



Automotive Diagnostic Scanner

VOLVO **INSTRUCTION MANUAL**



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***NOTICE**

The specifications, information, and illustrations contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

This instruction manual tells you how to use the Scanner to perform diagnostic tests and find possible locations of vehicle problems. It does NOT tell you how to correct the problems. Consult the manufacturer vehicle service manual or other publication for repair instructions.

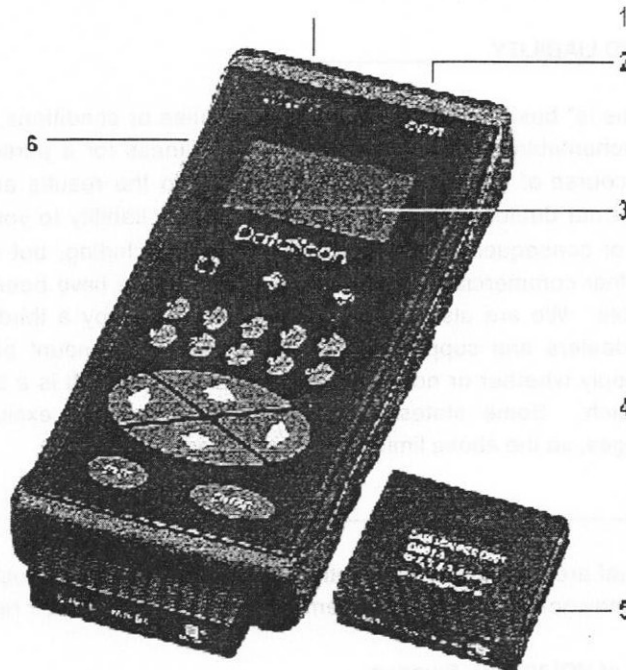
To take full advantage of the Scanner, you should be knowledgeable and well trained in each of the vehicle computer control systems described in this manual.

Service data that appear to be non-functional on some vehicles may be due to vehicle manufacturing design changes. Always refer to the manufacturers specification for the month and year of production of the model in question.

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SCANNER FEATURES

1. FEATURES



- | | |
|--------------------|---|
| 1 DB25 Port | Vehicle Diagnostic Cable Connection. |
| 2 DB9 Port | Connects to IBM Type Personal Computer or Serial Printer (Optional Use). |
| 3 Display Screen | Displays data and messages to the user. |
| 4 Keypad | Enter commands and data. |
| 5 Memory Module | Contains the vehicle diagnostic software program. (Make sure the arrow on the module is facing up as it is inserted. Push the module in until the module snaps completely into place) |
| 6 Contrast Control | Screw to adjust screen contrast. Remove rubber boot to access. |

2.KEYPAD

◀ ▶ Left and Right arrow keys. Move through test functions, vehicle models and systems to the next page or last page.

▲ ▼ Up and Down arrow keys. Select test functions, vehicle models and systems in the page.

Enter Enters commands in to the scanner.

Exit Interrupts the current procedure and returns to the previous menu or test mode selection.

0 ~ 9 Digits 0 through 9. Select the functions or vehicle models, systems by the numbered keys.

3. INDICATOR LIGHTS



Power indicator (Red LED light)



Data link indicator (Green LED light)

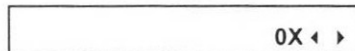
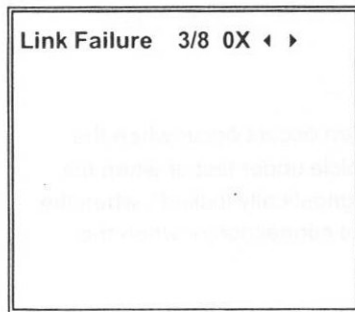


Data link indicator (Yellow LED light)

!!! If the diagnostic link circuit is shorted to ground or a control unit is faulty, the green or yellow LED light will turn on steadily when the scanner is connected to the vehicle diagnostic connector.

4. ICONS

Some displays include icons on top line of the screen that give you extra information.

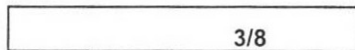


Page keys

When either of these icons ◀ ▶ appears in the top line of the screen, there is more information available. Press the ◀ (left) or ▶ (right) arrow key to view this additional information.

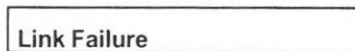
0 indicates you may press the ENTER key.

X indicates that you may press the EXIT key.



Page information

Display current page number and total number of pages.



