellow	Socket 14
Black	Socket 1
Red	Socket 16

Connect wires of Scanner as follows (129 140 202)

Scanner	Data Link Connector 38-pin
Yellow	Socket 7
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Cruise control/idle speed control module
3	Cruise control/idle speed control actuator
4	Cruise control switch
5	Stop lamp switch
6	Starter lock-out/backup lamp switch
7	Data bus (CAN)
8	Left front axle vehicle speed sensor
9	Left rear axle vehicle speed sensor or Hall-effect speed sensor Rear axle vehicle speed sensor from ABS control module Rear axle vehicle speed sensor from ETS/SPS control module Incorrect CC/ISC control module installed ETS signal
10	Engine speed (RPM) signal (TNA)
11	Fuel safety shut-off to LH-SFI control module
12	Cruise control/idle speed control voltage supply

Electronic Accelerator / Cruise Control / Idle Speed Control (EA/CC/ISC) w/ASR

Models	Model Year
124 129 140 202	1992-96

Connect wires of Scanner as follows (W124)

Scanner	Data Link Connector 16-pin
Yellow	Socket 14
Black	Socket 1
Red	Socket 16

Connect wires of Scanner as follows (W202 W129 W140)

Scanner	Data Link Connector 38-pin
Yellow	Socket 7
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	EA/CC/ISC control module (N4/1) or Safety contact switch (M16/1s1) or Stop lamp switch or Cruise control switch or Actual value potentiometer or Starter lock-out/back-up lamp switch or engine speed signal or vehicle speed signal or closed throttle position switch or safety relay in EA/CC/ISC control module
3	Right EA/CC/ISC actuator (left cylinder bank) (M16/1)
4	Cruise control switch (S40)
5	Stop lamp switch (S9/1)
6	Starter lock-out/backup lamp switch
7	CAN data bus signal from EA/CC/ISC, ABS/ASR, HFM-SFI or LH-SFI (right or left) control module faulty.
8	Left front axle vehicle speed sensor from ABS/ASR control module
9	Left rear axle vehicle speed sensor from ABS/ASR control module or in 124 chassis Hall-effect speed sensor.
10	Engine speed signal (TN) from base module (LH-SFI) or engine control module (HFM-SFI)

11	Closed throttle recognition signal to engine control module (HFM-SFI or Left LH-SFI) Fuel safety shut-off to engine control module (HFM-SFI or left or right LH-SFI)
12	EA/CC/ISC control module voltage supply
13	Left EA/CC/ISC actuator (right cylinder bank) or actual value potentiometer (M16/4r1 or M16/4r2) or actuator motor (M16/4m1)or magnetic clutch (M16/4k1).
14	Closed throttle position contact switch
15	CAN data exchange with ABS/ASR control module illogical

Electronic Automatic Transmission Control (ETC) with CFI

Models	Model Years
129	1990-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 13
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Not used
3	Engine load signal interrupted
4	Throttle valve switch (potentiometer) interrupted
5	Engine speed (RPM) signal interrupted
6	Vehicle speed signal interrupted
7	Output fault in 5-speed automatic transmission control module or fault in control valve.
8	5-speed automatic transmission control module
9	Control valve
10	Control valve short circuit

Electronic Automatic Transmission Control (ETC) w/LH-SFI

Model	Model Years
129	1990-1993
140	1990-1996

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 10
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Not used
3	Transmission overload protection switch (4/5 gear) faulty
4	CAN data line to Electronic Accelerator/Cruise Control Module
5	CAN data line to ignition control module (knock sensor)
6	CAN data line - short or open circuit
7	Open circuit at control valve or transmission control module (5-speed automatic)
8	5-speed automatic transmission control module
9	Control valve faulty
10	Control valve short circuit

Also test BM and DI systems.

Automatic-engaged Four-wheel Drive (4MATIC)

Models	Model Years
124.230 124.290	1990-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 8-pin
Yellow	Socket 5
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	4MATIC control module
3	Brake light switch
4	Left front axle vehicle speed sensor
5	Right front axle vehicle speed sensor
6	Rear speed sensor signal
7	All 3 vehicle speed sensors
8	Over volts protection relay, front axle train valve
9	Over volts protection relay, central differential lock valve
10	Over volts protection relay, stop lamp switch, Rear axle differential lock valve
11	Steering angle sensor signal

Adaptive Damping System (ADS)

Models	Model Years
129.061 129.066	1991-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 9
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Adaptive damping system control module
3	Body acceleration sensor
4	Wheel acceleration sensor
5	Steering angle sensor
6	Front axle solenoid valves 1
7	Front axle solenoid valves 2
8	Rear axle solenoid valves 1
9	Rear axle solenoid valves 2
10	Not used
11	Not used
12	ABS signal
13	Oil level switch (ADS)
14	Steering angle sensor not activated

Adaptive Damping System (ADS)

Models	Model Years
129.067 129.076	1991-1995

Connect wires of Scanner as follows

Scanner	Data link connector 38-pin
Yellow	Socket 11
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Faults
1	No fault found
2	Adaptive damping system control module
3	Body acceleration sensor
4	Wheel acceleration sensor
5	Steering angle sensor
6	Front axle solenoid valves 1
7	Front axle solenoid valves 2
8	Rear axle solenoid valves 1
9	Rear axle solenoid valves 2
12	Right front axle vehicle speed signal
13	Oil level switch (ADS)
14	Steering angle sensor not activated/initialized
15	Comfort or sport switch (ADS) short circuit
17	Vehicle load sensor
18	Adaptive damping system warning lamp
19	Volts supply too low
20	Steering angle sensor
21	Volts supply too high
22	Comfort or sport switch (ADS)

Adaptive Damping System (ADS)

Models	Model Years
140.032 140.042 140.051 140.057 140.070 140.076 140.134	1991-1994

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 11
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Faults
1	No fault found
2	Adaptive damping system control module
3	Body acceleration sensor
4	Wheel acceleration sensor
5	Steering angle sensor
6	Front axle solenoid valves 1
7	Front axle solenoid valves 2
8	Rear axle solenoid valves 1
9	Rear axle solenoid valves 2
12	Right front axle vehicle speed signal
13	Oil level switch (ADS)
14	Steering angle sensor not activated
15	Comfort or sport switch (ADS)
17	Vehicle load sensor
18	Adaptive damping system warning lamp
19	Volts supply too low
20	Steering angle sensor
21	Volts supply too high
22	Comfort or sport switch (ADS)

Automatic Locking Differential (ASD)

Models	Model Years
124.128	1991-1995
126.134 126.135	1991
129.061	1991-1995
140.134	1991-1995
201.028	1991-1993

Connect wires of Scanner as follows (Model 124 126 129)

Scanner	Data Link Connector 8-pin
Yellow	Socket 5
Black	Socket 1
Red	Battery (+)

Connect wires of Scanner as follows (Model 140.134)

Scanner	Data Link Connector 38-pin
Yellow	Socket 9
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible cause of faults
1	No fault found
2	Adaptive damping system control module
3	Stop lamp switch
4	Left front axle vehicle speed sensor signal
5	Right front axle vehicle speed sensor signal
6	Rear speed sensor signal
7	No speed signal from any sensor, missing ground
8	Adaptive damping system valve or stop lamp switch

Anti-lock Brake System (ABS)

Models	Model Years
140.032 140.042 140.043 140.134	1992-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 6
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Faults
1	No faults found
2	Left front axle vehicle speed sensor signal
3	Right front axle vehicle speed sensor signal
4	Rear axle speed sensor signal
6	Left front axle solenoid valve
7	Right front axle solenoid valve
8	Rear axle solenoid valve
10	Return/pressure pump motor or return/pressure pump relay
11	Solenoid valves relay
12	Master cylinder switchover valve
13	Stop lamp switch
14	ABS Lateral acceleration sensor
15	ABS control module
16	Vehicle speed sensors incorrect, dirty or damaged toothed rotor
17	Low voltage at solenoid valves relay

Anti-lock Brake System (ABS & ABS w/ASR)

Models	Model Years
124.034 124.036	1992-1995
140.032 140.042 140.051 140.057 140.070 140.076	1992-1995

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 6
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Faults
1	No fault found
2	Left front axle vehicle speed sensor signal
3	Right front axle vehicle speed sensor signal
4	Left rear axle vehicle speed sensor signal
5	Right rear axle vehicle speed sensor signal
6	Left front axle solenoid valve
7	Right front axle solenoid valve
8	Left rear axle solenoid valve
9	Right rear axle solenoid valve
10	Return/pressure pump motor or return/pressure pump relay
11	Solenoid valves relay
12	Models 140.04/05 Master cylinder switchover valve
13	Stop lamp switch(ASD/ASR)
14	Models140.04/05 ABS lateral acceleration sensor
15	ABS/ASR control module
16	Vehicle speed sensors incorrect, dirty or damaged toothed rotor
17	Low volts at solenoid valves relay
20	Switchover or solenoid valve

DTC Readout	Possible Cause of Faults
21	Pressure switch charge
22	Pressure switch charge
23	Pressure switch hydraulic system
24	ASR charging pump
30	CAN data line to electronic accelerator/cruise control/idle speed control module
31	CAN data line to LH-SFI control module left LH-SFI control module Right LH-SFI control module
32	CAN data line to left ignition control module right ignition control module Ignition control module, LH-SFI
33	CAN data line, short or open circuit

Anti-lock Brake System (ABS)

Model	Model Years
202 210	1994-95

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 6
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Faults
1	No fault found
2	Left front axle vehicle speed sensor, open circuit
3	Right front axle vehicle speed sensor, open circuit
4	Rear speed sensor, open circuit
6	Solenoid valve, Left front axle
7	Solenoid valve, Right front axle
8	Solenoid valve, Rear axle
10	Return/pressure pump motor or return/pressure pump relay
11	Solenoid valves relay
15	ABS control module
16	Vehicle speed sensors
17	Battery volts low
25	Left front vehicle speed sensors signal Illogical
26	Right front vehicle speed sensors signal Illogical
27	Rear front vehicle speed sensors signal Illogical

Anti-lock Brake System (ABS & ABS w/ASR)

Models	Model Year
124.034	1994-95
129	1994-95
140	1994-95

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 6
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Faults
1	No fault found
2	Left front axle vehicle speed sensor, open circuit
3	Right front axle vehicle speed sensor, open circuit
4	Rear speed sensor, open circuit
6	Left front axle solenoid valves
7	Right front axle solenoid valves
8	Solenoid valve, rear axle
10	Return pump motor or return pump relay
11	Solenoid valves relay
12	Models140.04/05Master cylinder switchover valve
13	Brake lamp switch
14	Models140.04/05 Lateral acceleration sensor
15	ABS control module
16	Vehicle speed sensors signal Illogical
17	Solenoid valves relay
25	Left front vehicle speed sensors signal, Illogical
26	Right front vehicle speed sensors signal, Illogical
27	Rear front vehicle speed sensors signal, Illogical
29	Models140.04/05 Lateral acceleration sensor signal, Illogical

Electronic Traction Systems (ASR, ETS)

Models	Model Years
129 140 202	1995
210	1995-96

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 6
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Faults
1	No fault found
2	ASR/SPS or ETS/SPS control module
3	Left front axle VSS sensor, open circuit
4	Right front axle VSS sensor, open circuit
5	Left rear axle VSS sensor, open circuit
6	Right rear axle VSS sensor, open circuit
7	Left front axle VSS valves, illogical
8	Right front axle VSS valves illogical
9	Left rear axle VSS valve illogical
10	Right rear axle VSS valve illogical
11	VSS signal illogical
12	ASR/ETS hydraulic unit, solenoid valves relay
13	ASR/ETS hydraulic unit, Left front axle solenoid valves(hold)
14	ASR/ETS hydraulic unit, Left front axle solenoid valve(hold)
15	ASR/ETS hydraulic unit, right front axle solenoid valve (release)
16	ASR/ETS hydraulic unit, right front axle solenoid valve (release)
17	ASR/ETS hydraulic unit, left rear axle solenoid valve(hold)
18	ASR/ETS hydraulic unit, left rear axle solenoid valve (release)

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DTC Readout	Possible Cause of Faults
19	ASR/ETS hydraulic unit, right rear axle solenoid valve(hold)
20	ASR/ETS hydraulic unit, right rear axle solenoid valve (release)
21	ASR/ETS hydraulic unit, switchover/solenoid valve
22	ASR/ETS hydraulic unit, inlet solenoid valve
23	ASR only: ASR system pressure too low
24	ASR/ETS hydraulic unit, high-pressure/return pump relay
27	Stop lamp switch
28	Battery voltage too low, circuit 87
29	ETS only Circuit 30, volts supply
30	ASR only CAN date bus to EA/CC/ISC control module, interrupted
31	ASR only CAN communication with LH-SFI control module Left LH-SFI control module right LH-SFI control module faulty CAN communication with engine control module faulty
32	ASR only CAN communication with DI or left and right DI control module, faulty
33	ASR only CAN communication faulty in general
34	ETS only Brakes overheated
35	Model 129.076,140.04/05/07 Master brake cylinder switchover valve
36	Model 129.076,140.04/05/07 ASR lateral acceleration sensor, open circuit
37	Model 129.076,140.04/05/07 ASR lateral acceleration sensor, illogical
38	ETS only EST/SPS control module not identify the software (not coded)
39	Model 140/210 ETS/SPS or ASR/SPS control module
40	Model 140 SPS P-valve
41	Model 140/210 ASR/SPS or ETS/SPS control module

Speed Sensitive Power Steering (SPS)

Models	Model Years
140.032 140.042 140.051 140.057 140.070 140.076 140.134	1992-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 12
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Speed sensitive power steering control module
3	Left/center rear axle speed sensor signal
4	Right rear axle vehicle speed sensor signal
5	Diffident vehicle speed signals from right and left rear axle sensor
6	No vehicle speed sensor signal
7	Inductive speed sensor, transmission faulty
8	Short circuit between positive connection of speed sensitive power steering valve and ground (-)
9	Short circuit at speed sensitive power steering valve
10	Open circuit at speed sensitive power steering valve
11	Volts supply at speed sensitive power steering control module

Speed Sensitive Power Steering (SPS)

Model	Model Years
140	1994

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 12
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Speed sensitive power steering control module
3	Comparison of axle vehicle speed signal attars/left front axle vehicle speed signal faulty
4	Axle vehicle speed signal status missing
5	Speed-sensitive power steering control module
6	Speed-sensitive power steering P-valve; short circuit
7	Speed-sensitive power steering P-valve; open circuit
8	Short circuit between speed sensitive power steering P-valve (+) and ground (-)

Cabriolet Soft top (CST)

Model	Model Years
124.066	1993-95

Connect wires of Scanner as follows

Scanner	Data Link Connector
Yellow	Power Soft top test connection (4 pole) at Socket 2. The connection is located at the right front passenger footwell. To avoid the need for an extension cable, connect the black lead of code scanner to any good ground and red lead to a battery + source inside vehicle.
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Volts low
3	Normal operating time exceeded
4	Limit switch signals Illogical
5	Soft top compartment cover "locked", limit switch,
6	Soft top compartment cover "closed", limit switch,
7	Soft top compartment cover "open", limit switch
8	Soft top fabric bow "locked", limit switch
9	Soft top fabric bow "down", limit switch
10	Soft top fabric bow "raised", limit switch
11	Left front soft top "locked", limit switch
12	Right front soft top "locked", limit switch
13	Soft top "open" switch (soft top in storage compartment), limit switch ,
14	Soft top "overhead", limit switch
15	Soft top "retracted", limit switch
16	Roll bar "extended", limit switch,
17	Automatic deployment of roll bar has occurred
18	Power soft top switch
19	Vehicle speed signal
20	Circuit in power soft top control module, solenoid valve, roll bar retracted
21	Circuit hydraulic unit, circuit solenoid valve, roll bar retracted
22	Circuit in power soft top control module, solenoid valve, roll bar extended
23	Circuit solenoid valve, roll bar extended
24	Circuit in power soft top control module, Power windows

Roll Bar (RB)

Model	Model Year
124.066	1993-95

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 9
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No faults found
2	Roll bar control module
3	Roll bar control module volts supply
6	Roll bar deployment solenoid, open circuit, short circuit to Battery + or ground (-).
7	Rear axle switch, short circuit to Battery + or ground (-).
8	Roll bar indicator lamp faulty

Roll Bar (RB)

Models	Model Years
129.061 129.066 129.067 129.076	1990-12/93

Connect wires of Scanner as follows (Model 129.061/066)

Scanner	Data Link Connector 16-pin
Yellow	Socket 7
Black	Socket 1
Red	Socket 16

Connect wires of Scanner as follows (Model 129.067/076, all 129 from 1993)

Scanner	Data Link Connector 38-pin
Yellow	Socket 22
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No faults found
2	Roll bar control module
3	Volts supply
4	Driver seat belt lock relay open circuit or short circuit to Battery + or ground (-).
5	Passenger seat belt lock relay open circuit or short circuit to Battery + or ground (-).
6	Roll bar deployment solenoid, open circuit or short circuit to Battery + or ground (-).
7	Left and/or right axle switch, roll bar, short circuit to 30 or 31
8	Roll bar warning lamp
9	SRS warning lamp and/or code scanner button held to erase faulty
10	SRS control unit

Roadster Soft Top (RST)

Models	Model Years
129.061 129.066 129.067 129.076	1990-12/93

Connect wires of Scanner as follows (Model 129.061/066)

Scanner	Data Link Connector 16-pin
Yellow	Socket 10
Black	Socket 1
Red	Socket 160

Connect wires of Scanner as follows (Model 129.067/076, all 129 from 1993)

Scanner	Data Link Connector 38-pin
Yellow	Socket 21
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No faults stored
2	Limit switch, left locked, soft top storage compartment cover
3	Limit switch, right locked, soft top storage compartment cover
4	Limit switch, left closed, soft top storage compartment cover
5	Limit switch, right closed, soft top storage compartment cover
6	Limit switch, left locked, soft top fabric bow
7	Limit switch, right locked, soft top fabric bow
8	Limit switch, left closed, soft top fabric bow
9	Limit switch, right closed, soft top fabric bow
10	Limit switch, left front locked, soft top
11	Limit switch, right front locked, soft top
12	Limit switch soft top storage compartment cover open
13	Limit switch soft top fabric bow raised
14	Limit switch soft top down (in storage compartment)
15	Limit switch soft top up (secondary closing speed)

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DTC Readout	Possible Cause of Failure
16	Limit switch roll bar retracted
17	Limit switch left side window down Circuit in power soft top control module, solenoid valve, roll bar retracted
18	Limit switch right side window down Circuit hydraulic unit, circuit solenoid valve, roll bar retracted
19	Axle vehicle speed signal illogical Circuit in power soft top control module, solenoid valve, roll bar extended
20	Hardtop installed recognition Circuit solenoid valve, roll bar extended
21	Power soft top switch Circuit in power soft top control module, Power windows
22	Roll bar switch
23	Roll bar control module
24	Roll bar crash deployment
25	Limit switch signals illogical
26	Operation time exceeded
27	Insufficient volts
28	No speedometer signal
29	No axle vehicle wheel speed sensor signal
30	Soft top operation blocked

Roadster Soft Top (RST)

Model	Model Years
129	1/94-6/96

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 21
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No faults stored
2	Low voltage
3	RST/RB hydraulic unit locked up.
4	Vehicle speed sensor fault
5	RST/RB hydraulic unit
6	Right or left power window activation
7	Right or left front soft top “locked” switch fault, Soft top open/closed switch, Fabric bow locked switch,
8	Power soft top control module defective
9	Roll bar crash deployment has occurred
10	Power soft top switch or Roll bar switch.
11	Power soft top switch indicator lamp or Roll bar switch indicator lamp or Warning buzzer.

