# Preface

The Multi-Tester Pro is a microcomputer-based diagnostic tool for quick and simple fault finding on different electronic systems in the vehicle.
The equipment is very simple to use and shows all information in plain text. The compact format enables on-road testing.
The system is configured for testing specific vehicles by using special program cartridges and adapters.

# Contents

# Introduction

## About the manual

This user manual describes how the Multi-Tester Pro handset is used. The manual contains the following sections:

- Presentation of the Multi-Tester Pro
  - Basic equipment
  - Connections
  - The display and the keys
- Connection of the equipment
- Start of the program
- Navigation
- Best diagnostic practices
- Application specific:
  - Adapters
  - Diagnostic connector locations
  - Service light reset
  - Blink codes
  - Key programming
- Connection to a PC
- Technical data for the Multi-Tester Pro

For each individual application you will find the location of the diagnostic connector, blink codes, and service light reset.

## Technical Support Services

If you need additional information or help during installation or normal use of this product, please contact your retailer. Your retailer will have the most current information about your product.
From our online support page you can find answers to many commonly asked questions, updates and technical bulletins that can usually address most issues that users may have. If you are still unable to find a solution to your problem, you can send e-mail to our technical support department.

# Service & Repair

To obtain service, contact your retailer or if you purchased the product direct from Autodiagnos contact the Technical Support Department by e-mail at support@autodiagnos.com. You will be given a Returned Merchandise Authorization number ("RMA") to help Autodiagnos keep track of the returned product. Once you have received your RMA number, send the product to Autodiagnos.

For warranty service include proof of the date of purchase (customer invoice).

IMPORTANT: The RMA number should be visible on the outside of the package.

# Presentation of the Multi-Tester Pro

The Multi-Tester Pro is able to perform efficient fault diagnostics on different types of control systems, including engine management, ABS, Airbag, SRS and many others.

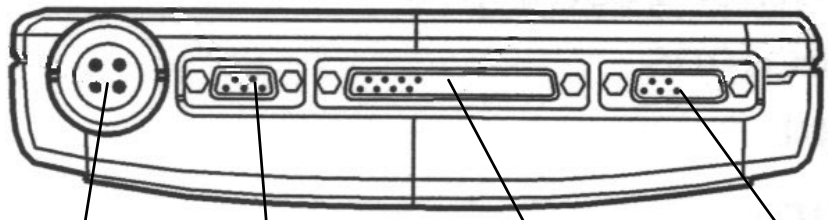
The Multi-Tester Pro is portable and may be used for on-road testing. Data collected during a test session may be saved in the instrument for further analysis and also transferred to a PC for future reference and for repair documentation.

## Basic equipment

Depending on what kit you've ordered, the following parts will be supplied:

- Multi-Tester Pro
- Battery cable
- Extension cable 15/15
- Cable 9 pin for PC connection
- 1 ProFile CDRom

# Connections



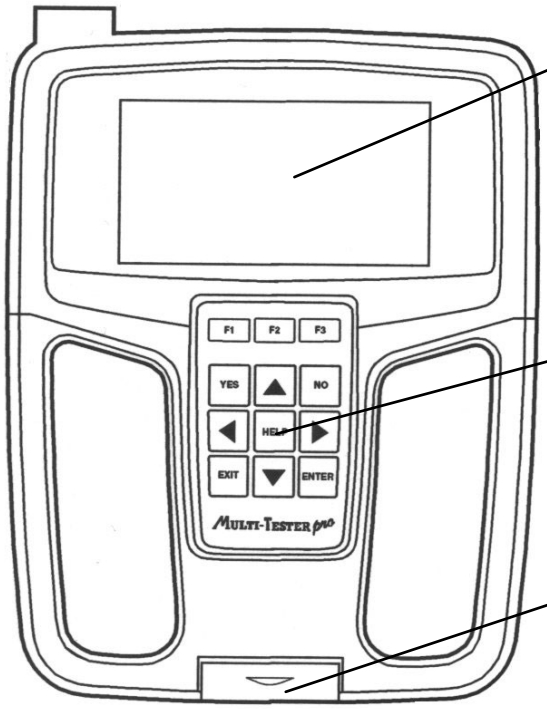
Connection to Vehicle Battery – Only for use with Parallel Adapters or ProFile.