Link Failure and No Connection messages

- Check that the Ignition key is on (KOEO) or the Engine is running (KOER).
- Check power supply to the Scanner (10.5 to 14.5 Volts).
- Check for correct connection to the vehicle diagnostic connector.
- Check for short circuit in the vehicle diagnostic connector.
- Check that this function is available for this vehicle system.
- Check that the vehicle is equipped with the system under test.

A faulty control unit can interrupt the diagnosis of other control units. Try removing other related control units from the CAN bus until the control unit under test responds.

Communication Troubleshooting

1. If the scanner can't communicate with the control unit, please check the following:

- Does the car have this system installed.
- Ignition ON?
- Is the diagnostic connection okay? Check for a damage to the connector, pin drop outs, broken wires or corrosion.
- Check power supply at control unit in accordance with the factory circuit diagram.
- Is the control unit installed properly?
- If the control unit is new, check to see that the control unit was coded properly.
- If the car has been jumped or had a power failure, disconnect the control unit and reconnect after 5 minute to reinitialize the controller.

If the diagnostic circuit is shorted to ground or a faulty control unit is in vehicle, the green or yellow LED light on the scanner will remain on steadily when the scanner is connected to the vehicle diagnostic connector.

2. A faulty control unit can interrupt the diagnosis of other control units. Try removing other related control units from the CAN bus until the control unit under test responds.

CS2000 Internal Error Codes

10006 Communication received from ECU is not understandable. This error most often occurs occur when the diagnostic line is held at a voltage different than that which is normal for the vehicle under test or when the information is distorted. This can caused by a faulty ECU, an ECU which is "diagnostically locked", when the contacts to the diagnostic connector are dirty or corroded causing an incomplete connection or when the diagnostic line is shorted.

Recommendation: Clean contacts, disconnect ECU from power and reconnect. Check for short to ground at pin 7 of J1962 socket.

Link Failure - Communications received from ECU suddenly ceased or did not meet CRC checksum. See above.

If after checking all of the above, communications is still not established call

Baum Tools Technical Support hotline

800-804-1002

or

email: tech@baumtools.com

Volvo Operation of OB91-6 Memory Module

1. Setting Up:



Module Insertion

Insert the OB91-6 memory module into the base of the scanner. Make sure the arrow on the module is facing up as it is inserted. Push the module until the module snaps into place completely. If the module is inserted correctly, you will feel it click into place.



Cable Hook up

Attach DB25-pin of the diagnostic cable to the Scanner adapter port. Attach the other end of the diagnostic cable to the vehicle diagnostic connector.



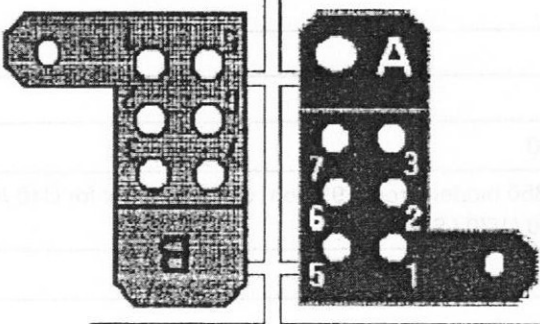
Part No. 91-C6
Volvo AB Diagnostic Cable (1988-95)



Vehicle Diagnostic Connector Location

Volvo 1989-95

The AB diagnostic connector is located in the engine compartment behind the drivers side strut tower. Note that some 1994-95 models do not have this connection.

	Socket	System
	A1	Automatic Transmission
	A2	Fuel Control System
	A3	ABS (Anti lock Brake System)
	A5	Turbo Control System
	A6	Ignition Control System
	A7	Combined Instrument
	B1	Climate Control
	B2	Cruise Control
	B5	SRS (Airbag)
	B6	Power Seat

Volvo 1994-on Beginning with some 1994 850 Turbo Volvos, the diagnostic connection has moved to a J1962 (OBD-II) 16 pin socket in the passenger compartment center console in front of the shift. The adapter OB91-C4-16H is designed to allow access to these vehicles.



OB91-C4-16H

The systems before the 1996 model use different channels in the OBD-II 16 pin socket. Their definitions are found in the chart below. Jumper using the **YELLOW** cable from the **YELLOW** dot to the appropriate pin under test.