Infrared Remote Control for Central Locking (IRCL)

Models	Model Years
129.061 129.066 129.067 129.076	1990-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 12
Black	Socket 1
Red	Socket 16

Scanner	Data Link Connector 38-pin
Yellow	Socket 31
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Infrared remote control module
3	Supply pump, central locking system short to ground
4	Infrared remote control receiver, Left front door/Right front door/Trunk lid Red indicator lamps, short to ground
5	Infrared remote control receiver, Left front door/Right front door/Trunk lid Green indicator lamps, short to ground
6	Supply pump, central locking system, short to circuit 30
7	Infrared remote control receiver, Left front door/Right front door/Trunk lid Red indicator lamps, short to circuit 30 or open circuit
8	Infrared remote control receiver, Left front door/Right front door/Trunk lid Green indicator lamps, in receiver have short to short to circuit 30 or open circuit
9	Driver door switch group wiring, short to circuit 30 ATA/convenience microswitch wiring short to circuit 30 ATA/convenience microswitch wiring short to circuit 30
10	Ignition/starter switch-position recognition switch, open circuit
11	Ignition/starter switch-position recognition switch, open circuit 31
12	Left front door actuator, open circuit
13	Right door actuator, open circuit
14	Trunk lid lock actuator, open circuit

Infrared Remote Control for Central Locking (IRCL)

Model	Model Years
140	1992-96

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 31
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Left front door actuator, open circuit
3	Warning buzzer -open circuit
4	Warning buzzer -open circuit to ground
5	Red indicator lamps, short to ground
6	Green indicator lamps, short to ground
7	Short to positive, lock circuit 1
8	Short to positive, lock circuit 2
9	Red indicator lamps, short to positive
10	Green indicator lamps, short to positive
11	Infrared remote control module faulty
12	Immobilization output, short to circuit 30 (Battery +)

Infrared Remote Control for Central Locking (IRCL)

Model	Model Years
129	1993-96

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 31
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	IRCL control module
3	Supply pump, central locking system short to ground
4	Infrared remote control receiver, Left front door/Right front door/Trunk lid Red indicator lamps, short to ground
5	Infrared remote control receiver, Left front door/Right front door/Trunk lid Green indicator lamps, short to ground
6	Supply pump, central locking system, short to B (+)
7	Infrared remote control receiver, Left front door/Right front door/Trunk lid Red indicator lamps , short to B (+) or open circuit
8	Infrared remote control receiver, Left front door/Right front door/Trunk lid Green indicator lamps, short to B (+) or open circuit
9	Driver door switch group wiring, short to B (+) ATA/CF microswitch wiring short to B (+) ATA/CF microswitch wiring short to B (+)
10	Ignition/starter switch-position recognition switch, open circuit
11	Ignition/starter switch-position recognition switch, open circuit 31
12	Left front door actuator, open circuit
13	Right door actuator, open circuit
14	Trunk lid lock actuator, open circuit
15	Immobilization output, short to B (+)

Pneumatic Systems Equipment (PSE)

Models	Model Years
129 140	1992-94

Connect wires of Scanner as follows

Scanner	Data link connector 38-pin
Yellow	Socket 20
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Central locking system, air demand too high, leakage
3	Retractable trunk lid grip, air demand too high, leakage
4	Backup assist, air demand too high, leakage
5	Orthopedic backrest pressure, air demand too high, leakage
6	Manifold vacuum assist, air demand too high, leakage
7	Short to positive, lock circuit 1
8	Short to positive, lock circuit 2
9	Signal fault, Rear head restraint retraction
10	Signal fault, Central locking interior control switch
11	Signal fault, Front door
12	Signal from lock circuit 1 is present for longer than 2 minutes
13	Signal from lock circuit 2 is present for longer than 2 minutes,
14	Central locking interior control switch signal is present for longer than 2 minutes
15	Rear head restraint retraction signal is present for longer than 2 minutes
16	Not used
17	Pneumatic control module faulty

Anti-theft Alarm System(ATA)

Models	Model Years
129.061 129.066 129.067 129.076	1990-93
140.032 140.042 140.051 140.057 140.070 140.076 140.134	1990-93
129 140 202	1994-96

Connect wires of Scanner as follows (Model 129.061, 129.066)

Scanner	Data Link Connector 16-pin
Yellow	**Socket 11**
Black	Socket 1
Red	Battery (+)

Connect wires of Scanner as follows (Model 129, 140, 202)

Scanner	Data Link Connector 38-pin
Yellow	Socket 23
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Alarm activated, trunk sensor circuit
3	Alarm activated, engine hood circuit
4	Alarm triggered, glove compartment
5	Alarm activated, rear door circuit Console compartment circuit
6	Alarm activated, front door circuit
10	Alarm activated, radio circuit
12	Alarm activated, ignition circuit
14	Alarm activated, brake circuit
19	AT Control module faulty
20	Left front door actuator, No ground connection
21	ATA disarmed, Starter lock-out relay module. short to circuit 30
23	ATA armed, Open to circuit 30

Cellular Telephone (CT)

Models	Model Years
129.061 129.066 129.067 129.076	1992-95
140.032 140.042 140.051 140.057 140.070 140.076 140.134	1992-95

If a fault code is set, the code is shown on the in-car telephones display and the phone goes off-line.

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	TR memory defect (ROM)
2	TR memory defect (RAM)
3	NAM defect
4	ESN defect
5	TR memory defect (EE PROM)
6	TR output power defect
7	IDCM defect
8	TR output power control defect

Convenience Features (CF)

Model	Model Year
140	1992-96

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 21
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Control module, Close circuit for left front power window motor
3	Control module, Open circuit for left front power window motor
4	Control module, Close circuit for right front power window motor
5	Control module, Open circuit for right front power window motor
6	Control module, Close circuit for left rear power window motor
7	Control module, Open circuit for left rear front power window motor
8	Control module, Close circuit for right rear power window motor
9	Control module, Open circuit for right rear power window motor
10	Switch for left front power window Closing time exceeded
11	Switch for left front power window Opening time exceeded
12	Switch for right front power window Closing time exceeded
13	Switch for right front power window Opening time exceeded
14	Left rear power window circuit and left rear power window switch front console closing time exceeded
15	Left rear power window circuit and left rear power window switch front console opening time exceeded
16	Right rear power window circuit and right rear power window switch front console closing time exceeded
17	Right rear power window circuit and right rear power window switch front console opening time exceeded
18	Circuit for left front lock switch, right front, trunk lid lock switch closing time exceeded, lock switch circuit 2

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DTC Readout	Possible Cause of Failure
19	Circuit for left front lock switch, right front, trunk lid lock switch opening time exceeded, lock switch circuit 1
20	Left front power window switch short to ground or wires reversed
21	Right front power window switch short to ground or wires reversed
22	Left rear window circuit and left rear power window switch front console short to ground or wires reversed
23	Right rear power window circuit and right rear power window switch front console short to ground or wires reversed
24	Left front power window motor , wiring or speed sensor
25	Right front power window motor, wiring or speed sensor
26	Left rear power window motor, wiring or speed sensor
27	Right rear power window motor, wiring or speed sensor
28	Left front power window motor, sensor wiring reversed
29	Right front power window motor, sensor wiring reversed
30	Left rear power window motor, sensor wiring reversed
31	Right rear power window motor, sensor wiring reversed
32	Left front power window motor, Speed sensor signal faulty
33	Right front power window motor, Speed sensor signal faulty
34	Left rear power window motor, Speed sensor signal faulty
35	Right rear power window motor, Speed sensor signal faulty
36	Convenience control module faulty
37	Volts too low(9V), circuit 30E fuse F4-11
38	Sliding/pop-up roof switch circuit short, check wiring harness
39	Volts supply circuit 30 A, control module
40	Volts supply circuit 30 B, control module

Tempmatic A/C

Models	Model Year
201.028 201.029 201.034 201.126 201.128	1988-93

Connect wires of Scanner as follows

Scanner	Data Link Connector 8-pin
Yellow	Socket 4
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	In car temperature sensor, short circuit
3	In car temperature sensor, open circuit
4	Outside temperature sensor, short circuit
5	Outside temperature sensor, open circuit
6	Evaporator temperature sensor, short circuit
7	Evaporator temperature sensor, open circuit
12	Coolant temperature gauge sensor, short circuit
13	Coolant temperature gauge sensor, open circuit
14	Feedback potentiometer, short circuit
15	Feedback potentiometer, open circuit
30	Coolant pump, short circuit
33	A/C compressor control module, short circuit
34	Auxiliary fan relay short circuit
50	Switchover valve unit (5 connections) between pins 5 and 4 faulty
51	Switchover valve unit (5 connections) between pins 5 and 6 faulty
52	Switchover valve unit (5 connections) between pins 5 and 2 faulty
54	Switchover valve unit (5 connections) between pins 5 and 3 faulty
55	Switchover valve unit (4 connections) between pins 5 and 1 faulty
56	Switchover valve unit (4 connections) between pins 5 and 2 faulty

DTC Readout	Possible Cause of Failure
57	Switchover valve unit (4 connections) between pins 5 and 1 faulty
58	Switchover valve blend air flaps (warm) short circuit
59	Switchover valve blend air flaps (cold) short circuit
60	Switchover valve blend air flaps (closes) short circuit
61	Blower switch, low speed faulty
62	Blower switch, high speed faulty

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A/C

Models	Model Year
124.034 124.036	1992-1995

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 16
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Short circuit, In car temperature sensor
3	Open circuit, In car temperature sensor
4	Short circuit, Outside temperature sensor
5	Open circuit, Outside temperature sensor
6	Short circuit, Evaporator temperature sensor
7	Open circuit, Evaporator temperature sensor
8	Short circuit Left heat exchanger temperature sensor
9	Left heat exchanger sensor, open
10	Right heat exchanger temperature sensor, short circuit
11	Right heat exchanger temperature sensor, open
12	Engine coolant temperature sensor, short circuit
13	Engine coolant temperature sensor, open circuit
30	Circulation pump, short or open circuit
31/32	Duo valve short circuit/open
33	compressor cut-out control module short circuit/open
34	Auxiliary fan 2nd stage (actuation), short circuit
56	Switchover valve fresh air/recirculated air flaps, long stroke short circuit
57	Switchover valve fresh air/recalculated air flaps, long stroke short circuit

A/C SELF DIAGNOSTIC SYSTEMS

A/C

Models	Model Years
124.026 124.030 124.050 124.090 124.051 124.230 124.290	1988-95
126.024 126.025 126.035 126.039 126.045 126.134 126.135	1988-91

Connect wires of Scanner as follows

Scanner	Data Link Connector 8-pin
Yellow	Socket 7
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	In car temperature sensor, short circuit
3	In car temperature sensor, open circuit
4	Outside temperature sensor, short circuit
5	Outside temperature sensor, open circuit
6	Evaporator temperature sensor, short circuit
7	Evaporator temperature sensor, open circuit
8	Heater core temperature sensor, short-circuit
9	Heater core sensor, open
12	Engine coolant temperature sensor, short circuit
13	Engine coolant temperature sensor, open circuit
30	Coolant pump, short circuit
31	Duo valve short circuit/open
33	A/C compressor control module short circuit
34	Auxiliary fan relay faulty
50	Switchover valve unit, faulty at between pins 5 and 8 (7 connections)
51	Switchover valve unit, faulty between pins 8 and 7 (7 connections)
52	Switchover valve unit, faulty between pins 8 and 3(7 connections)
54	Switchover valve unit, faulty between pins 8 and 4 (7 connections)
55	Switchover valve unit, faulty between pins 8 and 6(7 connections)
56	Switchover valve unit, faulty between pins 8 and 2(7 connections)
57	Switchover valve unit, faulty between pins 8 and 1(7 connections)

A/C SELF DIAGNOSTIC SYSTEMS

TAU 2.1

READING ACTUAL VALUES

1. Remove the operating console from the TAU
2. At the upper side of the operating consol there is a display.
3. Ignition ON : Position 1
4. The fan speed selector NOT on position 1
5. The display alternates between the sensor/component number and the value of that sensor/component. Example: "OP E" : Open circuit or "CL O" : Closed circuit.

COMPONENT UNDER TEST

Number	Component
02	Interior Temperature Sensor
04	Exterior Temperature Sensor
06	Evaporator Temperature Sensor
08	Left Heater Core Temperature Sensor
10	Right Heater Core Temperature Sensor
12	Engine Coolant Temperature Sensor (ECT)
14	Left Temperature Selector Wheel Setting (Degree C)
16	Right Temperature Selector Wheel Setting (Degree C)
18	Vehicle Speed Signal(km/h)
20	Soft Top OPEN : "U", Soft Top CLOSED : "O"
22	Power Supply Voltage
83	OFF/ON (Not Used)
84	Blower Motor Voltage "050" (0.5v) - "600" (6.0v)

FAULT DIAGNOSIS

1 Turn temperature selector wheel into the white area.
2 Place the air speed selector at position 0 and the air direction to "DOWN"
3 IGNITION = ON : Position 1
4 Within the next 10 sec., press the "RECIRCULATE AIR" and "REST" button simultaneously for 3 sec.
5 Press the AUTO button until all error numbers are read and recorded.

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - TAU 2.1		
DTC Readout	**Description**	**Cause**
1	No DTC's Stored in System Memory.	No faults
2	In-Car Temperature Sensor (B10/4)	Short Circuit
3	In-Car Temperature Sensor (B10/4)	Open Circuit
4	Outside Temperature Sensor (B10/5)	Short Circuit
5	Outside Temperature Sensor (B10/5)	Open Circuit
6	Evaporator Temperature Sensor (B10/6)	Short Circuit
7	Evaporator Temperature Sensor (B10/6)	Open Circuit
8	Heater Core Temperature Sensor (B10/1))	Short Circuit
9	Heater Core Temperature Sensor (B10/1)	Open Circuit
10	Heater Core Temperature Sensor (Right)	Short Circuit
11	Heater Core Temperature Sensor(Right)	Open Circuit
12	Engine Coolant Temperature Sensor (B10/8)	Short Circuit
13	Engine Coolant Temperature Sensor (B10/8)	Open Circuit
16	Center Air Vent Control Module (N18/2r2)	Short Circuit
17	Center Air Vent Control Module (N18/2r2)	Open Circuit
18	Center Air Vent Feedback Potentiometer (R23/3)	Short Circuit
19	Center Air Vent Feedback Potentiometer (R23/3)	Open Circuit
20	Left Air Vent Control Module (N18/2r1)	Short Circuit
21	Left Air Vent Control Module (N18/2r1)	Open Circuit
22	Left Air Vent Feedback Potentiometer (R23/1)	Short Circuit
23	Left Air Vent Feedback Potentiometer (R23/1)	Open Circuit
24	Right Air Vent Control Module (N18/2r3)	Short Circuit
25	Right Air Vent Control Module (N18/2r3)	Open Circuit
26	Right Air Vent Feedback Potentiometer (R23/2)	Short Circuit
27	Right Air Vent Feedback Potentiometer (R23/2)	Open Circuit
30	Auxiliary Coolant Pump	Short Circuit
31	Automatic A/C Monovalve (Left)	Short Circuit
32	Automatic A/C Monovalve (Right)	Short Circuit
33	A/C Compressor Signal	Short Circuit

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - TAU 2.1		
DTC Readout	**Description**	**Cause**
34	Auxiliary Fan Signal 2 Stage	Short Circuit
35	Auxiliary Fan Signal 1 Stage	Short Circuit
50	Switchover Valve Block Signal	Short Circuit
70	Auxiliary Coolant Pump	Open Circuit
71	Automatic A/C Monovalve (Left)	Open Circuit
72	Automatic A/C Monovalve (Right)	Open Circuit
73	A/C Compressor Signal	Open Circuit
74	Auxiliary Fan Signal 2nd Stage	Open Circuit
75	Auxiliary Fan Signal 1st Stage	Open Circuit

A/C SELF DIAGNOSTIC SYSTEMS

129 Chassis to 8/95

READING ACTUAL VALUES

1. IGNITION ON : Position 1
2. Press the REST button and within 1 second press blower speed button 4.
3. The temperature window (upper left) will alternately display the test step number (ex. "02" In-car Temp) or "0P E" for Open Circuit or "Cl 0" for Closed Circuit.
4. Press "F" button to go to higher test.
5. Press "C" button to go to a lower test.
6. To end this test mode turn IGNITION OFF : Position 0 for longer then 5 seconds.

COMPONENT UNDER TEST

Number	Component
02	In-Car Temperature Sensor
04	Outside Temperature Sensor
06	Evaporator Temperature Sensor
08	Heater Core Temperature Sensor
12	Engine Coolant Temperature (ETC) Sensor
14	Temperature Selector Wheel Setting
18	Vehicle Speed Signal(km/h)
20	Soft Top OPEN : "U" ; Soft Top CLOSED : "O"
22	Power Supply Voltage
83	OFF/ON (Not Used)
84	Blower motor voltage "050" (0,5V) - "600" (6,0V)

FAULT DIAGNOSIS

1. Turn temperature selector wheel into the white area.
2. IGNITION ON : Position 1
3. Within the next 10 sec., press the "F", "RECIRCULATE AIR" and "REST" buttons simultaneously for 2 to 4 seconds.
4. The display will show the permanent DTC's stored. press the "RECIRCULATE AIR" button after each is displayed until the display reads "END"
5. Press "RECIRCULATE AIR" button again and the intermittent DTC's will be shown. A SQUARE is shown after each DTC to indicate that it is intermittent. Press the "RECIRCULATE AIR" button again to see the next DTC. Until "END" is shown.
6. To erase the DTC's : IGNITION ON : Position 1 Press the "RECIRCULATE AIR", "REST" and "UP" buttons simultaneously until --- is displayed in the window.

FAULT CODES - 129 Chassis to 8/95		
DTC Readout	**Description**	**Cause**
1	No DTC's Stored in System Memory.	No Faults

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 129 Chassis to 8/95		
DTC Readout	**Description**	**Cause**
2	In-Car Temperature Sensor (B10/4)	Short Circuit
3	In-Car Temperature Sensor (B10/4)	Open Circuit
4	Outside Temperature Sensor (B10/5)	Short Circuit
5	Outside Temperature Sensor (B10/5)	Open Circuit
6	Evaporator Temperature Sensor (B10/6)	Short Circuit
7	Evaporator Temperature Sensor (B10/6)	Open Circuit
8	Heater Core Temperature Sensor (B10/1)(Left)	Short Circuit
9	Heater Core Temperature Sensor (B10/1)(Left)	Open Circuit
10	Heater Core Temperature Sensor (Right)	Short Circuit
11	Heater Core Temperature Sensor(Right)	Open Circuit
12	Engine Coolant Temperature Sensor (B10/8)	Short Circuit
13	Engine Coolant Temperature Sensor (B10/8)	Open Circuit
16	Center Air Vent Control Module (N18/2r2)	Short Circuit
17	Center Air Vent Control Module (N18/2r2)	Open Circuit
18	Center Air Vent Feedback Potentiometer (R23/3)	Short Circuit
19	Center Air Vent Feedback Potentiometer (R23/3)	Open Circuit
20	Left Air Vent Control Module (N18/2r1)	Short Circuit
21	Left Air Vent Control Module (N18/2r1)	Open Circuit
22	Left Air Vent Feedback Potentiometer (R23/1)	Short Circuit
23	Left Air Vent Feedback Potentiometer (R23/1)	Open Circuit
24	Right Air Vent Control Module (N18/2r3)	Short Circuit
25	Right Air Vent Control Module (N18/2r3)	Open Circuit
26	Right Air Vent Feedback Potentiometer (R23/2)	Short Circuit
27	Right Air Vent Feedback Potentiometer (R23/2)	Open Circuit
30	Auxiliary Coolant Pump (M13)	Short Circuit
31	Automatic A/C Monovalve (Y19)	Short Circuit
32	Automatic A/C Monovalve (Right)	Short Circuit
33	A/C Compressor Signal	Short Circuit
34	Auxiliary Fan Signal, 2nd Stage	Short Circuit
35	Auxiliary Fan Signal, 1st Stage	Short Circuit
50	Switchover Valve Block Signal (Y11)	Short Circuit
70	Auxiliary Coolant Pump (M13)	Open Circuit

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 129 Chassis to 8/95		
DTC Readout	**Description**	**Cause**
71	Automatic A/C Monovalve (Y19)	Open Circuit
72	Automatic A/C Monovalve (Right)	Open Circuit
73	A/C Compressor Signal	Open Circuit
74	Auxiliary Fan Signal, 2nd Stage	Open Circuit
75	Auxiliary Fan Signal, 1st Stage	Open Circuit

A/C SELF DIAGNOSTIC SYSTEMS

129 Chassis from 9/95

READING ACTUAL VALUES

1. IGNITION : Position 1
2. Set temperature selector to 72 degrees F.
3. Press the REST button for more than 6 seconds.
4. The left display will alternately show the number "01" and the in-car temperature.
5. Press the FAN button and the next component number and its value will be displayed.
6. Press the REST button to end the test program.

COMPONENT UNDER TEST

Number	Component
01	In-Car Temperature Sensor with Aspirator Blower (B10/4)
02	Outside Temperature Sensor (B14)
03	Left Heater Core Temperature Sensor (B10/2)
05	Evaporator Temperature Sensor (B10/6)
06	Engine Coolant Temperature Sensor (ECT) (B11/4)
07	Refrigerant Pressure in Bar
08	Refrigerant Temperature Sensor (B12/1)
09	Not Used
10	Blower Control Voltage
20	Control Current for Auxiliary Fan exp. : 7 = 7 mA
21	Engine RPM. example 00..99 (x100) = 9900
22	Vehicle Speed
23	PIN 58D exp. 99.0 = 99% of Battery Voltage
24	Battery Voltage : 12.8 = 12,8 Volt
40	A/C Controller Software Version Coding
41	A/C Controller Hardware Version
42	Variant code 1
43	Variant code 2
50	Not Used
51	Not Used
52	Not Used
54	ON/OFF A/C Compressor emergency off signal from engine control module.

60	Roof "OPE" = OPEN, "CLO" = CLOSED
61	Left Air Outlet, Potentiometer Voltage
62	Vacuum Actuator 46, Feedback Potentiometer Voltage
63	Center Air Outlet, Potentiometer Voltage
64	Vacuum Actuator 47, Feedback Potentiometer Voltage
65	Right Air Outlet, Potentiometer Voltage
66	Vacuum Actuator 47, Feedback Potentiometer Voltage

FAULT DIAGNOSIS

1. IGNITION : Position 1
2. Temperature selector wheel : "LO"
3. Within 20 seconds press the REST and DEFROST buttons simultaneously for more than 5 seconds.
4. The LED in the RECIRCULATE button flashes and "dI A" appears on the display.
5. Press the AUTO button until all DTC's are displayed and recorded.
6. The current faults are displayed first, then the intermittent faults. "END"' is displayed when all codes have been displayed.
7. To erase codes press AUTO again, "dEL" will be displayed. Press v and ^ simultaneously for more than 5 seconds. The display will then show "---". Press AUTO to cancel the erase.
8. IGNITION : OFF to end the test program.

FAULT CODES - 129 Chassis from 9/95	
DTC Readout	**Description**
026	CAN Bus Communication
226	In-Car Air Temperature Sensor (B10/4)
227	Outside Air Temperature Sensor (B14)
228	Heater Core Temperature Sensor (B10/2)
230	Evaporator Temperature Sensor (B10/6)
231	Engine Coolant Temperature Sensor (B11/4)
232	Refrigerant Pressure Sensor (B12)
233	Refrigerant Temperature Sensor (B12/1)
241	Refrigerant Level
416	Coolant Circulation Pump (A31m1)
417	Automatic A/C Monovalve (Y19)
419	A/C Compressor Electromagnetic Clutch (A9k1)
420	Closed (Idle) Throttle Speed Increase

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 129 Chassis from 9/95	
DTC Readout	**Description**
421	Auxiliary Fan Control Module (N65/1)
422	Serial Interface Connection (K1) to Instrument Cluster (IC)
423	Switchover Valve Block (15 connection multiplex) (Y11)
459	Serial Interface Connection (K2) to Instrument Cluster (IC)

A/C SELF DIAGNOSTIC SYSTEMS

140 Chassis to 8/95

READING ACTUAL VALUES

1. Turn temperature selector wheel into the white area.
2. IGNITION = ON : Position 1
3. Press the left and right "AUTO" buttons.
4. Within 20 seconds press the "REST" button for more than 5 sec.
5. LEFT DISPLAY = Component Number
   RIGHT DISPLAY = Actual Component Value or "HI" for a short circuit or "LO" for an open circuit
6. Press the left "AUTO" button to monitor the next component.
7. Press the "REST" button to end the test mode.