Connection to P.C.

Connection to Parallel Adapters

Connection to Vehicle Serial Interface for Serial Applications.

# The display and the keys

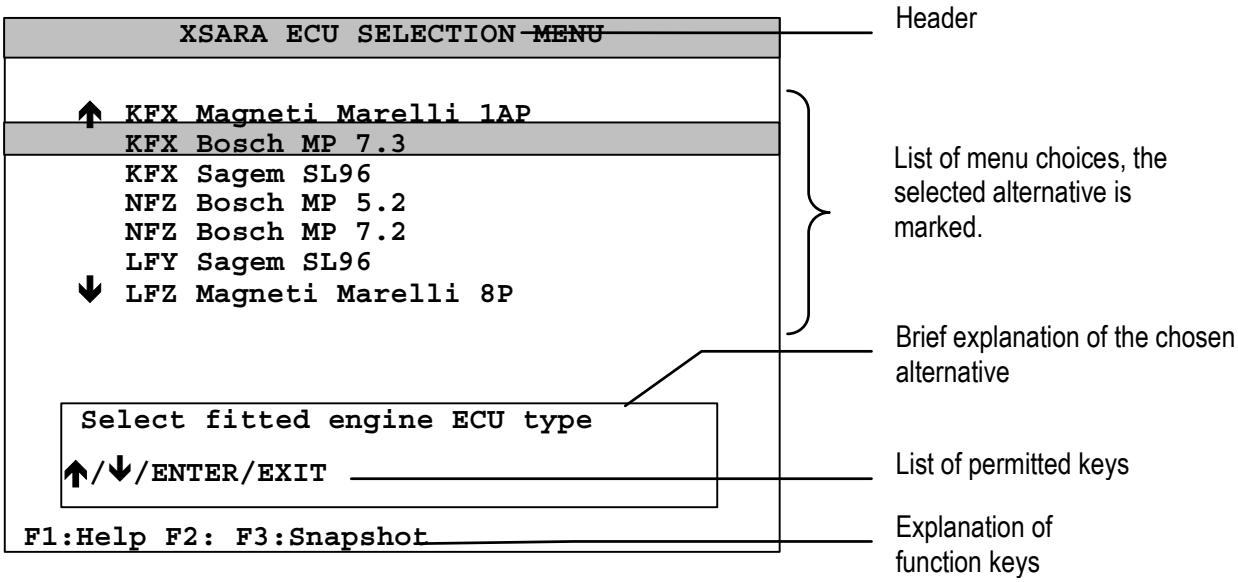



**Display**: Backlit with graphics & text. Can show text with graphs and pictures. The lighting switches off automatically after 5 minutes if no key is pressed. This is to extend the lifespan of the back-lighting. Press any key to turn the display on again.