Volvo 1995 and Later Models with J1962 (OBD-II Socket)

Pin No	System	Application Note
1	Ignition (EZ116K)	940 (thru 1995)
2		
3	Fuel Injection LH2.3, LH3.2 & M 4.3	800 Series / 940 (thru 1996) (Non Turbo models.)
6	Climate Control (A/C)	800 Series (thru 1995)
7	Engine Control Systems and all other digital systems from 1996-1999	- For all systems on C40 / S40 / V40 / S70 / V70 to 1998, except Cruise Control. - For all systems on 800 Series, except Climate Control / Cruise Control. (some '96 models are on pin 3) - For all systems on S90 / V90, except ABS / Cruise Control.
8		
9		
10		
11		
12	ABS	900 / S90 / V90
13	Climate/Cruise Control	All equipped 850 models from 1996 on. Cruise control for C40 / S40 / V40 / S70 / V70 / S90 / V90
14		
15		

Examples: To test Engine equipped with Motronic 4.4 injection jump from yellow dot to pin 7. Then perform engine diagnostic. To test Cruise Control jump from yellow dot to pin 13. Then perform Cruise Control diagnostic.

2. Starting Diagnosis

A) Ignition ON or Engine at idle

B) Vehicle Selection

Vehicle Select	
1	200 Series
2	400 Series
3	700 Series
4	800 Series
5	900/S90/V90
6	S40/V40
7	S70/V70

C) System Selection

Example screen:

System Select	
1	Service
2	Engine
3	Transmission
4	Electrical
5	Brakes
6	Body
7	Cruise Control

Once you have chosen the appropriate system to test just follow the directions on the screen.

3. Diagnostics

Data Stream

Displays the sensor signals and output information to and from the electronic control unit (ECU).

Read Fault Code

The scanner reads fault codes directly from the electronic control unit's memory and displays a short description of each code. When there is no fault in the system, the message "No fault stored" will be displayed on the screen.

Clear Fault Code

After repairs have been carried out. Select the **CLEAR CODE** function to erase all of the fault codes from the control unit memory.

Diagnostics Notes:

Engine

Some 1996 850 Turbo models are equipped with M4.3 injection systems. If a 1996 850 Turbo does not communicate using the standard setup to pin #7 for Motronic 4.4, switch to pin #3 and use Motronic 4.3.

ABS

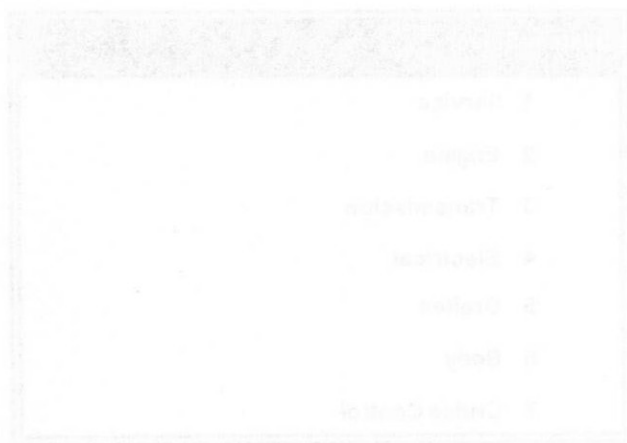
Failure to communicate may occur when the key is in the KOEO position. Try running the vehicle. Also the ABS, EDS and TRACS lights must all be out for the diagnostic computer to function. If the any or all lights are on while the engine is running and the car is at rest, a faulty power supply may be the cause.

Transmission

Many 1996 and later faults may be contained in the engine computer even though a Transmission Light is illuminated.

4. Identification/Rectification of Faults

Record the fault codes and pertinent information from the Data Stream for these components. Clear all fault codes. Perform a test drive to reproduce the fault and rerun the diagnosis with the scanner. Verify all codes and carry out the repair procedures as outlined in the factory service and repair literature.



Volvo Service Reminder Lamp Reset (SRL) 1992-2002

850 1992-94

The 850s are reset at the engine compartment Diagnostic Output Unit A by using a built-in jumper wire connected to position 7.

1. Switch on ignition
2. Briefly press the activation button four times and wait for the light to go out.
3. Press the button once and wait for the light to go out.
4. Press the button 5 times and wait for the light to go out
5. Press the button once more and the light should flash quickly.
6. The Service Reminder Lamp should be now out.

850 1995

Type 1: The base 850 incorporates the Yazaki instrument cluster. The SRL is reset by removing a rubber plug in the cluster glass cover, at the lower left of the speedometer. Then, insert a small screwdriver through the hole and push the reset button in the cluster face.

Type 2: The 1995 850 GLT and Turbo models have a VDO instrument cluster, with the Turbo version having a Turbo Boost indicator at the upper left. On this system, the SRL is reset through the engine compartment Diagnostic Output Unit A, as in previous years.