COMPONENTS UNDER TEST

Number	Component
01	In-Car Temperature Sensor with Aspirator Blower (B10/4)
02	Outside Temperature Sensor (B10/5)
03	Left Heater Core Temperature Sensor (B10/2)
04	Right Heater Core Temperature Sensor (B10/3)
05	Evaporator Temperature Sensor (B10/6)
06	Engine Coolant Temperature (ECT) Sensor (A/C) (B10/8)
07	Refrigerant Pressure in Bar : Ex. 06'4 = 6.4 Bar
08	Blower Control Voltage from 8(min) - 60(max)
09	Software Status, A/C Pushbutton Control Module(N22) Mfg.
10	Left rear heater core temperature sensor (B10/9)
11	Right rear heater core temperature sensor (B10/10)
12	Rear Evaporator Temperature Sensor (B10/11)
13	Software Status, Rear A/C Pushbutton Control Module(N22) Mfg.
16	Control Module Applicable for Charcoal Filter : "A"=YES "0 "=NO

FAULT DIAGNOSIS

1. Turn the left selector wheel into the red area.
2. Turn the right selector wheel into the blue area.
3. IGNITION = ON : Position 1.
4. Press the "AUTO" button.
5. Within 20 seconds, press the "REST" and "O" button for more than 2 seconds.
6. The display will show the permanent DTC's stored. Left window "E0" or "E1", right window "01", "02"...etc. Record each DTC and press the right "AUTO" button to display the next code. Continue until "END" is displayed.
7. To erase the DTC's : Turn IGNITION OFF, Then turn IGNITION ON : Position 1. Press the left "AUTO" button. A "d" (delete) is displayed in the left window. By pressing the right "AUTO" button the DTC will be deleted. Alternate left and right "AUTO" buttons until all DTCs are erased and "E0 00" is displayed.

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 140 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
001	No DTC's Stored in System Memory.		
002	A/C Pushbutton Control Module (N22)		
003	Rear A/C Pushbutton Control Module (N22/3)		
006	Connection to the Switchover Valve Block (Y11)		
007	Data Exchange (CAN B)	Short Circuit.	
008	Data Exchange (CAN A)	Short Circuit.	
009	Data Exchange (CAN A and CAN B)	Short Circuit.	
010	Make the Diagnosis Again.		
011	Data Exchange (CAN B)	Open Circuit.	
012	Data Exchange (CAN A)	Open Circuit.	
013	Connection with the Rear A/C Pushbutton Control Module		
014	Data Exchange (CAN B) : Rear A/C Control Module	Open Circuit.	
015	Data Exchange (CAN A) : Rear A/C Control Module	Open Circuit.	
016	In-Car Air Temperature Sensor (B10/4)	Short Circuit	CONTINUOUS
017	In-Car Air Temperature Sensor (B10/4)	Short Circuit	INTERMITTENT
018	In-Car Air Temperature Sensor (B10/4)	Short or Open Circuit	CONTINUOUS
019	In-Car Air Temperature Sensor (B10/4)	Short or Open Circuit	INTERMITTENT
024	Left Heater Core Temperature Sensor (B10/2)	Short Circuit	CONTINUOUS
025	Left Heater Core Temperature Sensor (B10/2)	Short Circuit	INTERMITTENT
026	Left Heater Core Temperature Sensor (B10/2)	Short or Open Circuit	CONTINUOUS
027	Left Heater Core Temperature Sensor (B10/2)	Short or Open Circuit	INTERMITTENT
028	Right Heater Core Temperature Sensor (B10/3)	Short Circuit	CONTINUOUS
029	Right Heater Core Temperature Sensor (B10/3)	Short Circuit	INTERMITTENT
030	Right Heater Core Temperature Sensor (B10/3)	Short or Open Circuit	CONTINUOUS
031	Right Heater Core Temperature Sensor (B10/3)	Short or Open Circuit	INTERMITTENT
032	Outside Air Temperature Sensor (B10/5)	Short Circuit	CONTINUOUS
033	Outside Air Temperature Sensor (B10/5)	Short Circuit	INTERMITTENT
034	Outside Air Temperature Sensor (B10/5)	Short or Open Circuit	CONTINUOUS
035	Outside Air Temperature Sensor (B10/5)	Short or Open Circuit	INTERMITTENT

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 140 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
036	Evaporator Temperature Sensor (B10/6)	Short Circuit	CONTINUOUS
037	Evaporator Temperature Sensor (B10/6)	Short Circuit	INTERMITTENT
038	Evaporator Temperature Sensor (B10/6)	Short or Open Circuit	CONTINUOUS
039	Evaporator Temperature Sensor (B10/6)	Short or Open Circuit	INTERMITTENT
040	Engine Coolant Temperature Sensor (B10/8)	Short Circuit	CONTINUOUS
041	Engine Coolant Temperature Sensor (B10/8)	Short Circuit	INTERMITTENT
042	Engine Coolant Temperature Sensor (B10/8)	Short or Open Circuit	CONTINUOUS
043	Engine Coolant Temperature Sensor (B10/8)	Short or Open Circuit	INTERMITTENT
044	Refrigerant Pressure Sensor (B12)	Short Circuit	CONTINUOUS
045	Refrigerant Pressure Sensor (B12)	Short Circuit	INTERMITTENT
046	Refrigerant Pressure Sensor (B12)	Short or Open Circuit	CONTINUOUS
047	Refrigerant Pressure Sensor (B12)	Short or Open Circuit	INTERMITTENT
048	Left Temperature Wheel	Short Circuit	CONTINUOUS
049	Left Temperature Wheel	Short Circuit	INTERMITTENT
050	Left Temperature Wheel	Short or Open Circuit	CONTINUOUS
051	Left Temperature Wheel	Short or Open Circuit	INTERMITTENT
052	Right Temperature Wheel	Short Circuit	CONTINUOUS
053	Right Temperature Wheel	Short Circuit	INTERMITTENT
054	Right Temperature Wheel	Short or Open Circuit	CONTINUOUS
055	Right Temperature Wheel	Short or Open Circuit	INTERMITTENT
072	Heater Supply Unit Coolant Circulation Pump (A31m1)	Short Circuit	CONTINUOUS
073	Heater Supply Unit Coolant Circulation Pump (A31m1)	Short Circuit	INTERMITTENT
074	Coolant Circulation Pump (A31m1)	Short or Open Circuit	CONTINUOUS
075	Coolant Circulation Pump (A31m1)	Short or Open Circuit	INTERMITTENT
076	Coolant Circulation Pump (A31m1)	Overload	CONTINUOUS
077	Coolant Circulation Pump (A31m1)	Overload	INTERMITTENT
080	Left Duovalve (Water Valve) (A31y1)	Short Circuit	CONTINUOUS
081	Left Duovalve (Water Valve) (A31y1)	Short Circuit	INTERMITTENT
082	Left Duovalve (Water Valve) (A31y1)	Short or Open Circuit	CONTINUOUS
083	Left Duovalve (Water Valve) (A31y1)	Short or Open Circuit	INTERMITTENT
084	Right Duovalve (Water Valve) (A31y2)	Short Circuit	CONTINUOUS

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 140 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
085	Right Duovalve (Water Valve) (A31y2)	Short Circuit	INTERMITTENT
086	Right Duovalve (Water Valve) (A31y2)	Short or Open Circuit	CONTINUOUS
087	Right Duovalve (Water Valve) (A31y2)	Short or Open Circuit	INTERMITTENT
088	A/C Compressor Ground Activation		CONTINUOUS
089	A/C Compressor Ground Activation		INTERMITTENT
090	A/C Compressor Ground Activation	Short or Open Circuit	CONTINUOUS
091	A/C Compressor Ground Activation	Short or Open Circuit	INTERMITTENT
096	Auxiliary Fan, 1ST Stage Activation	Short Circuit	CONTINUOUS
097	Auxiliary Fan, 1ST Stage Activation	Short Circuit	INTERMITTENT
098	Auxiliary Fan, 1ST Stage Activation	Short or Open Circuit	CONTINUOUS
099	Auxiliary Fan, 1ST Stage Activation	Short or Open Circuit	INTERMITTENT
100	Auxiliary Fan, 2ND Stage Activation	Short Circuit	CONTINUOUS
101	Auxiliary Fan, 2ND Stage Activation	Short Circuit	INTERMITTENT
102	Auxiliary Fan, 2ND Stage Activation	Short or Open Circuit	CONTINUOUS
103	Auxiliary Fan, 2ND Stage Activation	Short or Open Circuit	INTERMITTENT
104	Auxiliary Fan, 3RD Stage Activation	Short Circuit	CONTINUOUS
105	Auxiliary Fan, 3RD Stage Activation	Short Circuit	INTERMITTENT
106	Auxiliary Fan, 3RD Stage Activation	Short or Open Circuit	CONTINUOUS
107	Auxiliary Fan, 3RD Stage Activation	Short or Open Circuit	INTERMITTENT
108	Auxiliary Coolant Pump Control Relay Module (K30), Power Supply	Short Circuit	CONTINUOUS
109	Auxiliary Coolant Pump Control Relay Module (K30), Power Supply	Short Circuit	INTERMITTENT
110	Auxiliary Coolant Pump Control Relay Module (K30), Power Supply	Short or Open Circuit	CONTINUOUS
111	Auxiliary Coolant Pump Control Relay Module (K30), Power Supply	Short or Open Circuit	INTERMITTENT
112	Engine RPM Increase Diode Matrix (V2)	Short Circuit	CONTINUOUS
113	Engine RPM Increase Diode Matrix (V2)	Short Circuit	INTERMITTENT
114	Engine RPM Increase Diode Matrix (V2)	Short or Open Circuit	CONTINUOUS
115	Engine RPM Increase Diode Matrix (V2)	Short or Open Circuit	INTERMITTENT
116	Activated Charcoal Filter Actuator (A32m2) : (OPEN)	Short Circuit	CONTINUOUS
117	Activated Charcoal Filter Actuator (A32m2) : (OPEN)	Short Circuit	INTERMITTENT

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 140 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
118	Activated Charcoal Filter Actuator (A32m2) : (OPEN)	Short or Open Circuit	CONTINUOUS
119	Activated Charcoal Filter Actuator (A32m2) : (OPEN)	Short or Open Circuit	INTERMITTENT
120	Activated Charcoal Filter Actuator (A32m2) : (CLOSED)	Short Circuit	CONTINUOUS
121	Activated Charcoal Filter Actuator (A32m2) : (CLOSED)	Short Circuit	INTERMITTENT
122	Activated Charcoal Filter Actuator (A32m2) : (CLOSED)	Short or Open Circuit	CONTINUOUS
123	Activated Charcoal Filter Actuator (A32m2) : (CLOSED)	Short or Open Circuit	INTERMITTENT
128	Left Rear Heater Core Temperature Sensor (B10/9)	Short Circuit	CONTINUOUS
129	Left Rear Heater Core Temperature Sensor (B10/9)	Short Circuit	INTERMITTENT
130	Left Rear Heater Core Temperature Sensor (B10/9)	Short or Open Circuit	CONTINUOUS
131	Left Rear Heater Core Temperature Sensor (B10/9)	Short or Open Circuit	INTERMITTENT
132	Right Rear Heater Core Temperature Sensor (B10/10)	Short Circuit	CONTINUOUS
133	Right Rear Heater Core Temperature Sensor (B10/10)	Short Circuit	INTERMITTENT
134	Right Rear Heater Core Temperature Sensor (B10/10)	Short or Open Circuit	CONTINUOUS
135	Right Rear Heater Core Temperature Sensor (B10/10)	Short or Open Circuit	INTERMITTENT
136	Left Temperature Selector wheel	Short Circuit	CONTINUOUS
137	Left Temperature Selector wheel	Short Circuit	INTERMITTENT
138	Left Temperature Selector wheel	Short or Open Circuit	CONTINUOUS
139	Left Temperature Selector wheel	Short or Open Circuit	INTERMITTENT
140	Right Temperature Selector wheel	Short Circuit	CONTINUOUS
141	Right Temperature Selector wheel	Short Circuit	INTERMITTENT
142	Right Temperature Selector wheel	Short or Open Circuit	CONTINUOUS
143	Right Temperature Selector wheel	Short or Open Circuit	INTERMITTENT
144	Rear Evaporator Temperature Sensor (B10/11)	Short Circuit	CONTINUOUS

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 140 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
145	Rear Evaporator Temperature Sensor (B10/11)	Short Circuit	INTERMITTENT
146	Rear Evaporator Temperature Sensor (B10/11)	Short or Open Circuit	CONTINUOUS
147	Rear Evaporator Temperature Sensor (B10/11)	Short or Open Circuit	INTERMITTENT
148	Coolant Circulation Pump (A31/1m1)	Short Circuit	CONTINUOUS
149	Coolant Circulation Pump (A31/1m1)	Short Circuit	INTERMITTENT
150	Coolant Circulation Pump (A31/1m1)	Short or Open Circuit	CONTINUOUS
151	Coolant Circulation Pump (A31/1m1)	Short or Open Circuit	INTERMITTENT
152	Coolant Circulation Pump (A31/1m1)	Overload	CONTINUOUS
153	Coolant Circulation Pump (A31/1m1)	Overload	INTERMITTENT
156	Left Duovalve (Water Valve) (A31/1y1)	Short Circuit	CONTINUOUS
157	Left Duovalve (Water Valve) (A31/1y1)	Short Circuit	INTERMITTENT
158	Left Duovalve (Water Valve) (A31/1y1)	Short or Open Circuit	CONTINUOUS
159	Left Duovalve (Water Valve) (A31/1y1)	Short or Open Circuit	INTERMITTENT
160	Right Duovalve (Water Valve) (A31/1y2)	Short Circuit	CONTINUOUS
161	Right Duovalve (Water Valve) (A31/1y2)	Short Circuit	INTERMITTENT
162	Right Duovalve (Water Valve) (A31/1y2)	Short or Open Circuit	CONTINUOUS
163	Right Duovalve (Water Valve) (A31/1y2)	Short or Open Circuit	INTERMITTENT
164	Rear Refrigerant Shut-Off Valve (Y67)	Short Circuit	CONTINUOUS
165	Rear Refrigerant Shut-Off Valve (Y67)	Short Circuit	INTERMITTENT
166	Rear Refrigerant Shut-Off Valve (Y67)	Short or Open Circuit	CONTINUOUS
167	Rear Refrigerant Shut-Off Valve (Y67)	Short or Open Circuit	INTERMITTENT
168	Rear Tunnel Flap Vacuum Valve (Y67/1)	Short Circuit	CONTINUOUS
169	Rear Tunnel Flap Vacuum Valve (Y67/1)	Short Circuit	INTERMITTENT
170	Rear Tunnel Flap Vacuum Valve (Y67/1)	Short or Open Circuit	CONTINUOUS
171	Rear Tunnel Flap Vacuum Valve (Y67/1)	Short or Open Circuit	INTERMITTENT

140 Chassis from 9/95

READING ACTUAL VALUES

1. IGNITION : Position 1
2. Press the AUTO button
3. Set both temperature selectors to 72 degrees F.
4. Press the REST button for more than 5 seconds.
5. The left display will alternately show the number "1" and the in-car temperature.
6. Press the AUTO button and the next component number and its value will be displayed.
7. Press the REST button to end the test program.

A/C SELF DIAGNOSTIC SYSTEMS

COMPONENT UNDER TEST

Number	Component
01	In-Car Temperature Sensor with Aspirator Blower (B10/4)
02	Outside Temperature Sensor (B10/5) 1996, (B14) as of 1997
03	Left Heater Core Temperature Sensor (B10/2)
04	Right Heater Core Temperature Sensor (B10/3)
05	Evaporator Temperature Sensor (B10/6)
06	Engine Coolant Temperature (ECT) Sensor (A/C) (B11/4)
07	Refrigerant Pressure in Bar
08	Refrigerant Temperature Sensor (B12/1)
10	Blower Control Voltage
11	Emissions (Refrigerant Leak) Sensor (B31)
12	Sun (Excessive Heat) Sensor (B32)
20	Control Current for Auxiliary Fan example : 7 = 7 mA
21	Engine RPM. example 00..99 (x100) = 9900
22	Vehicle Speed
23	PIN 58D example. 99.0 = 99% of Battery Voltage
24	Battery Voltage : 12.8 = 12,8 Volt
30	Left Rear Heater Core Temperature Sensor (B10/9)
31	Right Rear Heater Core Temperature sensor (B10/10)
32	Rear Evaporator Temperature Sensor (B10/11)
33	Rear Blower Control Voltage
34	Left Rear Temperature Sensor version
35	Right Rear Temperature Sensor
38	Rear A/C Controller Software Version Coding
39	Rear A/C Controller Hardware Version
40	Front A/C Controller Software Version Coding
41	Front A/C Controller Hardware Version
42	Variant code 1
43	Variant code 2

A/C SELF DIAGNOSTIC SYSTEMS

FAULT DIAGNOSIS

1. IGNITION : Position 1
2. Left Temperature selector wheel : HI
   Right Temperature selector wheel : LO
3. Within 20 seconds press the REST and EC buttons simultaneously for more than 5 seconds.
4. The LED in the RECIRCULATE button flashes and "OFF" appears on the display.
5. Press the right AUTO button until all DTC's are displayed and recorded.
6. To erase all codes must be read out. Press both AUTO buttons simultaneously for more than 2 seconds. "d" will be displayed on the left and "FF" is displayed on the right. The erase can be canceled by pressing the AUTO button.
7. Reset temperature selector to normal setting.
8. IGNITION : OFF to end the test program.

FAULT CODES - 140 Chassis from 9/95	
DTC Readout	**Description**
026	CAN Bus Communication
226	In-Car Air Temperature Sensor (B10/4)
227	Outside Air Temperature Sensor (B10/5) to 1996, (B14) as of 1997
228	Left Heater Core Temperature Sensor (B10/2)
229	Right Heater Core Temperature Sensor (B10/3)
230	Evaporator Temperature Sensor (B10/6)
231	Engine Coolant Temperature Sensor (B11/4) DFI or IFI models Right Engine Coolant Temperature Sensor (B11/10) to 1996
232	Refrigerant Pressure Sensor (B12)
233	Refrigerant Temperature Sensor (B12/1)
234	Sun Sensor (B32)
235	Emissions (Refrigerant Leak) Sensor (B31)
241	Refrigerant Level
416	Coolant Circulation Pump (A31m1)
417	Left Duovalve (Water Valve) (Y21y1)
418	Right Duovalve (Water Valve) (Y21y2)
419	A/C Compressor Electromagnetic Clutch (A9k1)
420	Closed (Idle) Throttle Speed Increase
421	Pulse Module (N65)
422	Serial Interface Connection (K1) to Instrument Cluster (IC)
423	Switchover Valve Block (Y11)
424	Activated Charcoal Filter Actuator (A32m2) : OPEN
425	Activated Charcoal Filter Actuator (A32m2) : CLOSE
432	Maximum Heat

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 140 Chassis from 9/95	
DTC Readout	**Description**
459	Serial Interface Connection (K2) to Instrument Cluster (IC)
460	LED - Center Air Outlet "Warm"
461	LED - Center Air Outlet "Cold"
462	Wide Open Throttle (WOT) Position Signal - Diesel Engine Only

A/C SELF DIAGNOSTIC SYSTEMS

202 Chassis to 8/95

READING ACTUAL VALUES

1. IGNITION : Position 1
2. Set temperature selection to 72 degrees F (Press v and ^ simultaneously).
3. Press the AUTO button.
4. Press the REST button for more than 5 seconds.
5. The display will alternately show the number "01" and the in-car temperature or "LO" if there is an open circuit or "HI" if there is a short circuit.
6. Press the "Top Air Outlet" button to increase the component tested and the "Bottom Air Outlet" button to decrease the component number tested.
7. Press the REST button to end the test program.

COMPONENT UNDER TEST

Number	Component
01	In-Car Temperature Sensor with Aspirator Blower (B10/4)
02	Outside Temperature Sensor (B10/5)
03	Heater Core Temperature Sensor (B10/1)
05	Evaporator Temperature Sensor (B10/6)
06	Engine Coolant Temperature (ECT) Sensor (A/C) (B10/8)
07	Refrigerant Pressure in Bar
08	Blower Control Voltage
09	Software Status of A/C Pushbutton Control Module
15	Selected In-Car Temperature
20	Version Code
21	Engine Speed in RPM
22	A/C Compressor Speed in RPM
23	Vehicle Speed in km/h
50	Not Used
51	Number of Current Poly-V Belt Slip Recognitions
52	Number of Stored Poly-V Belt Slip Recognitions

FAULT DIAGNOSIS

1 IGNITION : Position 1
2 Press the V button until "LO" appears on the display.
3 Within 20 seconds press the REST and BLOWER buttons simultaneously for more then 2 seconds.
4 The LED in the RECIRCULATE button flashes and "dI R" appears on the display
5 Press the AUTO button until all DTC's are displayed and recorded. Continuous faults are displayed first. if no faults are stored, "En d" is displayed. Press AUTO again to retrieve intermittent faults. If no intermittent faults are stored, "En d" is displayed.

A/C SELF DIAGNOSTIC SYSTEMS

6 Press the AUTO button until "dE L" is displayed. To erase codes press both V and ^ simultaneously for at least 5 seconds. The display will show "---"
7 IGNITION : OFF to end the test program.