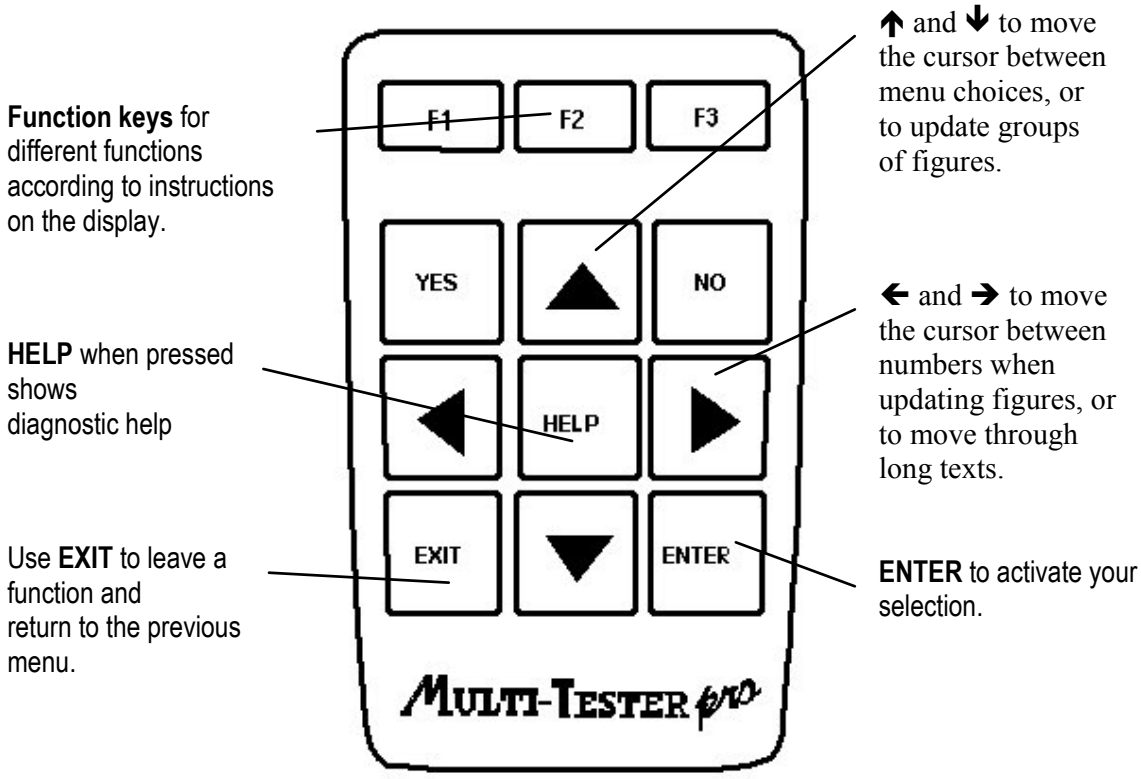
**Keyboard:** 12 membrane type keys. Keys not in use for a particular phase are blocked (i.e do not work). When blocked keys are pressed, the MTPro hand set emits a long beep.

**Cartridge:** Contains the program for the desired applications.

# Typical Screen Layout

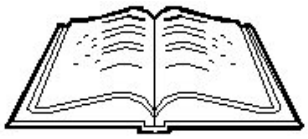



# Keypad Operation



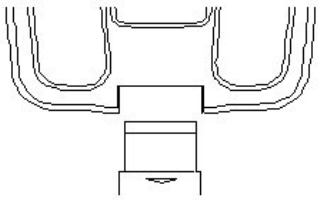
# Connection of the equipment

1. **Locate the diagnostic connector** on the vehicle. Common locations for each application are described in this manual.



2. **Insert the program cartridge into the instrument.** Insert the program cartridge carefully to ensure it fits properly.

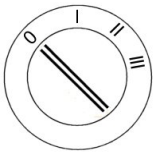
   To avoid damage, always disconnect power to the Multi-Tester Pro before inserting the cartridge in place



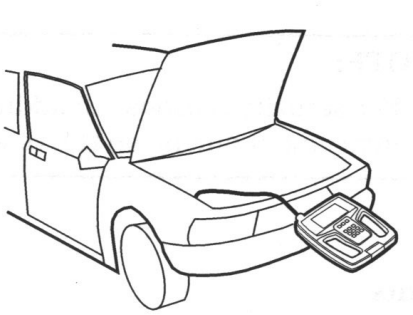
3. **Connect the serial cable** to the Multi-Tester pro, if necessary using an extension cable 15/15.

4. **Connect an adapter** if necessary. Application specific adapters are described in this manual.

5. **Ensure the ignition is off.**



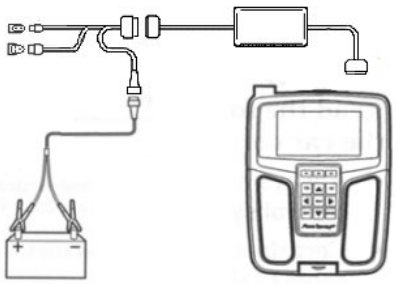

6. **Connect the serial cable** to the diagnostic connector of the car.



7. **Connect to power supply.**
   Connection to the 16 pin diagnostic socket on the vehicle will provide power to the Multi-Tester Pro. On some older vehicles where serial connection is made through another adapter, a separate connection to the vehicle battery may be required.

   The connection for each adapter is described in this manual.

   If the battery cable is to be used, connect it to the battery, first with the black clamp onto negative terminal, and then with the red one to the positive terminal.