For all 1996 and later vehicles **CLOSE DOORS BEFORE ATTEMPTING RESET.**

850 1996-98

850 - The SRL is reset through the Diagnostic Link Connector (DLC) located above the gearshift lever using a Volvo Scan Tool, **Baum Tool #V2001 or CS2000/iScan**

V70, V70XC, C70 Coupe & Convertible - 1998, 1999, 2000

To reset the service reminder indicator (SRI) carry out the procedure as follows:

- Ignition off.
- Press in trip odometer reset button.
- Switch on ignition.
- Continue pressing in the reset button for 10 seconds.
- Release reset button within 4 seconds.

S60, S70, V70, V70XC - 2001, 2002

S80 - 1999, 2000, 2001, 2002

Lamp lights constantly for 120 seconds when ignition starts.

Note! If the lamp flashes it is probably because none of the service parameters have been programmed.

To reset the service reminder lamp to zero do the following:

- Ignition position I (Radio position).
- Press trip meter reset button.
- Ignition position II.
- When the trip meter reset button has been pressed for 10 seconds, the SRL lamp starts to flash.
- Release the trip meter reset button within 5 seconds. The instrument produces a sound when resetting has been done successfully.

Note! If the trip meter reset button is not released within 5 seconds, the lamp will not reset until it stops flashing.

Proceed as follows to reset the service reminder indicator (SRI):

- Ignition off
- Press and hold in the reset button for the trip odometer
- Ignition on
- The service reminder indicator (SRI) starts flashing when the reset button for the trip odometer has been pressed for 10 seconds
- Release the reset button for the trip odometer within 4 seconds. The instrument gives an audible signal when the reset has succeeded. The SRI indicator lamp goes out.

Note! If the reset button for the trip odometer is not released within 4 seconds, the light is not reset. However it will stop flashing.

Volvo Application Chart v1.16

R-Read Codes C-Clear Codes D-Data Stream A-Activate		200 Series	400 Series	700 Series	800 Series to 1995	800 Series 1996 on	900 Series to 1995	900 Series 1996 on	40 series	70 Series	80 Series	90 Series
System	Version											
Engine	Motronic 1.8						R-C					
	Motronic 4.3 (1993-98)				R-C	R-C						
	Motronic 4.4 (1996-98)					R-C-D		R-C-D		R-C-D		R-C-D
	LH 2.4	R-C		R-C			R-C	R-C (940 only)				
	LH 3.1	R-C										
	LH 3.2				R-C							
	Fenix 3B		R-C									
	Fenix 5.2				R-C	R-C						
	REGINA			R-C			R-C					
	Diesel MSA 15.7					R-C-D						
Electrical	DSA								R-C-D	R-C-D		
	Ignition - EZ 116K	R-C		R-C			R-C	R-C (940 only)				
	Ignition - EZ 129K				R-C							
	REX-I			R-C			R-C					
	Cruise Control		R-C	R-C	R-C	R-C	R-C	R-C	R-C	R-C		R-C
	Turbo Control						R-C					
	Service Reminder Light*			Mechanical	Mechanical	Program Reset		Mechanical		Program Reset*		
	Instrument Cluster			R-C	R-C	R-C-D			R-C-D	R-C*		
	Immobilizer					R-C-D		R-C-D	R-C-D			R-C-D
Transmission	AW 30-40						R-C	R-C-D				R-C-D
	AW 30-43						R-C	R-C-D				R-C-D
	AW 50-42			R-C	R-C-D	R-C-D			R-C-D	R-C-D		
	AW 50-42 TDI					R-C-D						
Brakes	ABS		R-C	R-C		R-C-D	R-C	R-C	R-C-D	R-C-D		R-C
Body	Air Bag		R-C									
	Airbag 2.2/2.3			R-C			R-C					
	Airbag 6.2					R-C-D		R-C-D	R-C-D	R-C-D		R-C-D
	Climate Control			R-C		R-C			R-C	R-C		
	Keyless Entry								R-C-D	R-C-D		
	Power Seat			R-C-A			R-C-D					
	Left Seat					R-C-D		R-C-D		R-C-D		R-C-D
	Right Seat					R-C-D		R-C-D		R-C-D		R-C-D

* To model 1998 only. Some 1998 and all 1999 and later models have mechanical reset using Odometer trip reset button.

A catalog of tools for all models is available by calling

Baum Tools Unlimited Inc.

800-848-6657 USA/Canada

941-927-1414 International

941-927-1612 Fax

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