FAULT CODES - 202 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
01	No ERROR Stored	No Faults	
02	A/C Pushbutton Control Module (N22).	Power failure or damaged computer	
03	In-Car Temperature Sensor with Aspirator Blower (B10/4)	Short circuit	CONTINUOUS
04	In Car Temperature Sensor with Aspirator Blower (B10/4)	Short circuit	INTERMITTENT
05	In-Car Temperature Sensor with Aspirator Blower (B10/4)	Short or Open circuit	CONTINUOUS
06	In-Car Temperature Sensor with Aspirator Blower (B10/4)	Short or Open circuit	INTERMITTENT
07	Outside Air Temperature Sensor (B10/5)	Short circuit	CONTINUOUS
08	Outside Air Temperature Sensor (B10/5)	Short circuit	INTERMITTENT
09	Outside air Temperature Sensor (B10/5)	Short or Open circuit	CONTINUOUS
10	Outside air Temperature Sensor (B10/5)	Short or Open circuit	INTERMITTENT
11	Heater Core Temperature Sensor (B10/1)	Short circuit	CONTINUOUS
12	Heater Core Temperature Sensor (B10/1)	Short circuit	INTERMITTENT
13	Heater Core Temperature Sensor (B10/1)	Short or Open circuit	CONTINUOUS
14	Heater Core Temperature Sensor (B10/1)	Short or Open circuit	INTERMITTENT
19	Evaporator Temperature Sensor (B10/6)	Short circuit	CONTINUOUS
20	Evaporator Temperature Sensor (B10/6)	Short circuit	INTERMITTENT
21	Evaporator Temperature Sensor (B10/6)	Short or Open circuit	CONTINUOUS
22	Evaporator Temperature Sensor (B10/6)	Short or Open circuit	INTERMITTENT
23	Engine Coolant Temperature Sensor (ETC) (B10/8)	Short circuit	CONTINUOUS
24	Engine Coolant Temperature Sensor (ETC) (B10/8)	Short circuit	INTERMITTENT
25	Engine Coolant Temperature Sensor (ETC) (B10/8)	Short or Open circuit	CONTINUOUS
26	Engine Coolant Temperature Sensor (ETC) (B10/8)	Short or Open circuit	INTERMITTENT
27	Refrigerant Pressure Sensor (B12)	Short circuit	CONTINUOUS
28	Refrigerant Pressure Sensor (B12)	Short circuit	INTERMITTENT

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 202 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
29	Refrigerant Pressure Sensor (B12)	Short or Open circuit	CONTINUOUS
30	Refrigerant Pressure Sensor (B12)	Short or Open circuit	INTERMITTENT
31	A/C Compressor RPM Sensor (A9l1)	Bad Sensor	
32	Poly-V Belt Slip Recognition	Slipping Belt	
47	Auxiliary Coolant Pump (M13)	Unknown	
48	Auxiliary Coolant Pump (M13)	Short circuit	INTERMITTENT
49	Auxiliary Coolant Pump (M13)	Short or Open circuit	CONTINUOUS
50	Auxiliary Coolant Pump (M13)	Short or Open circuit	INTERMITTENT
51	Duovalve (Water Valve) (Y21)	Short circuit	CONTINUOUS
52	Duovalve (Water Valve) (Y21)	Short circuit	INTERMITTENT
53	Duovalve (Water Valve) (Y21)	Short or Open circuit	CONTINUOUS
54	Duovalve (Water Valve) (Y21)	Short or Open circuit	INTERMITTENT
59	A/C Compressor Electromagnetic Clutch (A9k1)	Short circuit	CONTINUOUS
60	A/C Compressor Electromagnetic Clutch (A9k1)	Short circuit	INTERMITTENT
61	A/C Compressor Electromagnetic Clutch (A9k1)	Short or Open circuit	CONTINUOUS
62	A/C Compressor Electromagnetic Clutch (A9k1)	Short or Open circuit	INTERMITTENT
63	Activation of Auxiliary Fan Stage 1	Short circuit	CONTINUOUS
64	Activation of Auxiliary Fan Stage 1	Short circuit	INTERMITTENT
65	Activation of Auxiliary Fan Stage 1	Short or Open circuit	CONTINUOUS
66	Activation of Auxiliary Fan Stage 1	Short or Open circuit	INTERMITTENT
67	Activation of Auxiliary Fan Stage 2	Short circuit	CONTINUOUS
68	Activation of Auxiliary Fan Stage 2	Short circuit	INTERMITTENT
69	Activation of Auxiliary Fan Stage 2	Short or Open circuit	CONTINUOUS
70	Activation of Auxiliary Fan Stage 2	Short or Open circuit	INTERMITTENT
71	Closed (Idle) Throttle Speed Increase	Short or Open circuit	CONTINUOUS
72	Closed (Idle) Throttle Speed Increase	Short or Open circuit	INTERMITTENT
73	Closed (Idle) Throttle Speed Increase	Short circuit	CONTINUOUS
74	Closed (Idle) Throttle Speed Increase	Short circuit	INTERMITTENT
75	Switchover Valve Block (Y11/3), Diverter Flap		CONTINUOUS

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 202 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
76	Switchover Valve Block (Y11/3), Diverter Flap		INTERMITTENT
77	Switchover Valve Block (Y11/3), Diverter Flap	Short or Open circuit	CONTINUOUS
78	Switchover Valve Block (Y11/3), Diverter Flap	Short or Open circuit	INTERMITTENT
79	Switchover Valve Block (Y11/3), Tempering Flap		CONTINUOUS
80	Switchover Valve Block (Y11/3), Tempering Flap		INTERMITTENT
81	Switchover Valve Block (Y11/3), Tempering Flap	Short or Open circuit	CONTINUOUS
82	Switchover Valve Block (Y11/3), Tempering Flap	Short or Open circuit	INTERMITTENT
83	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap Long Stroke (80%)		CONTINUOUS
84	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap Long Stroke (80%)		INTERMITTENT
85	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap Long Stroke (80%)	Short or Open circuit	CONTINUOUS
86	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap	Short or Open circuit	INTERMITTENT
87	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap Short Stroke (20%)		CONTINUOUS
88	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap Short Stroke (20%)		INTERMITTENT
89	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap Short Stroke (20%)	Short or Open circuit	CONTINUOUS
90	Switchover Valve Block (Y11/3), Fresh/Recirculating Air Flap Short Stroke (20%)	Short or Open circuit	INTERMITTENT
91	Switchover Valve Block (Y11/3), Defroster Flap Long Stroke (80%)		CONTINUOUS
92	Switchover Valve Block (Y11/3), Defroster Flap Long Stroke (80%)		INTERMITTENT

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 202 Chassis to 8/95			
DTC Readout	**Description**	**Cause**	**Fault Type**
93	Switchover Valve Block (Y11/3), Defroster Flap Long Stroke (80%)	Short or Open circuit	CONTINUOUS
94	Switchover Valve Block (Y11/3), Defroster Flap Long Stroke (80%)	Short or Open circuit	INTERMITTENT
95	Switchover Valve Block (Y11/3), Defroster Flap Short Stroke (20%)		CONTINUOUS
96	Switchover Valve Block (Y11/3), Defroster Flap Short Stroke (20%)		INTERMITTENT
97	Switchover Valve Block (Y11/3), Defroster Flap Short Stroke (20%)	Short or Open circuit	CONTINUOUS
98	Switchover Valve Block (Y11/3), Defroster Flap Short Stroke (20%)	Short or Open circuit	INTERMITTENT
99	Switchover Valve Block (Y11/3), Footwell Flap Long Stroke (80%)		CONTINUOUS
100	Switchover Valve Block (Y11/3), Footwell Flap Long Stroke (80%)		INTERMITTENT
101	Switchover Valve Block (Y11/3), Footwell Flap Long Stroke (80%)	Short or Open circuit	CONTINUOUS
102	Switchover Valve Block (Y11/3), Footwell Flap Long Stroke (80%)	Short or Open circuit	INTERMITTENT
103	Switchover Valve Block (Y11/3), Footwell Flap Short Stroke (20%)		CONTINUOUS
104	Switchover Valve Block (Y11/3), Footwell Flap Short Stroke (20%)		INTERMITTENT
105	Switchover Valve Block (Y11/3), Footwell Flap Short Stroke (20%)	Short or Open circuit	CONTINUOUS
106	Switchover Valve Block (Y11/3), Footwell Flap Short Stroke (20%)	Short or Open circuit	INTERMITTENT

A/C SELF DIAGNOSTIC SYSTEMS

202 Chassis from 9/95

READING ACTUAL VALUES

1. IGNITION : Position 1
2. Set temperature selector to 72 degrees F.
3. Press the REST button for more than 6 seconds.
4. The left display will alternately show the number "01" and the in-car temperature.
5. Press the FAN button and the next component number and its value will be displayed.
6. Press the REST button to end the test program.

COMPONENT UNDER TEST

Number	Component
01	In-Car Temperature Sensor with Aspirator Blower (B10/4)
02	Outside Temperature Sensor (B14)
03	Heater Core Temperature Sensor (B10/1)
05	Evaporator Temperature Sensor (B10/6)
06	Engine Coolant Temperature Sensor (ECT) (B11/4)
07	Refrigerant Pressure in Bar
08	Refrigerant Temperature Sensor (B12/1)
09	Not Used
10	Blower Control Voltage
20	Control Current for Auxiliary Fan exp. : 7 = 7 mA
21	Engine RPM. example 00..99 (x100) = 9900
22	Vehicle Speed
23	PIN 58D exp. 99.0 = 99% of Battery Voltage
24	Battery Voltage : 12.8 = 12,8 Volt
40	A/C Controller Software Version Coding
41	A/C Controller Hardware Version
42	Variant code 1
43	Variant code 2
50	Not Used
51	Not Used
52	Not Used
54	ON/OFF A/C Compressor emergency off signal from engine control module.

A/C SELF DIAGNOSTIC SYSTEMS

FAULT DIAGNOSIS

1. IGNITION : Position 1
2. Temperature selector wheel : "LO"
3. Within 20 seconds press the REST and DEFROST buttons simultaneously for more than 5 seconds.
4. The LED in the RECIRCULATE button flashes and "dI A" appears on the display.
5. Press the AUTO button until all DTC's are displayed and recorded.
6. The current faults are displayed first, then the intermittent faults. "END"' is displayed when all codes have been displayed.
7. To erase codes press v and ^ simultaneously for more than 5 seconds. The display will then show "---". Press AUTO to cancel the erase.
8. IGNITION : OFF to end the test program.

FAULT CODES - 202 Chassis from 9/95	
DTC Readout	**Description**
026	CAN Bus Communication
226	In-Car Air Temperature Sensor (B10/4)
227	Outside Air Temperature Sensor (B14)
228	Heater Core Temperature Sensor (B10/1)
230	Evaporator Temperature Sensor (B10/6)
231	Engine Coolant Temperature Sensor (B11/4)
232	Refrigerant Pressure Sensor (B12)
233	Refrigerant Temperature Sensor (B12/1)
241	Refrigerant Level
416	Coolant Circulation Pump (A31m1)
417	Left Duovalve (Water Valve) (Y21y1)
418	Right Duovalve (Water Valve) (Y21y2)
419	A/C Compressor Electromagnetic Clutch (A9k1)
420	Closed (Idle) Throttle Speed Increase
421	Pulse Module (N65)
422	Serial Interface Connection (K1) to Instrument Cluster (IC)
451	Diverter Flap (Y11/3)
452	Blend Air Flap (Y11/3)
453	Fresh/Recirculated Air Flap (Y11/3) Long Stroke
454	Fresh/Recirculated Air Flap (Y11/3) Short Stroke
455	Defroster Outlet Flap (Y11/3) Long Stroke
456	Defroster Outlet Flap (Y11/3) Short Stroke
457	Footwell Flap (Y11/3) Long Stroke
458	Footwell Flap (Y11/3) Short Stroke
459	Serial Interface Connection (K2) to Instrument Cluster (IC)

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 202 Chassis from 9/95	
DTC Readout	**Description**
462	Wide Open Throttle (WOT) Position Signal - Diesel Engine Only

A/C SELF DIAGNOSTIC SYSTEMS

210 Chassis from 9/95

READING ACTUAL VALUES

1. IGNITION : Position 1
2. Press the AUTO button
3. Set both temperature selectors to 72 degrees F.
4. Press the REST button for more than 5 seconds.
5. The left display will alternately show the number "1" and the in-car temperature.
6. Press the AUTO button and the next component number and its value will be displayed.
7. Press the REST button to end the test program.

COMPONENT UNDER TEST

Number	Component
01	In-Car Temperature Sensor with Aspirator Blower (B10/4)
02	Outside Temperature Sensor (B14)
03	Left Heater Core Temperature Sensor (B10/1)
04	Right Heater Core Temperature Sensor (B10/1)
05	Evaporator Temperature Sensor (B10/6)
06	Engine Coolant Temperature (ECT) Sensor (A/C) (B1/4)
07	Refrigerant Pressure in Bar
08	Refrigerant Temperature Sensor (B12/1)
10	Blower Control Voltage
11	Emissions (Refrigerant Leak) Sensor (B31)
12	Sun (Excessive Heat) Sensor (B32)
20	Control Current for Auxiliary Fan exp. : 7 = 7 mA
21	Engine RPM. example 00..99 (x100) = 9900
22	Vehicle Speed
23	PIN 58D exp. 99.0 = 99% of Battery Voltage
24	Battery Voltage : 12.8 = 12,8 Volt
40	Software Version Encoded
41	Hardware Version

A/C SELF DIAGNOSTIC SYSTEMS

FAULT DIAGNOSIS

1. IGNITION : Position 1
2. Left Temperature selector wheel : HI
   Right Temperature selector wheel : LO
3. Within 20 seconds press the REST and EC buttons simultaneously for more than 5 seconds.
4. The LED in the RECIRCULATE button flashes and "dI R" appears on the display
5. Press the right AUTO button until all DTC's are displayed and recorded.
6. To erase all codes must be read out. Press both AUTO buttons simultaneously for more than 2 seconds. "d" will be displayed on the left and "FF" is displayed on the right. The erase can be canceled by pressing the AUTO.
7. Reset temperature selector to normal setting.
8. IGNITION : OFF to end the test program.

FAULT CODES - 210 Chassis from 9/95	
DTC Readout	**Description**
026	CAN - Communication
226	In-Car Air Temperature Sensor (B10/4)
227	Outside Air Temperature Sensor (B14)
228	Left Heater Core Temperature Sensor (B10/1)
229	Right Heater Core Temperature Sensor (B10/1)
230	Evaporator Temperature Sensor (B10/6)
231	Engine Coolant Temperature Sensor (B10/8)
232	Refrigerant Pressure Sensor (B12)
233	Refrigerant Temperature Sensor (B12/1)
234	Sun Sensor (B32)
235	Emissions (Refrigerant Leak) Sensor (B31)
241	Refrigerant Level
416	Coolant Circulation Pump (M13)
417	Left Duovalve (Water Valve) (Y21y1)
418	Right Duovalve (Water Valve) (Y21y2)
419	A/C Compressor Electromagnetic Clutch (A9k1)
420	Closed (Idle) Throttle Speed Increase
421	Pulse Module
422	Serial Interface Connection (K1) to Instrument Cluster (IC)
423	Switchover Valve Block (Y11)
424	Activated Charcoal Filter Actuator (A32m2) : OPEN
425	Activated Charcoal Filter Actuator (A32m2) : CLOSE
432	Maximum Heat
459	Serial Interface Connection (K2) to Instrument Cluster (IC)

A/C SELF DIAGNOSTIC SYSTEMS

FAULT CODES - 210 Chassis from 9/95	
DTC Readout	**Description**
462	Wide Open Throttle (WOT) Position Signal - Diesel Engine Only

Supplemental Restraint System (SRS)

Models	Model Years
107 126 201 140	1988-1993

Connect wires of Scanner as follows

Scanner	Data Link Connector 8-pin
Yellow	Socket 6
Black	Socket 1
Red	Battery (+)

Scanner	Data link connector 38-pin
Yellow	Socket 30
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	SRS Control unit
3	SRS - Driver air bag
4	Front passenger Airbag
5	Driver seat beat buckle
6	Front passenger seat belt buckle
7	Airbag resistor, Front passenger
8	Circuit 15R, Voltage supply
9	Waning lamp faulty
10	Control unit was activated

Supplemental Restraint System (SRS)

Models	Model Years
124 129	1990-93

Connect wires of Scanner as follows (124, 129.061/066)

Scanner	Data Link Connector 8 or 16-pin
Yellow	Socket 6
Black	Socket 1
Red	Battery (+)

Connect wires of Scanner as follows (129.067/076)

Scanner	Data link connector 38-pin
Yellow	Socket 30
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	SRS Control unit self test failure
3	Driver Airbag squib
4	Front passenger Airbag squib
5	Airbag/ETR, Driver seat beat buckle switch
6	Front passenger seat belt buckle switch (ETR)
7	Front passenger Airbag resistor
8	Voltage supply interrupted
9	SRS Warning Lamp (with flashing SRS warning lamp Impulse counter scan tool button held too little time to read out the DTC memory or too long to erase DTC codes. Reread codes.)
10	SRS Control unit activated.

Digital Fault Code Systems ⊢ 2 - ⊢ 12

⊢ 2	**SRS** - Chassis 124 129 140 202 210 (1-2 Airbags) 1994-95)
⊢ 3	**SRS** - Chassis 129 140 202 210 (4 Airbags) 1996-98
⊢ 4	**LH-SFI Current Faults** Engines 104 (1992-93) 119 (1992-95) 120 (1990-95)
⊢ 5	**LH-SFI Stored or Permanent Faults** Engines 104 (1992-93) 119 (1992-95) 120 (1990-95)
⊢ 6	**HFM-SFI / PMS Current Faults** Engines 104 (1993-96) 111 (1994-96)
⊢ 7	**HFM-SFI / PMS Stored or Permanent Faults** Engines 104 (1993-96) 111 (1994-96)
⊢ 8	**DM Current Faults** Engines 104, 119 120
⊢ 9	**DM Stored or Permanent Faults** Engines 104 119 120
⊢ 10	**DM Registered Faults** Engines 104 119 120
⊢ 11	**ME1 Current Faults** - Engines 119 (1996-98) 120 (1996-98)
⊢ 12	**ME1 Stored or Permanent Faults** Engines 119 (1996-98) 120 (1996-98)

Supplemental Restraint System (SRS) BAE, ZAE System

Models	Model Years
129 140 124	1994-95
202 210	From beginning of manufacture -1995

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 30
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	SRS Control unit
2	SRS Driver air bag squib
3	Left front ETR squib
4	Right front ETR squib
5	Model 140R12/8Front passenger airbag squib 1
17	Low volts, Voltage supply circuit 15R
19	SRS indicator lamp. failure
20	Front passenger seat occupation signal (currently not used)
24	Driver seat belt buckle switch (Airbag/ETR)
25	Front passenger seat belt buckle switch (ETR)
73	Squib short circuit

Supplemental Restraint System (SRS) with side Airbags

Models	Model Years
129 (R) 140 (S) 202 (C) 210 (E)	1996-98

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 30
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	SRS-Control unit
2	SRS indicator lamp. failure
3	low volts, Voltage supply circuit 15R
4	Driver side air bag squib circuit
5	Driver side seat belt squib circuit
6	Front passenger side seat belt squib circuit
7	Front passenger side air bag squib circuit
8	Driver side front door air bag squib circuit
9	Front passenger side door air bag squib circuit
16	Driver side seat belt buckle switch
17	Front passenger side seat belt buckle switch
18	Driver side door air bag detect sensor circuit
19	Driver side door air bag detect sensor failure
20	Driver side door air bag detect sensor failure
21	Passenger side door air bag detect sensor circuit
22	Passenger side door air bag detect sensor failure
23	Passenger side door air bag detect sensor failure
24	Driver side seat occupation signal
25	Front passenger side seat occupation signal
26	Coded version not correct with control unit
32	Driver side door air bag detect sensor signal
33	Passenger side door air bag detect sensor signal

LH Sequential Multiport Fuel Injection System (LH-SFI)

Engines	Model Years
104 119 120	1991-193

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 8
Black	Socket 1
Red	Socket 16

Scanner	Data Link Connector 38-pin
Yellow	Socket 4
Black	Socket 1
Red	Socket 3

(These fault codes numbers are only for the CS1000 Code Scanner. They are different from those found in the Mercedes Benz original Diagnostic Manual fault code tables.)

⊢ 4 LH-SFI "Current" Fault Codes (These codes do not turn on the MIL.)

DTC Readout	Possible Cause of Failure
001	Injector, cylinder 1 circuit short to positive
002	Injector, cylinder 5 circuit short to positive
003	Injector, cylinder 4 circuit short to positive
004	Injector, cylinder 8 circuit short to positive
005	Injector, cylinder 6 circuit short to positive
006	Injector, cylinder 3 circuit short to positive
007	Injector, cylinder 7 circuit short to positive
008	Injector, cylinder 2 circuit short to positive
009	Injector, cylinder 1 open circuit or short to ground
010	Injector, cylinder 5 open circuit or short to ground
011	Injector, cylinder 4 open circuit or short to ground
012	Injector, cylinder 8 open circuit or short to ground
013	Injector, cylinder 6 open circuit or short to ground
014	Injector, cylinder 3 open circuit or short to ground
015	Injector, cylinder 7 open circuit or short to ground

DTC Readout	Possible Cause of Failure
016	Injector, cylinder 2 open circuit or short to ground
017	HFM sensor Voltage too high or too low, may open circuit
018	Engine coolant temperature sensor short or open circuit
019	Engine coolant temperature sensor short or open circuit
020	Engine coolant temperature sensor signal questionable
021	Intake air temperature sensor short or open circuit
022	Exhaust temperature sensor short or open circuit (Japan version only)
023	CO potentiometer open circuit (non KAT)
024	LH-SFI control unit coding plug open circuit (not USA version)
025	Starter signal missing (circuit 50), may short or open circuit
026	Idle speed recognition from Cruise control/Electronic accelerator (CC/EA), circuit short to ground
027	Not used
028	O2S 1 signal, short or open circuit
029	Not used
030	Not used
031	O2S 2 signal, short or open circuit
032	Not used
033	CAN communication problem, No communication from LH control unit
034	CAN communication problem, No communication from ASR control unit
035	CAN communication problem, No communication from LH control unit
036	CAN communication problem, No communication from LH control unit
037	CAN communication problem, No communication from EZL/AKR ignition control unit
038	CAN communication problem, No communication from EZL/AKR ignition control unit
038	CAN communication problem, No communication from Cruise control/Electronic accelerator
040	Not used
041	Air injection system short or open circuit
042	Fuel purge switchover valve open or short circuit
043	Transmission switchover valve, circuit open or short
044	EGR switchover valve, circuit open or short
045	Camshaft timing adjust solenoid, circuit open or short
046	Camshaft timing Adjust solenoid, circuit open or short
047	First gear start relay, circuit open or short
048	Not used

DTC Readout	Possible Cause of Failure
049	Air injection system circuit short or open
050	Fuel purge switchover valve circuit short or open
051	Transmission switchover valve relay or solenoid, circuit short or open
052	EGR switchover valve circuit short or open
053	camshaft timing Adjust solenoid circuit short or open
054	camshaft timing Adjust solenoid circuit short or open
055	First gear start relay circuit short or open
056	Not used

5 LH-SFI "Stored" Fault codes (These codes turn on the MIL.)

DTC Readout	Possible Cause of Failure
001	Not used
002	HFM sensor Voltage too high or too low, may open circuit
003	Engine coolant temperature sensor short or open circuit
004	Engine coolant temperature sensor short or open circuit
005	Intake air temperature sensor short or open circuit
006	Japan only Exhaust temperature sensor, circuit short or open
007	CO potentiometer open circuit (non KAT)
008	LH-SFI control unit coding plug open circuit (not USA version)
009	Starter signal circuit 50 missing, circuit short or open
010	Starter signal missing (circuit 50), may short or open circuit
011	O2S 1 signal, short or open circuit
012	CAN communication problem, No communication from LH control unit
013	CAN communication problem, No communication from Cruise control/Electronic accelerator
014	Camshaft position sensor circuit short or open
015	Air injection system circuit short or open
016	Air mass sensor, hot-wire burn-off control circuit short or open
017	EGR switchover valve, circuit open or short
018	CAN communication problem. No communication from EZL/AKR ignition control unit
019	CAN communication problem. No communication from LH control unit
020	Fuel purge switchover valve circuit short or open
021	camshaft timing Adjust solenoid circuit short or open
022	camshaft timing Adjust solenoid circuit short or open
023	Transmission switchover valve circuit short or open
024	Fuel injectors circuit short or open
025	First gear start relay circuit short or open

HFM Sequential Multiport Fuel Injection System (HFM-SFI)

Engines	Model Years
111 (4 cylinder, 2.2/2.3L engine)	1994-97
104 (6 cylinder, 2.8/3.2L engine)	1994-97

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 8
Black	Socket 1
Red	Socket 16

Scanner	Data Link Connector 38-pin
Yellow	Socket 4
Black	Socket 1
Red	Socket 3

(Code Scanner will display the fault code numbers listed under OB15, Mercedes factory numbers are listed under MB.)