# Start of the equipment

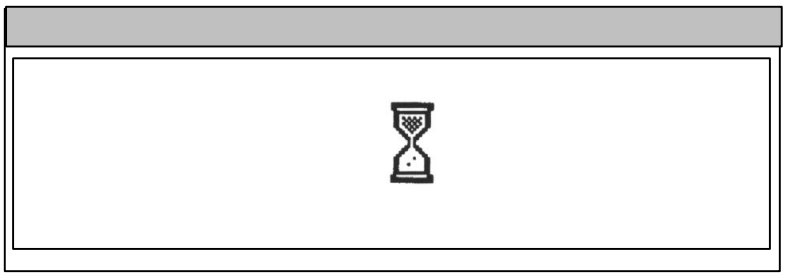
The program starts automatically each time the Multi-Tester Pro is connected to the diagnostic socket.
The Multi-Tester Pro executes a self-diagnosis routine when it boots up, then displays the current versions of hardware and software in use.

Every single application is based on the same principle and the navigation is explained in the following pages.

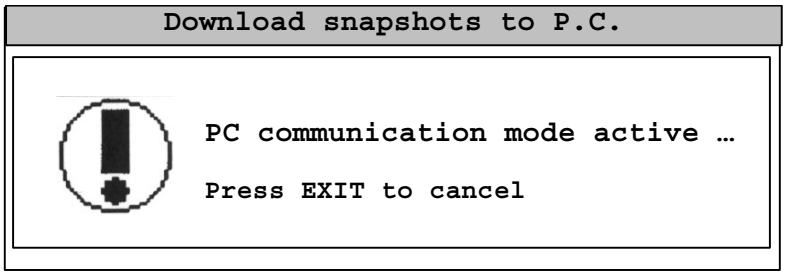
For safety reasons, an additional person is required for operating the instrument during on -road testing.

# Navigation

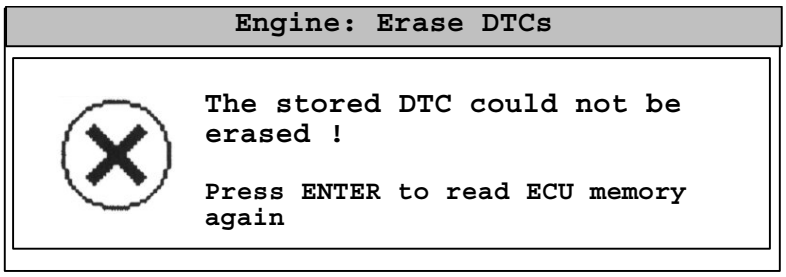
Icons are shown on the screen to indicate the type of information displayed:



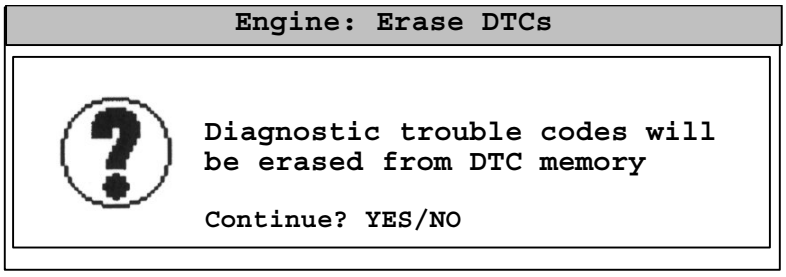
Shown while the equipment is busy



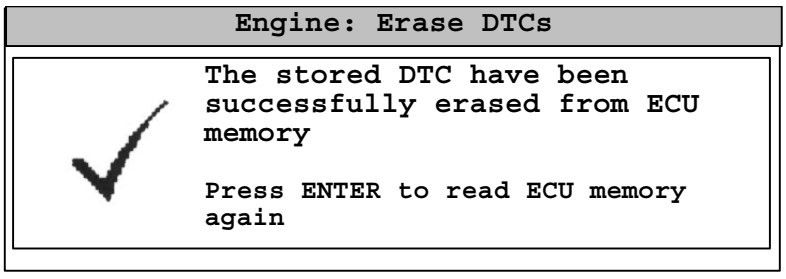

Information message




Fault message




Question

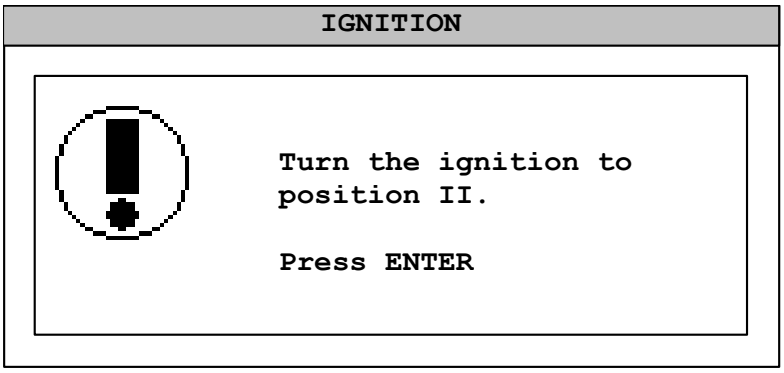



Acknowledgment of command

Each car manufacturer has its own specific menu. In most cases you will be asked a series of questions to narrow down the specific system you want to diagnose.
Use ↑ and ↓ to move the cursor between menu choices, then press ENTER.

In some instances you may be presented with a choice of different ECU's under the same engine code. It is important you select the correct ECU fitted to the vehicle. In such cases we recommend that you physically identify the ECU before proceeding. Selecting the wrong ECU could result in the Multi-Tester Pro giving incorrect information or not functioning properly.

When the Multi-Tester Pro has identified the correct system, you will be asked to turn the ignition on. **Do not turn the ignition on until instructed to do so.**




The application will attempt to connect to the selected ECU. If you have trouble connecting to the ECU, turn the ignition off, wait for 15 second and try again.

# Functions

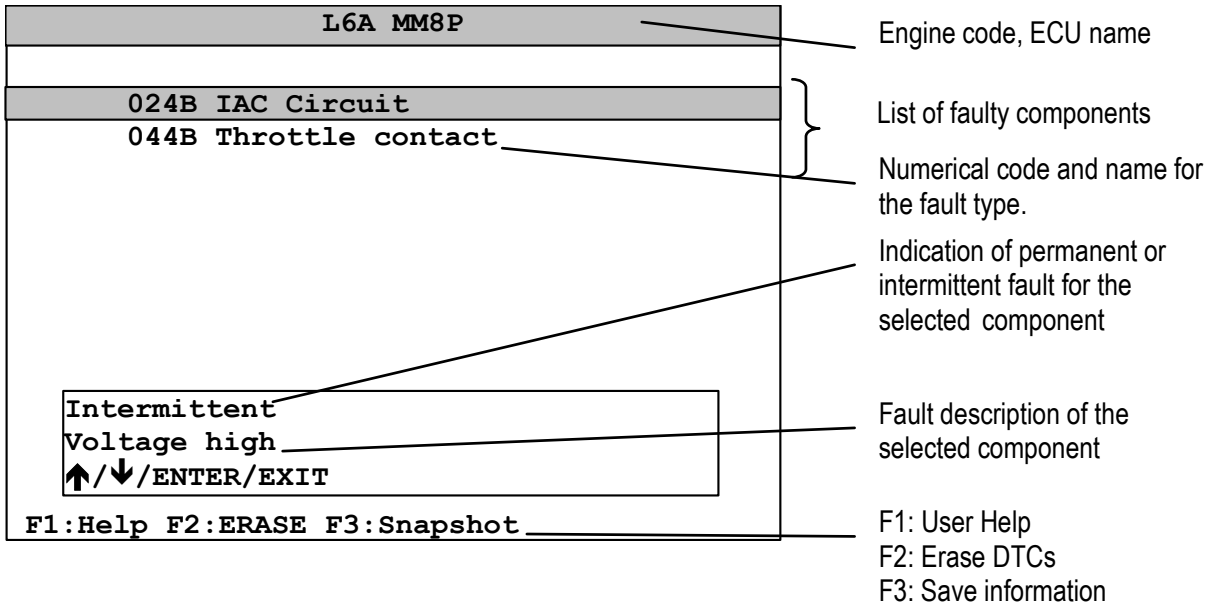
Each system will have a specific set of functions described thereafter. Most functions will give you the opportunity to take a snapshot using the function keys.