HFM-SFI ⊢ 6 for Current and ⊢ 7 Stored Fault codes

OB15	MB	Description
000		No fault found
001	(002)	Engine coolant temperature sensor, short circuit
002	(003)	Engine coolant temperature sensor, open circuit
003	(004)	Engine coolant temperature sensor signal incorrect
004	(006)	Intake air temperature sensor, short circuit
005	(007)	Intake air temperature sensor, open circuit
006	(009)	Hot film air mass sensor signal too high
007	(010)	Hot film air mass sensor, open circuit
008	(011)	Engine idle speed contact Throttle valve position too large
009		Not used
010	(012)	Engine idle speed contact air mass too large
011	(113)	HFM-SFI control unit not coded
012	(014)	Throttle valve potentiometer actual value too high
013	(015)	Throttle valve potentiometer actual value too low
014	(017)	Throttle valve potentiometer drive value implausibly high
015	(018)	Throttle valve potentiometer drive value implausibly low
016	(020)	ISC (Idle speed control) at lower control stop area, malfunction

OB15	MB	Description
017	(021)	ISC (Idle speed control) at upper control stop area, malfunction
018	(022)	CC,EFP actuator signals in limp home mode (emergency mode)
019	(023)	O2 sensor (before/upstream of Cat. Conv.), voltage too large
020	(024)	O2 sensor (before/upstream of Cat. Conv.), open circuit
021	(025)	O2 sensor (before/upstream of Cat. Conv.), signal incorrect
022	(026)	O2 sensor (after/downstream of Cat. Conv.), voltage too large
023	(027)	O2 sensor (after/downstream of Cat. Conv.), open circuit
024	(028)	O2 sensor (after/downstream of Cat. Conv.), signal incorrect
025	(029)	O2 sensor heater (before/upstream of Cat. Conv.), heater current (amp) too small
026	(030)	O2 sensor heater (before/upstream of Cat. Conv.), heater current (amp) too large
027	(031)	O2 sensor heater (before/upstream of Cat. Conv.), heater current, short circuit
028	(032)	O2 sensor heater (after/downstream of Cat. Conv.), heating current (amp) too small
029	(033)	O2 sensor heater (after/downstream of Cat. Conv.), heating current (amp) too large
030	(034)	O2 sensor heater (after/downstream of Cat. Conv.), heating current, short circuit
031	(035)	Fuel adaptation (lambda) control, mixture too lean (rich stop) (Intake air leak, fuel injectors, diaphragm pressure regulator)
032	(036)	Fuel adaptation (lambda) control, mixture too rich (lean stop) (Intake air leak, fuel injectors, diaphragm pressure regulator)
033	(037)	Injection valve cylinder 1, short to positive
034	(038)	Injection valve cylinder 1, open circuit or short to ground
035	(039)	Injection valve cylinder 2, short to positive
036	(040)	Injection valve cylinder 2, open circuit or short to ground
037	(041)	Injection valve cylinder 3, short to positive
038	(042)	Injection valve cylinder 3, open circuit or short to ground
039	(043)	Injection valve cylinder 4, short to positive
040	(044)	Injection valve cylinder 4, open circuit or short to ground
041	(045)	Injection valve cylinder 5, short to positive
042	(046)	Injection valve cylinder 5, open circuit or short to ground
043	(047)	Injection valve cylinder 6, short to positive
044	(048)	Injection valve cylinder 6, open circuit or short to ground
045	(049)	Self-adjustment too rich at Idle (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
046	(050)	Self-adjustment too lean at Idle (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
047	(051)	Self-adjustment too rich at Lower part load (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)

OB15	MB	Description
048	(052)	Self-adjustment too lean at Lower part load (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
049	(053)	Self-adjustment too rich at Upper part load (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
050	(054)	Self-adjustment too lean at Upper part load (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
051	(061)	Ignition system output stage 3, Cylinder 1 misfires
052	(062)	Ignition system output stage 3, Cylinder 6 misfires
053	(063)	Ignition system output stage 3, Current value not reached
054	(055)	Ignition system output stage 1, Cylinder 2 misfires
055	(056)	Ignition system output stage 1, Cylinder 5 misfires
056	(057)	Ignition system output stage 1, Current value not reached
057	(058)	Ignition system output stage 2, Cylinder 3 misfires
058	(059)	Ignition system output stage 2, Cylinder 4 misfires
059	(060)	Ignition system output stage 2, Current value not reached
060	(064)	Crankshaft signal incorrect
061	(065)	Crankshaft signal Magnet missing or Number of teeth incorrect
062	(066)	Crankshaft signal Speed incorrect, too high
063	(067)	Camshaft signal incorrect/not recognized
064	(068)	HFM circuit/trimming plug short to ground
065	(069)	HFM circuit/trimming plug open circuit or short to positive
066	(070)	TN speed signal (rpm) Output short to ground
067	(071)	TN speed signal (rpm) Output short to positive
068	(072)	Vehicle speed signal not recognized, short circuit
069	(073)	Vehicle speed signal implausibly high, short circuit
070	(074)	PSV relay K3/1 circuit short to positive
071		Not used
072	(076)	Fuel pump relay open circuit or short circuit
073		Not used
074	(077)	CO potentiometer Input short to positive
075	(079)	Knock sensor 1 signal open circuit
076	(080)	Knock sensor 2 signal open circuit
077	(081)	Ignition timing max retardation reached at least one cylinder
078	(082)	Ignition angle deviation between the individual cylinders too high
079	(083)	Knock control analysis, HFM control unit defective
080	(084)	Short-term self-adjustment Idle/Part-load fault
081	(085)	Air pump relay-module/switch-valve output, open circuit or short circuit

OB15	MB	Description
082		Not used
083		Not used
084	(086)	Fuel purge switch-valve, open circuit/short circuit
085	(087)	Fuel purge switch-valve, short to positive
086	(088)	Transmission shifting delay/smooth switch-valve, open circuit or short circuit
087		Not used
088		Not used
089	(089)	Camshaft timing adjust actuator circuit short to positive
090	(090)	Camshaft timing adjust actuator open circuit or short to ground
091	(091)	EGR switch-valve short to positive
092	(092)	EGR switch-valve open circuit or short to ground
093	(093)	Transmission overload protection switch short to ground
094	(094)	Transmission overload protection switch, circuit short or open
095	(095)	Transmission overload protection switch, circuit short or open
096	(096)	Transmission overload protection switch signal implausible
097	(097)	CAN problem Transmission communication from HFM control system faulty
098	(098)	CAN problem No data reception from ASR
099	(116)	CAN problem No data reception from IRCL. (if equip with IRCL) Voltage supply at Circuit 87M, low voltage or implausible (Starting 06/93)
100		Not used
101	(099)	CAN problem No data reception from EFP,TPM
102	(100)	CAN problem No data reception from Diagnosis Module
103		Not used
104	(117)	Attempt to start with IRCL locked
105	(101)	No starter signal (Terminal 50), open or short circuit
106	(102)	Thermocouple CAT B16/6 Temperature too high
107	(103)	Thermocouple CAT B16/6 Temperature too low
108	(104)	Fuel safety cut-off settled
109		Not used
110	(105)	Resonance intake manifold switchover valve, short to positive
111	(106)	Resonance intake manifold switchover valve, open circuit/short to ground
112	(107)	Ignition dwell angle control output stage, short to ground
113	(114)	HFM control unit identification illogical
114	(108)	Oxygen sensor heater (after/downstream of Cat. Conv.), short to positive
115	(109)	Oxygen sensor heater (after/downstream of Cat. Conv.), open circuit or short to ground

OB15	MB	Description
116	(115)	HFM-SFI control unit N3/4 coding bytes illogical
117		Not used
118	(110)	Voltage supply to HFM-SFI control unit, incorrect
119	(111)	Voltage supply at HFM-SFI control unit, voltage too low
120	(112)	HFM control unit faulty
121	(005)	Coolant temperature sensor, Loose contact
122	(008)	Intake air temperature sensor, Loose contact
123	(013)	Idle speed contact, Loose contact
124	(016)	Potentiometer throttle valve, Loose contact
125	(019)	Potentiometer throttle valve drive, Loose contact
126	(078)	CO potentiometer R33 Loose contact
127		Not used
128		Not used

PMS Fuel Injection System

Engines	Model Years
111 (4 cylinders, 1.8/2.0L engine)	1994-97

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 8
Black	Socket 1
Red	Socket 16

Scanner	Data Link Connector 38-pin
Yellow	Socket 4
Black	Socket 1
Red	Socket 3

(Code Scanner will display the fault code numbers listed under OB15, Mercedes factory numbers are listed under MB.)

PMS ⊢ 6 for "Current" and ⊢ 7 "Stored" Fault Codes

OB15	MB	Description
001	(002)	Coolant temperature sensor, short circuit
002	(003)	Coolant temperature sensor, open circuit
003	(004)	Coolant temperature sensor, incorrect
004	(006)	Intake air temperature sensor, short circuit
005	(007)	Intake air temperature sensor, open circuit
006	(009)	PMS Control unit, Intake manifold pressure implausible
007	(010)	PMS Control unit, No Intake manifold pressure
008	(011)	Idle speed contact closed signal incorrect
009	(068)	Idle speed contact open circuit
010		Not used
011		Not used
012	(013)	Potentiometer throttle valve, value too high
013	(014)	Potentiometer throttle valve, value too low
014	(016)	Potentiometer throttle valve drive value too high/incorrect
015	(017)	Potentiometer throttle valve drive value too low/incorrect
016	(019)	Idle speed control at lower control stop area, malfunction
017	(020)	Idle speed control at upper control stop area, malfunction
018	(021)	Idle speed control in limp home-mode (emergency operation)

OB15	MB	Description
019	(022)	O2 sensor voltage too large
020	(023)	O2 sensor, open circuit
021	(024)	O2 sensor signal illogical
022	(069)	Exhaust flap short to positive
023	(070)	Exhaust flap open circuit or short to ground
024		Not used
025	(025)	O2 sensor heater current (amps) too small
026	(026)	O2 sensor heater current (amps) too large
027	(027)	O2 sensor heater, short circuit
028		Not used
029		Not used
030		Not used
031	(028)	Fuel adaptation (lambda) control mixture too lean (Intake air leak, fuel injectors, diaphragm pressure regulator)
032	(029)	Fuel adaptation (lambda) control mixture too rich (Intake air leak, fuel injectors, diaphragm pressure regulator)
033	(030)	Injection valve cylinder 1/4 short to positive
034	(031)	Injection valve cylinder 1/4 open circuit or short to ground
035	(032)	Injection valve cylinder 2/3 short to positive
036	(033)	Injection valve cylinder 2/3 open circuit or short to ground
037	(064)	Input signal from IFZ, open circuit or short to positive
038	(065)	Input signal from IFZ, short to ground
039	(066)	IFZ system unresponsive
040	(067)	Input signal from IFZ incorrect
041		Not used
042		Not used
043		Not used
044		Not used
045	(034)	Self-adjustment too rich at Idle (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
046	(035)	Self-adjustment too lean at Idle (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
047	(036)	Self-adjustment too rich at Part load (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
048	(037)	Self-adjustment too lean at Part load (Intake air leak, fuel injectors, diaphragm pressure regulator, wear engine)
049		Not used

OB15	MB	Description
050		Not used
051	(038)	Ignition system output stage 1, short to positive
052	(039)	Ignition system output stage 1, Cylinder 1/4 misfires
053	(040)	Ignition system output stage 1, Amperage not achieved
054	(041)	Ignition system output stage 2, short to positive
055	(042)	Ignition system output stage 2, Cylinder 2/3 misfires
056	(043)	Ignition system output stage 2, Amperage not achieved
057		Not used
058		Not used
059		Not used
060	(044)	Crankshaft signal incorrect
061	(045)	Crankshaft signal Magnet missing or Numbers of teeth incorrect
062	(046)	Crankshaft signal Speed incorrect, too high
063		Not used
064	(047)	PMS circuit/trimming plug short to ground
065	(048)	PMS circuit/trimming plug open circuit or short to positive
066	(049)	TN speed signal (rpm) Output short to ground
067	(050)	TN speed signal (rpm) Output short to positive
068	(051)	Vehicle speed signal not recognized, short circuit
069	(052)	Vehicle speed signal too high, short circuit
070	(053)	PSV relay open circuit or short to positive
071	(054)	PSV relay short to ground
072	(055)	Fuel pump relay open circuit or short to positive
073	(056)	Fuel pump relay short to ground
074	(057)	CO potentiometer Input circuit short to positive
075 ~079		Not used
080	(061)	Short-term self-adjustment faulty at idle speed or part load
081	(071)	Rear axle ratio was changed
082	(072)	Rear axle ratio signal incorrect
083		Not used
084	(059)	Fuel purge switch-valve open circuit or short to positive
085	(060)	Fuel purge switch-valve short to ground
086	(062)	Transmission shifting delay/smooth switch-valve, open circuit or short circuit
087 ~092		Not used
093	(073)	Transmission protection short to ground or active too long
094		Not used

OB15	MB	Description
095		Not used
096	(074)	Transmission protection open circuit or short to positive
097 ~ 118		Not used
119	(063)	PMS control unit voltage supply too low
120		Not used
121	(005)	Coolant temperature sensor, Loose contact
122	(008)	Intake air temperature sensor, Loose contact
123	(012)	Idle speed contact, Loose contact
124	(015)	Potentiometer throttle valve, Loose contact
125	(018)	potentiometer throttle valve drive value, Loose contact
126	(058)	CO potentiometer circuit, Loose contact
127		Not used
128		Not used

Diagnostic Module (DM)

SEE ME-SFI INJECTION FOR ALL DIAGNOSTIC CODES FROM 8/96 PRODUCTION AND LATER FOR ALL MODELS.

Engines	Model Years
104 119 120	1991-96

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 3
Black	Socket 1
Red	Socket 16

Scanner	Data Link Connector 38-pin
Yellow	Socket 19
Black	Socket 1
Red	Socket 3

DM ⊢8 for "Current", ⊢9 "Stored" and ⊢10 "Registered" Fault Codes

DTC Readout	Possible Cause of Failure
000	No fault found
002	Oxygen sensor. No signal (right bank in 120)
003	Fuel adaptation (lambda control), inoperative. Engine control module (right bank in 120)
004	Air injection defective, fault from Fuel control system (right bank in 120)
005	EGR exhaust gas recirculation incorrect, fault. Engine control module (right bank in 120)
006	Idle speed control incorrect, fault from EA/CC/ISC
007	Ignition system defective, fault from Fuel/Ignition control system (right bank in 120)
008	Coolant temperature sensor signal. Open or short circuit (right bank in 120)
009	Intake air temperature sensor signal. Open or short circuit (right bank in 120)
010	Air mass sensor voltage signal too high /low. (right bank in 120)
011	Engine speed signal TN (RPM) or Engine control module (right bank in 120) defective
012	Oxygen sensor heater circuit. Open or short circuit (right bank in 120)

DTC Readout	Possible Cause of Failure
013	Camshaft position sensor (CMP) signal, fault from Fuel/Ignition control system (right bank in 120)
014	Intake manifold pressure value at start too high/low, fault from Fuel/Ignition control system (right bank in 120)
015	Wide open throttle (WOT) signal incorrect/implausible.
016	Closed throttle position (CTP) sensor signal incorrect/implausible.
017	CAN communication faulty in between control units (right bank in 120).
018	Camshaft timing adjust solenoid, open or short circuit (right bank in 120)
019	Fuel injector circuit, open or short circuit or self adaptation at limit. (right bank in 120)
020	Speed signal missing
021	Fuel purge control valve, open or short circuit (right bank in 120)
022	Camshaft position sensor (CMP) signal defective (right bank in 120)
023	Intake manifold pressure sensor signal incorrect, too high/low. (right bank in 120)
024	Crankshaft position sensor (CKP) signal incorrect or starter ring gear segment damaged.
025	Knock sensors circuit or Ignition control module defective (right bank in 120)
026	Transmission upshift delay switch over valve, open or short circuit.
027	Engine coolant temperature (ECT) sensors circuit 1 and 2 have difference values. (right bank in 120)
028	Engine coolant sensor/Operating temperature error. (right bank in 120)
034	Oxygen sensor. No signal (left bank in 120)
035	Fuel adaptation (lambda control), inoperative. Engine control module (left bank in 120)
036	Air injection defective, fault from Fuel control system (left bank in 120)
037	EGR exhaust gas recirculation incorrect, fault. Engine control module (left bank in 120)
038	Not used
039	Ignition system defective, fault from Fuel/Ignition control system (left bank in 120)
040	Coolant temperature sensor signal. Open or short circuit (left bank in 120)
041	Intake air temperature sensor signal. Open or short circuit (left bank in 120)
042	Air mass sensor voltage signal too high /low. (left bank in 120)
043	Engine speed signal TN (RPM) or Engine control module (left bank in 120) defective
044	Oxygen sensor heater circuit. Open or short circuit (left bank in 120)

DTC Readout	Possible Cause of Failure
045	Camshaft position sensor (CMP) signal, fault from Fuel/Ignition control system (left bank in 120)
046	Intake manifold pressure value at start too high/low, fault from Fuel/Ignition control system (left bank in 120)
047	Not used.
048	Not used.
049	CAN communication faulty in between control units (left bank in 120).
050	Camshaft timing adjust solenoid, open or short circuit (left bank in 120)
051	Fuel injector circuit, open or short circuit or self adaptation at limit. (left bank in 120)
052	Not used.
053	Fuel purge control valve, open or short circuit (left bank in 120)
054	Camshaft position sensor (CMP) signal defective (left bank in 120)
055	Intake manifold pressure sensor signal incorrect, too high/low. (left bank in 120)
056	Crankshaft position sensor (CKP) signal incorrect or starter ring gear segment damaged.
057	Knock sensors circuit or Ignition control module defective (left bank in 120)
058	Not used.
059	Engine coolant temperature (ECT) sensors circuit 1 and 2 have difference values. (left bank in 120)
060	Engine coolant sensor/Operating temperature error. (left bank in 120)
063	Annomalous Code (Battery Jump most likely Caused)

ME Sequential Multiport Fuel Injection System (ME-SFI)

***ME Injection includes both EA/CC/ISC and DM codes.**

Engines	Model Years
104 (6 cylinders, 2.8/3.2L engine)	8/96-
111 (4 cylinder	8/96-
112 (V6 engine, 2.4/2.8/3.2L)	8/97-
119 (V8 engine 4.2/5.0L)	8/95-1998
120 (12 cylinder engine)	8/95-1998

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 4
Black	Socket 1
Red	Socket 3

There are five digital numbers in one fault code. Code Scanner will automatically to display the one digital number first then display the four digital numbers later. For example, the fault code "00100" will display C 0 then 0 1 0 0.