## ECU Identification

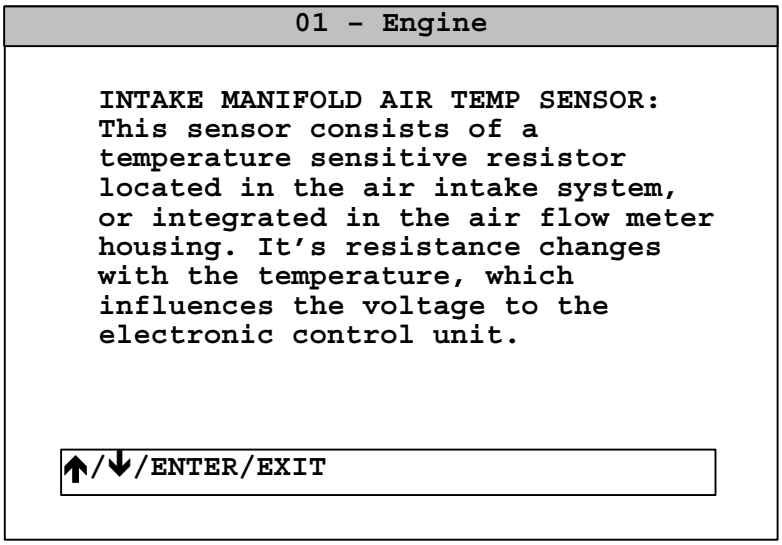
The ECU identification will give the electronic signature of the ECU. This information is very useful when you need to order a replacement ECU.

## Read DTC memory

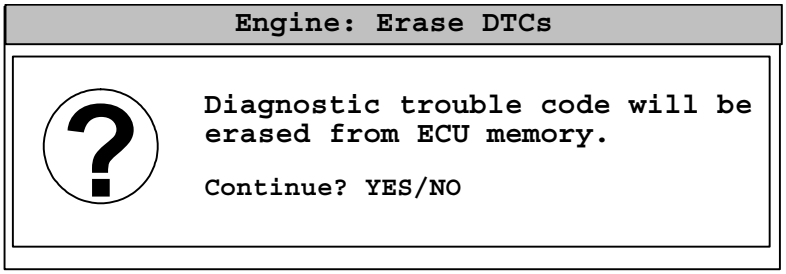
All registered DTCs (Diagnostic trouble codes) in the relevant ECU are indicated on the display.
Use ↑ and ↓ to move the cursor for more information on each DTC. Additional information about the fault is then shown on the display. The numerical codes can be used if you want to look in the service literature for more information about the component or fault.



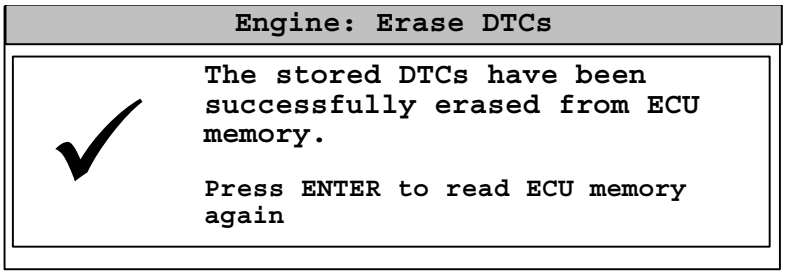

For some DTCs, you can get information about the selected component. Press HELP or ENTER. Further information about the component is shown on the display. Use ↑ and ↓ to scroll through the help text and use ← and → to scroll one screen at a time.



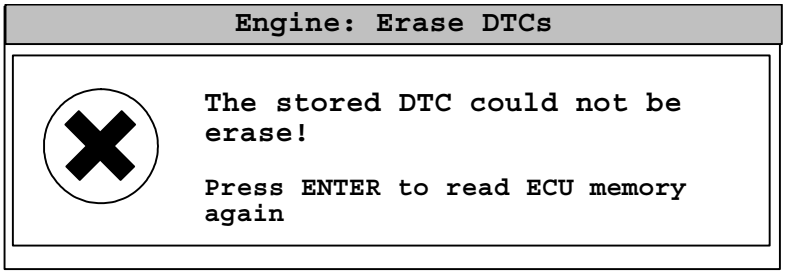

To delete a DTC, Use ↑ and ↓ to select it and press F2




Confirm the deletion by YES or cancel the function with NO. The stored DTCs will have been erased from the ECU memory.