ME-SFI ⊢ 11 "Current" and ⊢ 12 "Stored" Fault Codes

OB15	MB	Description
00100	P0100	Hot-film mass air flow sensor signal incorrect
00101	P0101	Mass or Volume Air flow Circuit Range/Performance Problem
00102	P0102	Mass or Volume Air Flow Circuit low Input
00103	P0103	Mass or Volume Air flow Circuit High Input
00104	P0104	Mass or Volume Air flow Circuit Intermittent
00105	P0105	Manifold Absolute Pressure (MAP) Pressure Circuit Malfunction
00106	P0106	Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance Problem
00107	P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input
00108	P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input
00109	P0109	Manifold Absolute Pressure/Barometric Pressure Circuit Intermittent
00110	P0110	Intake air temp. sensor signal in the Hot film mass air flow sensor
00111	P0111	Intake Air Temperature Circuit Range/Performance Problem
00112	P0112	Intake Air Temperature Circuit Low Input
00113	P0113	Intake Air Temperature Circuit High Input
00114	P0114	Intake Air Temperature Circuit Intermittent
00115	P0115	Engine Coolant Temperature Circuit Malfunction

OB15	MB	Description
00116	P0116	Engine Coolant Temperature Circuit Range/Performance Problem
00117	P0117	Engine Coolant Temperature Circuit Low Input
00118	P0118	Engine Coolant Temperature Circuit High Input
00119	P0119	Engine Coolant Temperature Circuit Intermittent
00120	P0120	Throttle Potentiometer Actuator Actual value, EA/CC/ISC Actuator
00121	P0121	Throttle/Pedal Position Sensor/Switch A Circuit Range/Performance Problem
00122	P0122	Throttle/Pedal Position Sensor/Switch A Circuit low Input
00123	P0123	Throttle/Pedal Position Sensor/Switch A Circuit High Input
00124	P0124	Throttle/Pedal Position Sensor/Switch A Circuit Intermittent
00125	P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control
00126	P0126	Insufficient Coolant Temperature for Stable Operation
00130	P0130	O2 Sensor Circuit Malfunction (Bank 1 Sensor 1)
00131	P0131	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)
00132	P0132	O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)
00133	P0133	O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)
00134	P0134	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 1)
00135	P0135	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1)
00136	P0136	O2 Sensor Circuit Malfunction (Bank 1 Sensor 2)
00137	P0137	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2)
00138	P0138	O2 Sensor Circuit High Voltage (Bank 1 Sensor 2)
00139	P0139	O2 Sensor Circuit Slow Response (Bank 1 Sensor 2)
00140	P0140	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2)
00141	P0141	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)
00142	P0142	O2 Sensor Circuit Malfunction (Bank 1 Sensor 3)
00143	P0143	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 3)
00144	P0144	O2 Sensor Circuit High Voltage (Bank 1 Sensor 3)
00145	P0145	O2 Sensor Circuit Slow Response (Bank 1 Sensor 3)
00146	P0146	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 3)
00147	P0147	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 3)
00150	P0150	O2 Sensor Circuit Malfunction (Bank 2 Sensor 1)
00151	P0151	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1)
00152	P0152	O2 Sensor Circuit High Voltage (Bank 2 Sensor 1)
00153	P0153	O2 Sensor Circuit Slow Response (Bank 2 Sensor 1)
00154	P0154	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 1)
00155	P0155	O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 1)
00156	P0156	O2 Sensor Circuit Malfunction (Bank 2 Sensor 2)
00157	P0157	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 2)

OB15	MB	Description
00158	P0158	O2 Sensor Circuit High Voltage (Bank 2 Sensor 2)
00159	P0159	O2 Sensor Circuit Slow Response (Bank 2 Sensor 2)
00160	P0160	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 2)
00161	P0161	O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 2)
00162	P0162	O2 Sensor Circuit Malfunction (Bank 2 Sensor 3)
00163	P0163	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 3)
00164	P0164	O2 Sensor Circuit High Voltage (Bank 2 Sensor 3)
00165	P0165	O2 Sensor Circuit Slow Response (Bank 2 Sensor 3)
00166	P0166	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 3)
00167	P0167	O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 3)
00170	P0170	Fuel Trim Malfunction (Bank 1)
00171	P0171	System Too Lean (Bank 1)
00172	P0172	System Too Rich (Bank 1)
00173	P0173	Fuel Trim Malfunction (Bank 2)
00174	P0174	System Too Lean (Bank 2)
00175	P0175	System Too Rich (Bank 2)
00176	P0176	Fuel Composition Sensor Circuit Malfunction
00177	P0177	Fuel Composition Sensor Circuit Range/Performance
00178	P0178	Fuel Composition Sensor Circuit Low Input
00179	P0179	Fuel Composition Sensor Circuit High Input
00180	P0180	Fuel Temperature Sensor A Circuit Malfunction
00181	P0181	Fuel Temperature Sensor A Circuit Performance
00182	P0182	Fuel Temperature Sensor A Circuit low Input
00183	P0183	Fuel Temperature Sensor A Circuit High Input
00184	P0184	Fuel Temperature Sensor A Circuit Intermittent
00185	P0185	Fuel Temperature Sensor B Circuit Malfunction
00186	P0186	Fuel Temperature Sensor B Circuit Range/Performance
00187	P0187	Fuel Temperature Sensor U Circuit Low Input
00188	P0188	Fuel Temperature Sensor B Circuit High Input
00189	P0189	Fuel Temperature Sensor B Circuit Intermittent
00190	P0190	Fuel Rail Pressure Sensor Circuit Malfunction
00191	P0191	Fuel Rail Pressure Sensor Circuit Range/Performance
00192	P0192	Fuel Rail Pressure Sensor Circuit Low Input
00193	P0193	Fuel Rail Pressure Sensor Circuit High Input
00194	P0194	Fuel Rail Pressure Sensor Circuit Intermittent
00195	P0195	Engine Oil Temperature Sensor Malfunction
00196	P0196	Engine Oil Temperature Sensor Range/Performance

OB15	MB	Description
00197	P0197	Engine Oil Temperature Sensor Low
00198	P0198	Engine Oil Temperature Sensor High
00199	P0199	Engine Oil Temperature Sensor Intermittent
00200	P0200	Injector Circuit Malfunction
00201	P0201	Injector Circuit Malfunction - Cylinder 1
00202	P0202	Injector Circuit Malfunction - Cylinder 2
00203	P0203	Injector Circuit Malfunction - Cylinder 3
00204	P0204	Injector Circuit Malfunction - Cylinder 4
00205	P0205	Injector Circuit Malfunction - Cylinder 5
00206	P0206	Injector Circuit Malfunction - Cylinder 6
00207	P0207	Injector Circuit Malfunction - Cylinder 7
00208	P0208	Injector Circuit Malfunction - Cylinder 8
00209	P0209	Injector Circuit Malfunction - Cylinder 9
00210	P0210	Injector Circuit Malfunction - Cylinder 10
00211	P0211	Injector Circuit Malfunction - Cylinder 11
00212	P0212	Injector Circuit Malfunction - Cylinder 12
00213	P0213	Cold Start Injector 1 Malfunction
00214	P0214	Cold Start Injector 2 Malfunction
00215	P0215	Engine Shutoff Solenoid Malfunction
00216	P0216	Injection Timing Control Circuit Malfunction
00217	P0217	Engine Overtemp Condition
00218	P0218	Transmission Over Temperature Condition
00219	P0219	Engine Over Speed Condition
00220	P0220	Throttle/Pedal Position Sensor/Switch B Circuit Malfunction
00221	P0221	Throttle/pedal Position Sensor/Switch B Circuit Range/Performance Problem
00222	P0222	Throttle/pedal Position Sensor/Switch B Circuit Low Input
00223	P0223	Throttle/Pedal Position Sensor/Switch B Circuit High Input
00224	P0224	Throttle/Pedal Position Sensor/Switch B Circuit Intermittent
00225	P0225	Throttle/Pedal Position Sensor/Switch C Circuit Malfunction
00226	P0226	Throttle/Pedal Position Sensor/Switch C Circuit Range/Performance Problem
00227	P0227	Throttle/Pedal Position Sensor/Switch C Circuit Low Input
00228	P0228	Throttle/Pedal Position Sensor/Switch C Circuit High Input
00229	P0229	Throttle/Pedal Position Sensor/Switch C Circuit Intermittent
00230	P0230	Fuel Pump Primary Circuit Malfunction
00231	P0231	Fuel Pump Secondary Circuit Low
00232	P0232	Fuel Pump Secondary Circuit High
00233	P0233	Fuel Pump Secondary Circuit Intermittent

OB15	MB	Description
00234	P0234	Engine Overboost Condition
00235	P0235	Turbocharger Boost Sensor A Circuit Malfunction
00236	P0236	Turbocharger Boost Sensor A Circuit Range/Performance
00237	P0237	Turbocharger Boost Sensor A Circuit Low
00238	P0238	Turbocharger Boost Sensor A Circuit High
00239	P0239	Turbocharger Boost Sensor B Circuit Malfunction
00240	P0240	Turbocharger Boost Sensor B Circuit Range/Performance
00241	P0241	Turbocharger Boost Sensor B Circuit Low
00242	P0242	Turbocharger Boost Sensor B Circuit High
00243	P0243	Turbocharger Wastegate Solenoid A Malfunction
00244	P0244	Turbocharger Wastegate Solenoid A Range/Performance
00245	P0245	Turbocharger Wastegate Solenoid A low
00246	P0246	Turbocharger Wastegate Solenoid A High
00247	P0247	Turbocharger Wastegate Solenoid B Malfunction
00248	P0248	Turbocharger Wastegate Solenoid B Range/Performance
00249	P0249	Turbocharger Wastegate Solenoid B Low
00250	P0250	Turbocharger Wastegate Solenoid B High
00251	P0251	Injection Pump Fuel Metering Control "A" Malfunction (Cam/Rotor/Injector)
00252	P0252	Injection Pump Fuel Metering Control "A" Range/Performance (Cam/Rotor/Injector)
00253	P0253	Injection Pump Fuel Metering Control "A" Low (Cam/Rotor/Injector)
00254	P0254	Injection Pump Fuel Metering Control "A" High (Cam/Rotor/Injector)
00255	P0255	Injection Pump Fuel Metering Control "A" Intermittent (Cam/Rotor/Injector)
00256	P0256	Injection Pump Fuel Metering Control "B" Malfunction (Cam/Rotor/Injector)
00257	P0257	Injection Pump Fuel Metering Control "B" Range/Performance (Cam/Rotor/Injector)
00258	P0258	Injection Pump Fuel Metering Control "B" Low (Cam/Rotor/Injector)
00259	P0259	Injection lump Fuel Metering Control "B" High (Cam/Rotor/Injector)
00260	P0260	Injection Pump Fuel Metering Control "B" Intermittent (Cam/Rotor/Injector)
00261	P0261	Cylinder 1 Injector Circuit Low
00262	P0262	Cylinder 1 Injector Circuit High
00263	P0263	Cylinder 1 Contribution/Balance Fault
00264	P0264	Cylinder 2 Injector Circuit Low
00265	P0265	Cylinder 2 Injector Circuit High
00266	P0266	Cylinder 2 Contribution/Balance Fault
00267	P0267	Cylinder 3 Injector Circuit Low
00268	P0268	Cylinder 3 Injector Circuit High
00269	P0269	Cylinder 3 Contribution/Balance Fault

OB15	MB	Description
00270	P0270	Cylinder 4 Injector Circuit Low
00271	P0271	Cylinder 4 Injector Circuit High
00272	P0272	Cylinder 4 Contribution/Balance Fault
00273	P0273	Cylinder 5 Injector Circuit Low
00274	P0274	Cylinder 5 Injector Circuit High
00275	P0275	Cylinder 5 Contribution/Balance Fault
00276	P0276	Cylinder 6 Injector Circuit Low
00277	P0277	Cylinder 6 Injector Circuit High
00278	P0278	Cylinder 6 Contribution/Balance Fault
00279	P0279	Cylinder 7 Injector Circuit Low
00280	P0280	Cylinder 7 Injector Circuit High
00281	P0281	Cylinder 7 Contribution/Balance Fault
00282	P0282	Cylinder 8 Injector Circuit Low
00283	P0283	Cylinder 8 Injector Circuit High
00284	P0284	Cylinder 8 Contribution/Balance Fault
00285	P0285	Cylinder 9 Injector Circuit Low
00286	P0286	Cylinder 9 Injector Circuit High
00287	P0287	Cylinder 9 Contribution/Balance Fault
00288	P0288	Cylinder 10 Injector Circuit Low
00289	P0289	Cylinder 10 Injector Circuit High
00290	P0290	Cylinder 10 Contribution/balance Fault
00291	P0291	Cylinder 11 Injector Circuit Low
00292	P0292	Cylinder 11 Injector Circuit High
00293	P0293	Cylinder 11 Contribution/balance Fault
00294	P0294	Cylinder 12 Injector Circuit Low
00295	P0295	Cylinder 12 Injector Circuit High
00296	P0296	Cylinder 12 Contribution/Balance Fault
00300	P0300	Random/Multiple Cylinder Misfire Detected
00301	P0301	Cylinder 1 Misfire Detected
00302	P0302	Cylinder 2 Misfire Detected
00303	P0303	Cylinder 3 Misfire Detected
00304	P0304	Cylinder 4 Misfire Detected
00305	P0305	Cylinder 5 Misfire Detected
00306	P0306	Cylinder 6 Misfire Detected
00307	P0307	Cylinder 7 Misfire Detected
00308	P0308	Cylinder 8 Misfire Detected
00309	P0309	Cylinder 9 Misfire Detected

OB15	MB	Description
00310	P0310	Cylinder 10 Misfire Detected
00311	P0311	Cylinder 11 Misfire Detected
00312	P0312	Cylinder 12 Misfire Detected
00320	P0320	Ignition/Distributor Engine Speed Input Circuit Malfunction
00321	P0321	Ignition/Distributor Engine Speed Input Circuit Range/Performance
00322	P0322	Ignition/Distributor Engine Speed Input Circuit No Signal
00323	P0323	Ignition/Distributor Engine Speed Input Circuit Intermittent
00325	P0325	Knock Sensor 1 (Front) Circuit Malfunction (Bank 1 or Single Sensor)
00326	P0326	Knock Sensor 1 Circuit Range/Performance (Bank 1 or Single Sensor)
00327	P0327	Knock Sensor 1 Circuit low Input (Bank 1 or Single Sensor)
00328	P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)
00329	P0329	Knock Sensor 1 Circuit Input Intermittent (Bank 1 or Single Sensor)
00330	P0330	Knock Sensor 2 (Rear) Circuit Malfunction (Bank 2)
00331	P0331	Knock Sensor 2 Circuit Range/Performance (Bank 2)
00332	P0332	Knock Sensor 2 Circuit Low Input (Bank 2)
00333	P0333	Knock Sensor 2 Circuit High Input (Bank 2)
00334	P0334	Knock Sensor 2 Circuit Input Intermittent (Bank 2)
00335	P0335	Crankshaft Position Sensor A Circuit Malfunction
00336	P0336	Crankshaft Position Sensor A Circuit Range/Performance
00337	P0337	Crankshaft Position Sensor A Circuit Low Input
00338	P0338	Crankshaft Position Sensor A Circuit High Input
00339	P0339	Crankshaft Position Sensor A Circuit Intermittent
00340	P0340	Camshaft Position Sensor Circuit Malfunction
00341	P0341	Camshaft Position Sensor Circuit Range/Performance
00342	P0342	Camshaft Position Sensor Circuit Low Input
00343	P0343	Camshaft Position Sensor Circuit High Input
00344	P0344	Camshaft Position Sensor Circuit Intermittent
00350	P0350	Ignition Coil Primary/Secondary Circuit Malfunction
00351	P0351	Ignition Coil A Primary/Secondary Circuit Malfunction
00352	P0352	Ignition Coil B Primary/Secondary Circuit Malfunction
00353	P0353	Ignition Coil C Primary/Secondary Circuit Malfunction
00354	P0354	Ignition Coil D Primary/Secondary Circuit Malfunction
00355	P0355	Ignition Coil B Primary/Secondary Circuit Malfunction
00356	P0356	Ignition Coil F Primary/Secondary Circuit Malfunction
00357	P0357	Ignition Coil G Primary/Secondary Circuit Malfunction
00358	P0358	Ignition Coil H Primary/Secondary Circuit Malfunction
00359	P0359	Ignition Coil I Primary/Secondary Circuit Malfunction

OB15	MB	Description
00360	P0360	Ignition Coil I Primary/Secondary Circuit Malfunction
00361	P0361	Ignition Coil K Primary/Secondary Circuit Malfunction
00362	P0362	Ignition Coil L Primary/Secondary Circuit Malfunction
00370	P0370	Timing Reference High Resolution Signal (Camshaft to Crankshaft Angle) A Malfunction
00371	P0371	Timing Reference High Resolution Signal (Camshaft to Crankshaft Angle) A Too Many Pulses
00372	P0372	Timing Reference High Resolution Signal (Camshaft to Crankshaft Angle) A Too Few Pulses
00373	P0373	Timing Reference High Resolution Signal (Camshaft to Crankshaft Angle) A Intermittent/Erratic Pulses
00374	P0374	Timing Reference High Resolution Signal (Camshaft to Crankshaft angle) A No Pulses
00375	P0375	Timing Reference High Resolution Signal (Camshaft to Crankshaft angle) B Malfunction
00376	P0376	Timing Reference High Resolution Signal (Camshaft to Crankshaft angle) B Too Many Pulses
00377	P0377	Timing Reference High Resolution Signal (Camshaft to Crankshaft angle) B Too Few Pulses
00378	P0378	Timing Reference High Resolution Signal (Camshaft to Crankshaft angle) B Intermittent/Erratic Pulses
00379	P0379	Timing Reference High Resolution Signal (Camshaft to Crankshaft angle) B No Pulses
00380	P0380	Glow Plug/Heater Circuit "A" Malfunction
00381	P0381	Glow Plug/Heater Indicator Circuit Malfunction
00382	P0382	Glow Plug/Heater Circuit "B" Malfunction
00385	P0385	Crankshaft Position Sensor B Circuit Malfunction
00386	P0386	Crankshaft Position Sensor B Circuit Range/Performance
00387	P0387	Crankshaft Position Sensor B Circuit Low Input
00388	P0388	Crankshaft Position Sensor B Circuit High Input
00389	P0389	Crankshaft Position Sensor B Circuit Intermittent
00400	P0400	Exhaust Gas Recirculation Flow Malfunction
00401	P0401	Exhaust Gas Recirculation Flow Insufficient Detected
00402	P0402	Exhaust Gas Recirculation Flow Excessive Detected
00403	P0403	Exhaust Gas Recirculation Circuit Malfunction
00404	P0404	Exhaust Gas Recirculation Circuit Range/Performance
00405	P0405	Exhaust Gas Recirculation Sensor A Circuit Low
00406	P0406	Exhaust Gas Recirculation Sensor A Circuit High
00407	P0407	Exhaust Gas Recirculation Sensor B Circuit Low
00408	P0408	Exhaust Gas Recirculation Sensor B Circuit High

OB15	MB	Description
00410	P0410	Secondary Air Injection System Malfunction
00411	P0411	Secondary Air Injection System Incorrect Flow Detected
00412	P0412	Secondary Air Injection System Switching Valve A Circuit Malfunction
00413	P0413	Secondary Air Injection System Switching Valve A Circuit Open
00414	P0414	Secondary Air Injection System Switching Valve A Circuit Shorted
00415	P0415	Secondary Air Injection System Switching Valve B Circuit Malfunction
00416	P0416	Secondary Air Injection System Switching Valve B Circuit Open
00417	P0417	Secondary Air Injection System Switching Valve B Circuit Shorted
00418	P0418	Secondary Air Injection System Relay "A" circuit Malfunction
00419	P0419	Secondary Air Injection System Relay "B"" Circuit Malfunction
00420	P0420	Catalyst System Efficiency Below Threshold (Bank 1)
00421	P0421	Warm Up Catalyst Efficiency Below Threshold (Bank 1)
00422	P0422	Main Catalyst Efficiency Below Threshold (Bank 1)
00423	P0423	Heated Catalyst Efficiency Below Threshold (Bank l)
00424	P0424	Heated Catalyst Temperature Below Threshold (Bank 1)
00430	P0430	Catalyst System Efficiency Below Threshold (Bank 2)
00431	P0431	Warm Up Catalyst Efficiency Below Threshold (Bank 2)
00432	P0432	Main Catalyst Efficiency Below Threshold (Bank 2)
00433	P0433	Heated Catalyst Efficiency Below Threshold (Bank 2)
00434	P0434	Heated Catalyst Tern--re Below Threshold (Bank 2)
00440	P0440	Evaporative Emission Control System Malfunction
00441	P0441	Evaporative Emission Control System Incorrect Purge flow
00442	P0442	Evaporative Emission Control System leak Detected (small leak)
00443	P0443	Evaporative Emission Control System Purge Control Valve Circuit Malfunction
00444	P0444	Evaporative Emission Control System Purge Control Valve Circuit Open
00445	P0445	Evaporative Emission Control System Purge Control Valve Circuit Shorted
00446	P0446	Evaporative Emission Control System Vent Control Circuit Malfunction
00447	P0447	Evaporative Emission Control System Vent Control Circuit Open
00448	P0448	Evaporative Emission Control System Vent Control Circuit Shorted
00449	P0449	Evaporative Emission Control System Vent Valve/Solenoid Circuit Malfunction
00450	P0450	Evaporative Emission Control System Pressure Sensor Malfunction
00451	P0451	Evaporative Emission Control System Pressure Sensor Range/Performance
00452	P0452	Evaporative Emission Control System Pressure Sensor Low Input
00453	P0453	Evaporative Emission Control System Pressure Sensor High Input
00454	P0454	Evaporative Emission Control System Pressure Sensor Intermittent
00455	P0455	Evaporative Emission Control System Tank Leak Detected (large leak) Gas

OB15	MB	Description
		Cap Off
00460	P0460	Fuel Level Sensor Circuit Malfunction
00461	P0461	Fuel Level Sensor Circuit Range/Performance
00462	P0462	Fuel level Sensor Circuit Low Input
00463	P0463	Fuel level Sensor Circuit High Input
00464	P0464	Fuel level Sensor Circuit Intermittent
00465	P0465	Purge Flow Sensor Circuit Malfunction
00466	P0466	Purge flow Sensor Circuit Range/Performance
00467	P0467	Purge Flow Sensor Circuit Low Input
00468	P0468	Purge flow Sensor Circuit High Input
00469	P0469	Purge flow Sensor Circuit Intermittent
00470	P0470	Exhaust Pressure Sensor Malfunction
00471	P0471	Exhaust Pressure Sensor Range/Performance
00472	P0472	Exhaust Pressure Sensor Low
00473	P0473	Exhaust Pressure Sensor High
00474	P0474	Exhaust Pressure Sensor Intermittent
00475	P0475	Exhaust Pressure Control Valve Malfunction
00476	P0476	Exhaust Pressure Control Valve Range/Performance
00477	P0477	Exhaust Pressure Control Valve Low
00478	P0478	Exhaust Pressure Control Valve High
00479	P0479	Exhaust Pressure Control Valve Intermittent
00480	P0480	Cooling Fan 1 Control Circuit Malfunction
00481	P0481	Cooling Fan 2 Control Circuit Malfunction
00482	P0482	Cooling Fan 3 Control Circuit Malfunction
00483	P0483	Cooling Fan Rationality Check Malfunction
00484	P0484	Cooling Fan Circuit Over Current
00485	P0485	Cooling Fan Power/Ground Circuit Malfunction
00500	P0500	Vehicle Speed Sensor Malfunction
00501	P0501	Vehicle Speed Sensor Range/Performance
00502	P0502	Vehicle Speed Sensor Circuit Low Input
00503	P0503	Vehicle Speed Sensor Intermittent/Erratic/High
00505	P0505	Idle Control System Malfunction
00506	P0506	Idle Control System RPM Lower Than Expected
00507	P0507	Idle Control System RPM Higher Than Expected
00510	P0510	Closed Throttle Position Switch Malfunction
00520	P0520	Engine Oil Pressure Sensor/Switch Circuit Malfunction
00521	P0521	Engine Oil Pressure Sensor/Switch Range/Performance

OB15	MB	Description
00522	P0522	Engine Oil Pressure Sensor/Switch Low Voltage
00523	P0523	Engine Oil Pressure Sensor/Switch High Voltage
00530	P0530	A/C Refrigerant Pressure Sensor Circuit Malfunction
00531	P0531	A/C Refrigerant Pressure Sensor Circuit Range/Performance
00532	P0532	A/C Refrigerant Pressure Sensor Circuit Low Input
00533	P0533	A/C Refrigerant pressure Sensor Circuit High Input
00534	P0534	Air Conditioner Refrigerant Charge Loss
00550	P0550	Power Steering Pressure Sensor Circuit Malfunction
00551	P0551	Power Steering Pressure Sensor Circuit Range/Performance
00552	P0552	Power Steering Pressure Sensor Circuit Low Input
00553	P0553	Power Steering Pressure Sensor Circuit High Input
00554	P0554	Power Steering Pressure sensor Circuit Intermittent
00560	P0560	System Voltage Malfunction
00561	P0561	System Voltage Unstable
00562	P0562	System Voltage Low
00563	P0563	System Voltage High
00565	P0565	Cruise Control On Signal Malfunction
00566	P0566	Cruise Control Off Signal Malfunction
00567	P0567	Cruise Control Resume Signal Malfunction
00568	P0568	Cruise Control Set Signal Malfunction
00569	P0569	Cruise Control Coast Signal Malfunction
00570	P0570	Cruise Control Accelerator Signal Malfunction
00571	P0571	Cruise Control/Brake Switch A Circuit Malfunction
00572	P0572	Cruise Control/Brake Switch A Circuit Low
00573	P0573	Cruise Control/Brake Switch A Circuit High
00574	P0574	through 10580 Reserved for Cruise Codes
00600	P0600	CAN Serial Communication Link Malfunction to ESP
00601	P0601	Internal Control Module Memory Check Sum Error
00602	P0602	Internal Control Module Programming Error
00603	P0603	Internal Control Module Keep Alive Memory (KAM) Error
00604	P0604	Internal Control Module Random Access Memory (RAM) Error
00605	P0605	Internal Control Module Read Only Memory (ROM) Error (Module Identification Defined by SAE J1979)
00606	P0606	PCM Processor Fault
00608	P0608	Control Module VSS Output "A" Malfunction
00609	P0609	Control Module VSS Output "B" Malfunction
00620	P0620	Generator Control Circuit Malfunction

OB15	MB	Description
00621	P0621	Generator Lamp "L" Control Circuit Malfunction
00622	P0622	Generator Field "F" Control Circuit Malfunction
00650	P0650	Malfunction Indicator Lamp (MIL) Control Circuit Malfunction
00654	P0654	Engine RPM Output Circuit Malfunction
00655	P0655	Engine Hot Lamp Output Control Circuit Malfunction
00656	P0656	Fuel Level Output Circuit Malfunction
00700	P0700	Transmission Control System Malfunction
00701	P0701	Transmission Control System Range/Performance
00702	P0702	Transmission Control System Electrical
00703	P0703	Torque Converter/Brake Switch B Circuit Malfunction
00704	P0704	Clutch Switch Input Circuit Malfunction
00705	P0705	Transmission Range Sensor Circuit Malfunction (PRNDL Input)
00706	P0706	Transmission Range Sensor Circuit Range/Performance
00707	P0707	Transmission Range Sensor Circuit Low Input
00708	P0708	Transmission Range Sensor Circuit High Input
00709	P0709	Transmission Range Sensor Circuit Intermittent
00710	P0710	Transmission Fluid Temperature Sensor Circuit Malfunction
00711	P0711	Transmission Fluid Temperature Sensor Circuit Range/Performance
00712	P0712	Transmission Fluid Temperature Sensor Circuit Low Input
00713	P0713	Transmission Fluid Temperature Sensor Circuit High Input
00714	P0714	Transmission Fluid Temperature Sensor Circuit Intermittent
00715	P0715	Input/Turbine Speed Sensor Circuit Malfunction
00716	P0716	Input/Turbine Speed Sensor Circuit Range/Performance
00717	P0717	Input/Turbine Speed Sensor Circuit No Signal
00718	P0718	Input/Turbine Speed Sensor Circuit Intermittent
00719	P0719	Torque Converter/Brake Switch B Circuit Low
00720	P0720	Output Speed Sensor Circuit Malfunction
00721	P0721	Output Speed Sensor Circuit Range/Performance
00722	P0722	Output Speed Sensor Circuit No Signal
00723	P0723	Output Speed Sensor Circuit Intermittent
00724	P0724	Torque Converter/Brake Switch B Circuit High
00725	P0725	Engine Speed Input Circuit Malfunction
00726	P0726	Engine Speed Input Circuit Range/Performance
00727	P0727	Engine Speed Input Circuit No Signal
00728	P0728	Engine Speed Input Circuit Intermittent
00730	P0730	Incorrect Gear Ratio
00731	P0731	Gear 1 Incorrect Ratio

OB15	MB	Description
00732	P0732	Gear 2 Incorrect Ratio
00733	P0733	Gear 3 Incorrect Ratio
00734	P0734	Gear 4 Incorrect Ratio
00735	P0735	Gear 5 Incorrect Ratio
00736	P0736	Reverse Incorrect Ratio
00740	P0740	Torque Converter Clutch Circuit Malfunction
00741	P0741	Torque Converter Clutch Circuit Performance or Stuck Off
00742	P0742	Torque Converter Clutch Circuit Stuck On
00743	P0743	Torque Converter Clutch Circuit Electrical
00744	P0744	Torque Converter Clutch Circuit Intermittent
00745	P0745	Pressure Control Solenoid Malfunction
00746	P0746	Pressure Control Solenoid Performance or Stuck Off
00747	P0747	Pressure Control Solenoid Stuck On
00748	P0748	Pressure Control Solenoid Electrical
00749	P0749	Pressure Control Solenoid Intermittent
00750	P0750	Shift Solenoid A Malfunction
00751	P0751	Shift Solenoid A Performance or Stuck Off
00752	P0752	Shift Solenoid A Stuck On
00753	P0753	Shift Solenoid A Electrical
00754	P0754	Shift Solenoid A Intermittent
00755	P0755	Shift Solenoid B Malfunction
00756	P0756	Shift Solenoid B Performance or Stuck Off
00757	P0757	Shift Solenoid B Stuck On
00758	P0758	Shift Solenoid B Electrical
00759	P0759	Shift Solenoid B Intermittent
00760	P0760	Shift Solenoid C Malfunction
00761	P0761	Shift Solenoid C Performance or Stuck Off
00762	P0762	Shift Solenoid C Stuck On
00763	P0763	Shift Solenoid C Electrical
00764	P0764	Shift Solenoid C Intermittent
00765	P0765	Shift Solenoid D Malfunction
00766	P0766	Shift Solenoid D Performance or Stuck Off
00767	P0767	Shift Solenoid D Stuck On
00768	P0768	Shift Solenoid D Electrical
00769	P0769	Shift Solenoid D Intermittent
00770	P0770	Shift Solenoid E Malfunction
00771	P0771	Shift Solenoid E Performance or Stuck Off

OB15	MB	Description
00772	P0772	Shift Solenoid E Stuck On
00773	P0773	Shift Solenoid E Electrical
00774	P0774	Shift Solenoid E Intermittent
00780	P0780	Shift Malfunction
00781	P0781	1-2 Shift Malfunction
00782	P0782	2-3 Shift Malfunction
00783	P0783	3-4 Shift Malfunction
00784	P0784	4-5 Shift Malfunction
00785	P0785	Shift/Timing Solenoid Malfunction
00786	P0786	Shift/Timing Solenoid Range/Performance
00787	P0787	Shift/Timing Solenoid low
00788	P0788	Shift/Timing Solenoid High
00789	P0789	Shift/Timing Solenoid Intermittent
00790	P0790	Normal/Performance Switch Circuit Malfunction
00801	P0801	Reverse Inhibit Control Circuit Malfunction
00802	P0802	Resonance intake manifold switch valve circuit
00803	P0803	1-4 Upshift (Skip Shift) Solenoid Control Circuit Malfunction
00804	P0804	1-4 Upshift (Skip Shift) Lamp Control Circuit Malfunction
00805	P0805	Air-flap recirculation signal output stage incorrect
00806	P0806	A/C compressor output stage, magnetic combination
00809	P0809	Variation in angle of camshaft to crankshaft incorrect
00811	P0811	CAN problem No reception from EZS (Ignition Lock)
00816	P0816	Oil pressure sensor open circuit or short circuit, malfunction
01031	P1031	O2 sensor (G3/3 and G3/4) connections reversed
01146	P1146	Mass air flow circuit malfunction - Bank 2 (left)
01147	P1147	ECT circuit malfunction - Bank 2 (left)
01148	P1148	IAT circuit malfunction - Bank 2 (left)
01149	P1149	MAP circuit malfunction - Bank 2 (left)
01162	P1162	Throttle position sensor circuit failure - Bank 2 (left)
01163	P1163	Oil level switch.
01176	P1176	Oil pressure sensor open circuit or short circuit, malfunction.
01177	P1177	Oil sensor, temperature incorrect.
01178	P1178	Oil sensor, engine oil level incorrect.
01179	P1179	Oil sensor, engine oil quality incorrect.
01180	P1180	Oil sensor, engine oil temperature too high
01181	P1181	Engine electric-fan /Air conditioning malfunction
01182	P1182	Starting system relay in fuse and relay module box

OB15	MB	Description
01183	P1183	Right cylinders bank cut-off output stage malfunction
01184	P1184	Left cylinders bank cut-off output stage malfunction
01185	P1185	Water in engine oil, Oil sensor
01186	P1186	Fuel safety shut-off recognized.
01225	P1225	Resonance intake manifold switchover valve circuit
01235	P1235	Air-flap recirculated signal output stage faulty
01236	P1236	A/C compressor output stage, magnetic combination incorrect
01300	P1300	CKP sensor circuit failure - Bank 2 (left)
01384	P1384	Knock sensor circuit malfunction - Left front.
01385	P1385	Knock sensor circuit malfunction - Left rear.
01386	P1386	Knock sensor control from electronic control module - at limit
01397	P1397	CMP sensor circuit range/performance - Bank 2 (left)
01400	P1400	EGR (exhaust gas recirculation) output stage faulty
01420	P1420	Air-pump switchover valve circuit
01443	P1443	EVAP system malfunction - Bank 2 (left)
01453	P1453	Air-pump relay, relay module, fuse or circuit
01463	P1463	Left AIR system malfunction
01490	P1490	EVAP system purge control valve circuit malfunction - Bank 2 (left)
01491	P1491	A/C system refrigerant pressure too high
01492	P1492	Exhaust-flap faulty
01519	P1519	Right or sole adjustable camshaft timing solenoid mechanically faulty.
01522	P1522	Left adjustable camshaft timing solenoid mechanically faulty.
01525	P1525	Right or sole adjustable camshaft timing solenoid electrically faulty
01533	P1533	Left adjustable camshaft timing solenoid electrically faulty
01542	P1542	Pedal position sensor signal
01570	P1570	CAN bus signal from DAS to the ME-SFI control unit - DAS locked, signal interrupted, mismatched ECMs.
01580	P1580	Right or sole EA/CC/ISC Actuator circuit faulty
01581	P1581	Left EA/CC/ISC Actuator circuit faulty
01584	P1584	Stop lamp switch/Brake switch signal
01587	P1587	Left engine control module voltage supply faulty.
01588	P1588	CAN bus signal from the RCL controller to the Left engine controller faulty.
01589	P1589	Knock sensor control from the left engine controller at limit.
01603	P1603	CAN bus problem. No data reception from EIS
01605	P1605	CAN fault. ABS speed sensor error vs. VSS (RPM)
01632	P1632	Left engine control module faulty.
01641	P1641	Right of left CTP signal to the engine control module faulty or CAN bus communication by the left engine control has been interrupted.

OB15	MB	Description
01642	P1642	Engine control module incorrect coding (MT coded has AT)
01643	P1643	Engine control module incorrect coding or CAN signal from Transmission system faulty.
01644	P1644	Transmission control module, voltage too low. Transmission control system version cannot be checked.
01747	P1747	CAN signal from ETC. CAN signal failure from ETC or instrument cluster faulty.

Operating the CS1000 - Mercedes Benz

OB15-12 Memory Cartridge - Mercedes Benz Analog & Digital Fault Codes

1. Setting Up

ATTENTION: DO NOT INSERT CARTRIDGE WITH POWER SUPPLIED TO THE CS1000.

PROPER USE OF THE MERCEDES DIAGNOSTIC SYSTEM

Identify vehicle Model and Month/Year of production

Confirm specific drivability complaint. If MIL is on, when did it come on and under what conditions?

Insert the OB15-12 memory cartridge into the base of the scanner. Make sure the arrow on the cartridge is facing up as it is inserted. Gently push the cartridge into the CS1000 until the cartridge seats completely.

Refer to Diagnostic Cable introduction page 9 and connection table page 10 of this manual to determine vehicle cable requirements. Connect the cable specified to the scanner and to the vehicle Diagnostic Connector.

- Connect the 25-pin cable connector head firmly to the scanner 25-pin connection port.
- Connect the Red test lead from the scanner to the power supply socket (B+) on the Diagnostic Connector, where available, or to the vehicle's battery via the extension cable and battery clamp supplied.
- Connect the Black test lead from the scanner to the ground socket on the Diagnostic Connector. Now the scanner powered up and the power indicator light should be fully illuminated. The screen will display **1**.

Note:
Power indicator light (LED) must light up. If it does not, refer to the list below for detailed test.

- Refer to the connection table of this manual; check the Red and Black test lead with the socket number on the Diagnostic Connector, Is there an incorrect or weak connection?
- Check the power requirement on the Diagnostic Connector. (Must be performed with the ignition ON when connected with 16-pole diagnostic connector at socket 16)
- Connect the Yellow test lead to the system diagnostic socket that you use to extract codes.

Refer to this manual or Mercedes Benz maintenance manual for location of the Diagnostic sockets for the type of Diagnostic Connector fitted to the vehicle and the system capabilities available for code access on the applicable Diagnostic sockets.

2. Turn Ignition ON (KOEO) or Engine at idle (KOER)

3. System Selection

1 **Analog type Transmission Systems (impulse fault code type)**

Models 129, 140 with CFI, LH-SFI control systems 1990 - 1993

2 **Digital type Transmission Systems as follows:**

Models 202, 210, 129, 140 with HFM-SFI, ME-SFI control system 1994 - 1997

Press the SYSTEM key to scroll to display from **1** to **2** system.

SYSTEM

ANALOG TEST PROCEDURES

1. Ignition in the KOEO position (Key On Engine Off).
2. Choose system **1**.
3. Place test probe (yellow) in pin-out for specific analog test.

DIGITAL TEST PROCEDURE

1. Ignition in the KOEO position (Key On Engine Off)
2. Choose system **2.**
3. Place test probe (yellow) in pin-out for Digital test.
4. If any system does not respond, test it using the Analog Test Procedure.

*Some early LH Injection and Diagnostic Module systems may not respond to the digital test.

4. Read Fault Codes

Press the **READ** key to begin to read the fault codes for the system selected. The scanner will scan all of the fault codes and keep them in memory.

- **When reading Digital Fault Codes the scanner will display a U 1 or a U 2 indicating the type of digital system it has discovered. Refer to the U codes displayed on the top of the code pages to identify the system.**

READ

Press the **NEXT** key to scroll through the fault codes ⊂ **xx** . The display will cycle to the first code after the last code is displayed. When there are no faults in the system, ⊂ **0** will be displayed on the screen.

NEXT

5. Identification/Rectification of Faults

1. Identify fault code and related circuit using this manual or using the factory diagnostic manuals

available from Baum Tools Technical Publications 415-566-9229.

2. Carry out required repair before clearing fault codes.

6. Clearing Fault Codes

After repairs have been carried out reread the codes. After rereading the codes press the CLEAR key to erase all of the fault codes from the control unit memory. When there are no faults in the system, either ⊂ **1** (Impulse or analog systems) or ⊂ **2** (digital systems) will be displayed on the screen.

CLEAR

7. Return to System Select Function

Press the SYSTEM key to scroll through the system selections.

SYSTEM

ANALOG FAULT CODES

Automatic-engaged Four-wheel Drive (4MATIC)

1

Models	Model Years
124.230 124.290	1990-93

Connect wires of Scanner as follows

Scanner	Data Link Connector 8-pin
Yellow	Socket 5
Black	Socket 1
Red	Battery (+)

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	4MATIC control module
3	Brake light switch
4	Left front axle vehicle speed sensor
5	Right front axle vehicle speed sensor
6	Rear speed sensor signal
7	All 3 vehicle speed sensors
8	Over volts protection relay, front axle train valve
9	Over volts protection relay, central differential lock valve
10	Over volts protection relay, stop lamp switch, Rear axle differential lock valve
11	Steering angle sensor signal

Electronic Automatic Transmission Control 5-Speed (ETC) with CFI

E 1

Models	Model Years
129	1990-93

Connect wires of Scanner as follows

Scanner	Data Link Connector 16-pin
Yellow	Socket 13
Black	Socket 1
Red	Socket 16

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Not used
3	Engine load signal interrupted
4	Throttle valve position switch (potentiometer) interrupted
5	Engine speed signal (RPM) interrupted
6	Vehicle speed sensor interrupted
7	Output fault in TCM (N15/1) or fault in the valve block control valve circuit (Y3/1y2)
8	Transmission control module (TCM) (N15/1)
9	Valve control valve block (Y3/1y2)
10	Valve control valve block (Y3/1y2), short circuit

Electronic Automatic Transmission Control 5-Speed (ETC) with LH-SFI

1

Models	Model Years
129 140	1990-93

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 10
Black	Socket 1
Red	Socket 3

FAULT CODE TABLE

DTC Readout	Possible Cause of Failure
1	No fault found
2	Engine control module (N3/4) does not match TCM
3	Transmission overload protection switch 4th/5th gear defective
4	CAN data line from EA/CC/ISC control module (N4/1) signal distorted
5	CAN data line from DI control module (N1/3) or HFM control module signal distorted
6	CAN data line signal distorted
7	Valve control valve block (Y3/1y2), open circuit or TCM (N15/1) defective
8	Automatic Transmission Control Module (TCM) (N15/1) defective
9	Valve control valve block (Y3/1y2)
10	Valve control valve block (Y3/1y2), short circuit

DIGITAL FAULT CODES

Electronic Automatic Transmission Control 5-speed (ETC) with ME-SFI

E 2
U 1

Models	Engines	Model Years
129 140 163 170 202 208 210	104 111 112 113 119 120 606	1995-98

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 10
Black	Socket 1
Red	Socket 3

Fault Code Table

DTC Readout	Possible cause of Failure
1	No fault stored
2	1-2/4-5 shift solenoid valve circuit fault (Y3/6y3)
3	2-3 shift solenoid valve circuit fault (Y3/6y5)
4	3-4 shift solenoid valve circuit fault (Y3/6y4)
5	PWM solenoid valve (torque converter lock-up) circuit fault (Y3/6y6)
6	Pressure regulating solenoid valve circuit fault (Y3/6y1)
7	Shift pressure regulating solenoid valve circuit fault (Y3/6y2)
8	R/P lock solenoid, function defective (Y66/1)
9	Cable to starter lock-out relay module, function defective (K38/3)
10	Voltage supply to solenoid valves
11	Voltage supply to RPM sensors

DTC Readout	Possible cause of Failure
12	RPM sensor 2 (Y3/6n2), signal defective
13	RPM sensor 3 (Y3/6n3), signal defective
16	Transmission output sensor (B49) defective
17	Transmission selector lever coding invalid
18	Selector lever signal incorrect (This code can be ignored.) or between ranges
19	Transmission fluid temperature sensor (Y3/6b1) signal defective
20	Starter lock-out contact (Y3/6s1) not functioning
20	Transmission oil temperature sensor defective/Starter lock-out contact not functioning
21	Supply voltage (terminal 87) too low or overvoltage.
22	CAN data: Right rear wheel speed (VSS) from traction system incorrect/implausible
23	CAN data: Left rear wheel speed (VSS) from traction system incorrect/implausible
24	CAN data: Pedal value from ME-SFI controller incorrect/implausible
24	CAN data: Right front wheel speed (VSS) from traction system incorrect/implausible
25	CAN data: Engine RPM from ME-SFI controller system incorrect/implausible
25	CAN data: Left front wheel speed (VSS) from traction system incorrect/implausible
26	CAN data: Right engine torque from ME-SFI controller system incorrect/implausible
26	CAN data: Pedal value from ME-SFI controller incorrect/implausible
27	CAN data: Altitude adjustment factor from the ME-SFI controller incorrect/implausible (This fault code can be ignored if no relative faults stored in the ME-SFI
27	CAN data: Adjusted engine torque incorrect/implausible
28	CAN data: Left engine torque from ME-SFI controller system incorrect/implausible
28	CAN data: Engine RPM from ME-SFI controller system incorrect/implausible
29	CAN data: Right engine torque from ME-SFI controller system incorrect/implausible
30	CAN data: Communication with traction system faulty
30	CAN data: Altitude adjustment factor from the ME-SFI controller incorrect/implausible (This fault code can be ignored if no relative faults stored in the ME-SFI
31	CAN data: Communication to the ME-SFI controller is faulty
31	CAN data: Maximum induced engine torque from ME-SFI controller incorrect/implausible
32	CAN data: Communication to/from the ME-SFI controller is faulty