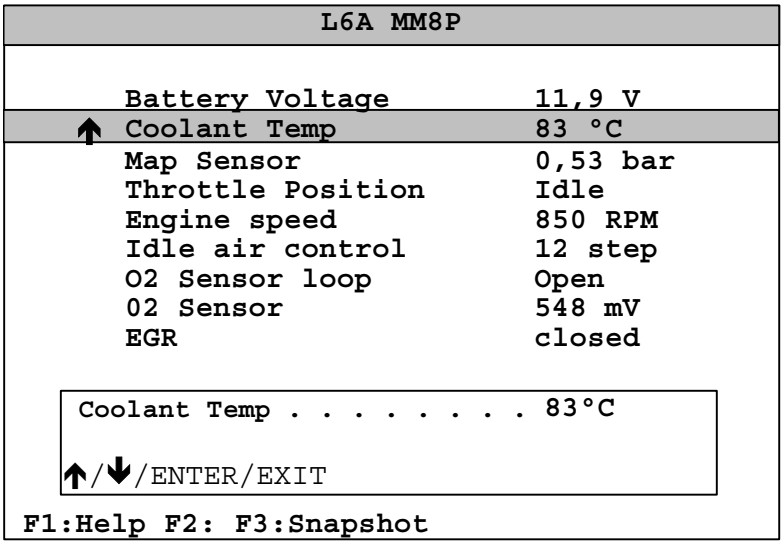



If the DTCs were not successfully erased, the following message is displayed.



# Monitor list

Multi-Tester Pro reads current data from the car's control unit. The values are updated continuously.

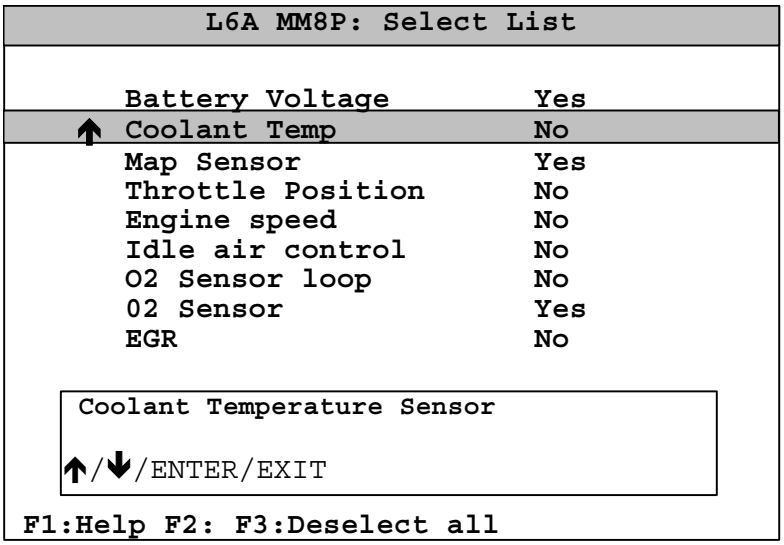



# Custom monitor list

In custom monitor list only selected parameters are displayed. Multi-Tester Pro reads current data from the car's control unit. The values are updated continuously.

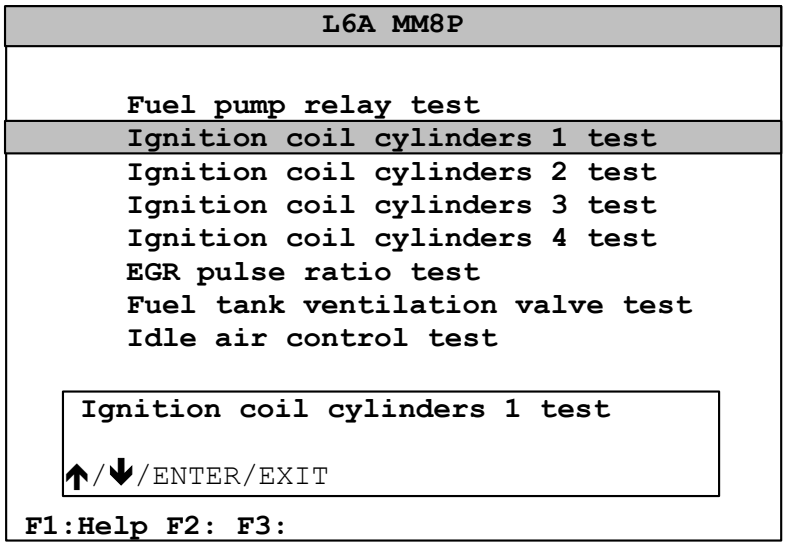
Use ↑ and ↓ to move the cursor to select data parameter. For the selected data parameter, use YES to include, and No to exclude the data parameter from the list.