DTC Readout	Possible cause of Failure
32	CAN data: Left engine torque from ME-SFI controller system incorrect/implausible
33	CAN data: Communication to/from the ME-SFI controller is faulty
33	CAN data: Throttle valve actuator actual value from ME-SFI incorrect/implausible
34	CAN data: Communication to/from the ME-SFI controller is faulty
35	CAN data: Communication to/from the ME-SFI controller is faulty
36	CAN data: Communication to/from the ME-SFI controller is faulty or the engine temperature is implausible.
37	CAN data: All communications are faulty
38	CAN data: Communication to/from the Traction system controller is faulty
39	CAN data: Communication to/from the ME-SFI controller is faulty
40	CAN data: Communication to/from the Instrument Cluster is faulty
50	Speed sensor n3 or clutch K1 are faulty
51	Gear implausible or transmission slips.
52	Command valve (6, 14, or 25) sticking under pressure.
52	Unauthorized locking of Torque Converter lock-up clutch. Replace Torque Converter.
53	Torque converter lock-up clutch, not functioning. Replace Torque Converter.
53	Torque converter lock-up clutch, input (RPM) too high. Replace Torque Converter.
54	No feedback signal from transmission overload protection.
55	Gear comparison incorrect or target gear selection not achieved.
56-65	Transmission control unit (N15/3) faulty .
98-155	**These codes are intermittent. To establish their meaning, subtract 96 from the code number given and look in the table above for the definition of the intermittent fault.**

E 2
U 2

Electronic Automatic Transmission Control 5-speed (ETC)

Models	Model Years
129 140	1993-96

Connect wires of Scanner as follows

Scanner	Data Link Connector 38-pin
Yellow	Socket 10
Black	Socket 1
Red	Socket 3

Fault Code Table

DTC Readout	Possible Cause of Failure
1	No fault found
2	Engine control module (N3/4) does not match TCM
3	Transmission overload protection switch 4th/5th gear defective
4	CAN data line from EA/CC/ISC control module (N4/1) signal distorted
5	CAN data line from DI control module (N1/3) or HFM control module signal distorted
6	CAN data line signal distorted
7	Valve control valve block (Y3/1y2), open circuit or TCM (N15/1) defective
8	Automatic Transmission Control Module (TCM) (N15/1) defective
9	Valve control valve block (Y3/1y2)
10	Valve control valve block (Y3/1y2), short circuit

MERCEDES-BENZ ACRONYMS

ACRONYM	DESCRIPTION
4MATIC	4 Wheel Drive Transmission Control
A/C (Automatic)*	Air Conditioning (Automatic)
A/C (Tempmatic)*	Air Conditioning (Tempmatic)
AB	Supplemental Restraint System (Airbag)
ABS	Anti-lock Brake System
ADM	Automatic Dimming Inside Rearview Mirror
ADS	Automatic Damping System (Suspension)
AIR	Secondary Air Injection
AP	Accelerator Pedal
AS	Antenna System
ASD	Automatic Locking Differential
ASR	Acceleration Slip Regulation
AT	Automatic Transmission
ATA*	Anti-theft Alarm System
BA	Backup Assist
BARO	Barometric Pressure
BCAPC	Barometric Pressure-charge Air Pressure Compensation
BM*	Base Module (Master ECU Controller)
BPC	Barometric Pressure Compensation
CA	Closing Assist
CAN	Controller Area Network
CC*	Cruise Control (Tempomat)
CDC	Cd Changer
CF	Convenience Feature
CFI	Continuous Fuel Injection
CKA	Crank Angle
CKP	Crankshaft Position
CL	Central Locking
CLUS	Instrument Cluster
CMP	Camshaft Position
CST*	Cabriolet Soft Top
CTEL	Cellular Telephone
CTP	Closed Throttle Position (Idle)

MERCEDES-BENZ ACRONYMS

DFI*	Electronic Distributor-type Fuel Injection
DI*	Distributor Ignition System
DM (USA)	Diagnostic Module (Emissions)
DTC	Diagnostic Trouble Code
EA*	Electronic Accelerator
EAG	Electronic Automatic Transmission Control
EATC*	Electronic Automatic Transmission Control
ECL	Engine Coolant Level
ECT	Engine Coolant Temperature
EDC	Electronic Diesel Control
EDR	Electronic Diesel Regulation
EDS	Electronic Diesel System
EDW*	Anti-theft Alarm System
EFP*	Electronic Accelerator
EGR	Exhaust Gas Recirculation
EGS	Electronic Transmission Control
EIFI	Electronic In-line Fuel Injection
EMSC	Electric Mirror, Steering Column Adjustment, Heated Mirrors
ERE*	Electronic In-line Fuel System
ESA	Electric Seat Adjustment
ESC	Electric Steering Column Adjustment
ESCM	Engine System Control Module
ESP	Electronic Stability Program
ETC	Electronic Transmission Control
ETR	Emergency Tensioning Retractor
ETS	Electronic Traction System
EVAP	Evaporative Emission Control System
EVE	Electronic Distributor-type Fuel Injection
EZL	Distributor Ignition System
FAN	Fanfare Horns
FFS	Frame Floor System
FP	Fuel Pump
GM	Base Module (Master ECU Controller)
HAU	Automatic Heater

MERCEDES-BENZ ACRONYMS

HCS	Headlamp Cleaning System
HEAT	Automatic Heater
HFM	Hot Film Engine Management
HFS	Hands Free System
HHT	Hand Held Tester
HORN	Horn Signal System
HS	Heated Seats
IAT	Intake Air Temperature
IC	Instrument Cluster
IDC	In Dash Controller
IFI*	Electronic In-line Fuel System(diesel)
IFZ	Infrared Remote Central Locking (IRCL)
IRCL*	Infrared Remote Central Locking
ISC*	Idle Speed Control
KE	Continuous Injection System (CIS)
KFB	Convenience Feature
KI	Instrument Cluster
KLA	Air Conditioning
KS	Knock Sensor
KSS	Knock Sensor System
LH-SFI	LH Sequential Fuel Management Bank 1 (1-6 Cylinders)
LH2-SFI	LH Sequential Fuel Management Bank 2 (7-12 Cylinders)
LLR	Cruise Control
LS	Loudspeaker System
MAF	Mass Air Flow
MAP	Manifold Absolute Pressure
ME	Motor Electronics
MIL	Malfunction Indicator Lamp (Check Engine)
MT	Manual Transmission
MVA	Manifold Vacuum Assist
O2S	Oxygen (O2) Sensor
OBD	On-board Diagnostics
OC	Oxidation Catalytic Convertor
OSB	Orthopedic Seat Backrest

MERCEDES-BENZ ACRONYMS

PL	Power Lock
PML	Speed-sensitive Power Steering
PMP	Partial Intake Manifold Preheater
PNP	Park/neutral Position
PS	Power Steering
PSE	Pneumatic System Equipment
PTS	Parktronic System
RB*	Roll Bar Control
RD	Radio
REST	Residual Engine Heat Utilization
RHR	Retractable Rear Head Restraints
RHS	Rear Heated Seats
RPM	Revolutions per Minute (Engine Speed)
RST*	Roadster Soft Top
RTG	Retractable Trunk Lid Grip
RV	Roadster Soft Top
SBE	Seat Belt Extender
SLO	Starter Lock-out
SMS	Service Microfiche System
SPS	Speed-sensitive Power Steering
SRS	Supplemental Restraint System (Airbag)
STH	Stationary Heater
TB	Throttle Body
TC	Turbo Charger
TCM	Transmission Control Module
TD	Speed Signal (Time Division) (EZL)
TDC	Top Dead Center
TIC	Transistorized Ignition Control
TN	Speed Signal (EZL/AKR)
TRAP	Trap Oxidizer
TS	Towing Sensor
TVV	Tank Ventilation Valve
TWC	Three Way Catalytic Convertor
ÜRB	Roll Bar Control

MERCEDES-BENZ ACRONYMS

VAF	Volume Air Flow
VSS	Vehicle Speed Signal
WOT	Wide Open Throttle (Full Load)

* USA Acronym only.

MERCEDES BENZ - USA MODEL IDENTIFIER

MODEL	YEARS	CHASSIS	ENGINE	TRANSMISSION	STEERING
190C	1961-65	110	121.924	GA190C	LO 1
190D 2.2	1984-85	201.122	601.921	717.4/722.4	LO75Z/68
190D 2.5	1986-89	201.126	602.911	717.4/722.4	LS68
190D 2.5 TURBO	1987-	201.128	602.961	722.4	LS68
190DC	1961-65	110	621.912	GA190DC	LO 1
190E 2.3	1982-86	201.024	102.961 K	717.4/722.4	LS68
190E 2.3	1982-86	201.024	102.985 KE	717.4/722.4	LS68
190E 2.3	1987-93	201.028	102.985 KE	717.413/722.408	765.903
190E 2.3-16v	1984-87	201.034	102.983 KE	717.4/722.4	765.9
190E 2.5-16v	1988-93	201E25	102.983 KE	717.4/722.4	765.9
190E 2.6	1986-93	201.029	103.942 KE	717.432/722.409	765.903
200	1965-68	110	121.940	GA190C	LO 1
200CE	1990-93	124.021	102 KE	717.4/722.400	765.905
200D	1965-68	110	621.918	GA190DC	LO 1
200E	1993	124.021	102.963 KE	717.4/722.400	765.905
200TE	1988-92	124.021	102. KE	717.4/722.400	765.905
220	1967-72	115.010	115.920	722.1	L1Z/LS75/765.706
220B	1959-65	111	180.940	GA220B	LO 1
220D	1967-72	115.110	615.912	722.2	L1Z/LS75/765.706
220SB	1959-65	111	180.941	GA220SB	LO 1
220SE Cabriolet	1951-65	111.023	127.984	GA220SEB	LO 1
220SE Coupe	1959-65	111.021	127.984	GA220SEB	LO 1
220SEB	1959-65	111	127.982	GA220SEB	LO 1
220SEB/C	1951-65	111	127.984	GA220SEB	LO 1
230		123.023	115.954	722.1	765.706
230	1965-66	110	180.945	GA230	LO 1
230	1967-72	114.015	180.954	722.2	L1Z/LS75/765.706
230	1973-78	115.017	115.951	716/722.1	L1Z/765.706
230S	1965-68	111	180.945	GA220B,SB	LO 1

MERCEDES-BENZ ACRONYMS

MODEL	YEARS	CHASSIS	ENGINE	TRANSMISSION	STEERING
230SL	1963-68	113.042	127.981	GA230SL	LO 1
240D	1973-75	115.117	616.916	716/722.1	L1Z
240D	1976-85	123.123	616.912	716.0,.2/722.1	L1Z/765.706
250	1967-69	114.010	114.920	722.2	L1Z/LS75/765.706
250	1970-75	114.011	130.923	722.2	L1Z/LS75/765.706
250C	1969-75	114.023	130.923	722.2	L1Z/LS75/765.706
250D	1986-93	124.125	602.912	722.414	765.904
250S	1963-68	108	108.920	GA230SL	LO 1
250SE	1965-68	108	129.980	GA230SL	LO 1
250SE Cabriolet	1965-68	111.023	129.980	GA230SL	LO 1
250SE Coupe	1965-68	111.021	129.980	GA230SL	LO 1
250SL		113.043	129.982		LO 1
260E	1985-88	124.026	103.940 KE	717.4/722.4	LSC068/O068
280	1972-76	114.060	110.921	722.1	L1Z/LS75/765.706
280C	1972-76	114.073	110.921	716/717/722.1	L1Z/LS75/765.706
280CE	1977-85	123.053	110.984 K	716.0/722.1	765.706
280E	1976-85	123.033	110.984 K	716.0/722.1	765.706
280S	1967-72	108.016	130.920	722.2	L1K/LS75
280S	1972-80	116.020	110.922	716/722.1	765.706
280SE	1967-72	108.018	130.980	722.2	L1K/LS75
280SE	1972-80	116.024	110.985	716.0/722.1	765.706
280SE 3.5 Cabriolet		111.025	116.980		LO 1
280SE 3.5 Coupe		111.024	116.980		LO 1
280SE 4.5	1971-72	108.067	117.984	722.0	LS75
280SE Cabriolet		111.025	130.980		LO 1
280SE Coupe		111.024	130.980		LO 1
280SEL		108.019	130.980	722.2	L1K/LS75
280SEL 4.5	1971-72	108.068	117.984	722.0	LS75
280SL		113.044	130.983		LO 1
300CD	1977-80	123.150	617.912	722.1	765.706
300CD Turbo	1982-85	123.153	617.952	722.3/.4	765.706
300CE	1987-89	124.050	103.983 KE	717.4/722.3	LS68
300CE	1990-92	124.051	104.980 KE	717.4/722.3	LSH068/C068
300CE	1993-96	124.052	104.992 HFM	717.4/722.369	765.908
300CE Cabriolet	1993-96	124.066	104.992 HFM	717.4/722.369	765.904
300D	1975	115.114	617.910	716/722.1	L1Z
300D	1976-85	123.130	617.912	716.0/722.1	765.706

MERCEDES-BENZ ACRONYMS

MODEL	YEARS	CHASSIS	ENGINE	TRANSMISSION	STEERING
300D 2.5Turbo	1988-93	124.128	602.962	717.4/722.4	765
300D Turbo	1982-85	123.130	617.952	722.3/.4	765.706
300D Turbo	1985-	124.133	603.960	722.3	LS68
300E	1985-92	124.030	103.983 KE	717.4/722.3	765
300E	1993-96	124.032	104.992 HFM	722.369	765.904
300E 2.6	1985-92	124.026	103.940 KE	717.4/722.4	765
300E 2.8	1985-93	124.028	103.942 KE	717.4/722.4	765.904
300E 4MATIC	1987-93	124.230	103.985 KE	717.4/722.342	765.906
300SD Turbo	1978-80	116.120	617.950	722.1	765.706
300SD Turbo	1981-85	126.120	617.951	722.3	765.706
300SD Turbo	1992-93	140.134	603.971	722.367	765.940
300SDL Turbo	1985-88	126.125	603.961	722.3	765.706
300SE	1961-65	112	189	GA300SE,-E,-EH	DB
300SE	1985-92	126.024	103.981 KE	717.4/722.351	765.706
300SE	1992-93	140.032	104.990 KE	722.502	765.940
300SE/C	1961-67	112	189	GA300SE,-E,-EH	DB
300SEB	1965-72	108	189	GA300SE-EH	DB
300SEL		109.016	130.981		
300SEL	1966-68	109	189	GA300SE-EH	DB
300SEL	1985-92	126.025	103.981 KE	717.431/722.319	765.706
300SEL 3.5	1969-72	109.056	116.981	722.2	LS75
300SEL 4.5	1971-72	109.057	117.981	722.0	LS75
300SEL 6.3	1967-72	109.018	100.981	K4A050	LS75
300SL	1988-93	129.061	103 KE	722.500	765.907
300SL-24	1990-92	129.061	104.981 KE	722.500	765.907
300TD	1978-85	123.190	617.912	716.0/722.1	765.706
300TD Turbo	1981-84	123.193	617.952	722.3/.4	765.706
300TD Turbo	1985-	124.193	603.960	722.3	LS68
300TE	1985-93	124.090/.092	103.983 KE	717.4/722.369	765.904
300TE 4MATIC	1987-93	124.290	103.985 KE	717.4/722.342	765.906
350SD Turbo	1989-6/91	126.134	603.970	722.361	765.706
350SDL Turbo	1989-6/91	126.135	603.970	722.361	765.706
380SE	1985-89	126.032	116.963	722.3	765.706
380SEC	1985-	126.043	116.983	722.3	765.706
380SEL	1980-84	126.033	116.961	722.3	765.706
380SEL	1985-89	126.033	116.963	722.3	765.706
380SL	1980-89	107.045	116.960	722.3	765.706

MERCEDES-BENZ ACRONYMS

MODEL	YEARS	CHASSIS	ENGINE	TRANSMISSION	STEERING
380SLC	1980-89	107.025	116.960	722.3	765.706
400E	1990-93	124.034	119.975 LH	722.354	765.921
400SE	7/91-	140.042	119.971 LH	722.3	
400SEL	1992-93	140.043	119.971 LH	722.366	765.940
420SEL	1985-6/91	126.035	116.965 KE	722.351	765.706
450SE	1972-73	116.032	117.983	722.0	765.706
450SE	1974-80	116.032	117.986	722.0	765.706
450SEL	1972-73	116.033	117.983	722.0	765.706
450SEL	1974-80	116.033	117.986	722.0	765.706
450SL	1971-74	107.044	117.982	722.0	765.706
450SL	1975-80	107.044	117.985	722.0	765.706
450SLC	1971-74	107.024	117.982	722.0	765.706
450SLC	1975-80	107.024	117.985	722.0	765.706
500E	1993	124.036	119.974 LH	722.365	765.921
500SEC	-1992	126.044	117.965 KE	722.356	765.706
500SEC	1992-93	140.070	119.970 LH	722.370	765.940
500SEL	1985-6/91	126.037	117.963 KA	722.311	765.706
500SEL	1992-93	140.051	119.970 LH	722.370	765.940
500SL	1990-92	129.066	119.960 KE	722.3	LSG068
500SL	1992-93	129.067	119.972 LH	722.364	765.907
560SEC	1985-	126.045	117.968 KE	722.350	765.706
560SEL	1985-	126.039	117.968 KE	722.350	765.706
6.9	1975	116.036	100.985	722.0	765.706
600	1964-	100.012	100.980	K4A050	LS75
600	1964-	100	100	GA600	DB
600	1990-93	129.076	120.981 LH	722.3	LSG068
600 Long 4 Door	1964-	100.014	100.980	K4A050	LS75
600 Long 6 Door	1964-	100.016	100.980	K4A050	LS75
600SEC	1992-93	140.076	120.980 LH	722.362	765.940
600SEL	1992-93	140.057	120.980 LH	722.362	765.940
600SL	1990-93	129.076	120.981 LH	722.362	765.907
C180	1994-	202.018	111.920 PMS	717.416/722.421	765.950
C200D	1994-	202.120	601.913	717.416/722.425	765.950
C220	1994-96	202.022	111.961 HFM	722.423	765.950
C220D	1994	202.121	604.910 EVE	717.416/722.426	765.950
C230K	1997-99	202.023	111.974 ME 2.1	722.600	765.950
C250D	1994	202.125	605.910 ERE	717.417/722.427	765.950

MERCEDES-BENZ ACRONYMS

MODEL	YEARS	CHASSIS	ENGINE	TRANSMISSION	STEERING
C280	1994-96	202.028	104.941 HFM	722.424	765.950
C280	1997-	202.028	104.941 HFM	722.604	765.950/765.922
C280	1998-99	202.029	112.920 ME-2.0	722.606	765.950
C36AMG	1996-97	202.028	104.941 HFM	722.604	765.922
C36AMG	1996-96	202.028	104.941 HFM	722.424	765.922
C43 AMG	1998-99	202.033	113.944 ME 2.0	722.631	765.
CL500 (Coupe)	1996-97	140.070	119.980 ME 1.0	722.620	765.940
CL500 S500 (Coupe)	1996-97	140.070	119.970 ME 1.0	722.620	765.940
CL600 S600	1996-98	140.076	120.982 ME	722.621	765.940
CLK320 (COUPE)	1998	208.365	112.940 ME 2.0	722.607	765.952
E250D	1992-94	124D25	602		
E250D Turbo	1988-95	124D25	602		
E280	1994-95	124.028	104.942 HFM	722.433/722.504	765.904
E300	1994-95	124.230	103.985 KE	722.342	765.906
E300 TURBO DIESEL	1998	210.025	606.982	722.608	768.002
E300D	1994-95	124.131	606.910	722.4/722.435	765.904
E300D TURBO	1994-95	124.133	603.960	722.4/722.317	765.904
E300D	1997-99	210.020	606.912	722.600	768.003
E300TD TURBO	1994-95	124.193	603.960	722.4/722.317	765.904
E320	1994-95	124.032/052	104.992 HFM	722.369	765.904
E320	1996-97	210.055	104.995 HFM	722.605	768.903
E320	1998-99	210.065/082/265/282	112.941 ME 2.0	722.607/664	768.002/006
E420	1994-95	124.034	119.975 LH	722.366	765.921
E420	1996-97	210.072	119.985 ME 1.0	722.625	768.003
E430	1998-99	210.070	113.940 ME 2.0	722.623	768.002
E500	1994-95	124.036	119.974 LH	722.370	765.921
E55 AMG	1999	210	113? ME 2.0	722.6	
ML320	1998-99	163.154	112.942	722.662	ZF.970.402
ML430	1999	163.1	113. ME 2.0	722.6	ZF.970.402
S320	1997-98	140.033 (Long)	104.994 HFM	722.605	765.940
S320	1997-98	140.032	104.994 HFM	722.605	765.940
S320	1994-96	140.032	104.994 HFM	722.508	765.940
S320	1996	140.033 (Long)	104.994 HFM	722.508	765.940
S350 Turbo Diesel	1994-95	140.134	603.971	722.367	765.940
S420	1994-95	140.043	119.971 LH	722.366	765.940
S420	1996-97	140.043	119.981 ME 1.0	722.622	765.940
S430	1998	208.	113. ME 2.0	722.6	

MERCEDES-BENZ ACRONYMS

MODEL	YEARS	CHASSIS	ENGINE	TRANSMISSION	STEERING
S500 (Coupe)	1994-95	140.070	119.970 LH	722.3	765.940
S500	1994-95	140.051	119.970 LH	722.370	765.940
S500	1996-98	140.051	119.980 ME 1.0	722.620	765.940
S600	1996-97	140.057	120.982 ME 1.0	722.621	765.940
S600	1994-95	140.057	120.980 LH	722.362	765.940
SL320	1994-96	129.063	104.991 HFM	722.507	765.907
SL320	1997	129.063	104.991 HFM	722.605	765.907
SL500	1994-95	129.067	119.972 LH	722.364	765.907
SL500	1996-99	129.067	119.982 ME 1.0	722.620	765.907
SL600	1994-95	129.076	120.981 LH	722.362	765.907
SL600	1996-98	129.076	120.983 ME 1.0	722.621	765.907
SLK230	1998-99	170.447	111.973 ME 2.1	722.605	765.951
SLK430	1999	170.4	113. ME 2.0	722.6	

Mercedes production is generally from July to June. This means that the 1994 model year has production dates 7/93-6/94.

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