Further information on the data parameter is shown on the display.



# Actuators

In most cases, the actuators can simply be switched on and off using the YES/NO buttons on the Multi-Tester Pro. The F1 key can also be used to toggle the actuator automatically, leaving the operator free to inspect the system under test.




# Reset adaptation values

It is possible to reset some systems to their original adaptation values. (e.g. Ford EECV)

# Self Test

Some systems can perform a self-test and then display the trouble codes that have been logged during this test.

# Snapshots

All screens that display data received from the vehicle can be saved as “snapshots” in Multi-Tester Pro. The Multi-Tester Pro can store a maximum of 16 snapshots.
The snapshots can be downloaded to a PC to create test reports. You can view the snapshots on the Multi-Tester Pro and delete them using the function keys.
The saved information is displayed in the same way as when the information was saved.

# Transponder Key Programming

The Multi-Tester Pro can be used to program transponder keys. This may be necessary if the existing keys have been damaged or lost.

Each application has a specific procedure described later in this manual. Make sure you follow every step of the procedure to avoid failure to program keys.

# ProFile

## System requirements

Windows 95, Windows 98, Windows XP or Windows 2000, Intel Pentium or equivalent CPU, 16 MB RAM, 20 MB of free disk space, RS232 serial port with full Windows driver.

## Installation

Insert the CD-ROM into your CD-ROM drive. The installation program will start automatically. Follow the setup instructions on the screen.

If the installation program doesn‘t start automatically, do the following:

1. In the start-menu choose “RUN...“.
2. Write the unit name of your CD-ROM drive followed by “:\ install.exe“ For Example: E:\install.exe
3. Click “OK“
4. Follow the setup instructions on the screen.

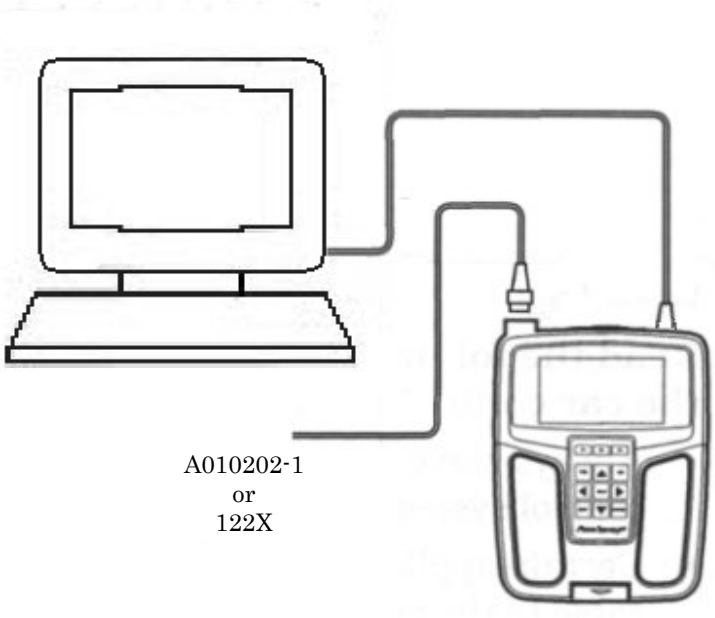
## ProFile functionality

ProFile allows you to:

- Load snapshots from Multi-Tester Pro to your PC.
- View the snapshots.
- Add extra information to the snapshots.
- Save the snapshots in a test report in your PC.
- Print test reports containing snapshots.

## Using ProFile

To be able to load snapshots from Multi-Tester Pro, your PC must be connected to it using the 9-pin cable provided and the Multi-Tester Pro must be connected to a vehicle battery or optional dc power supply.
If you wish to work only with test reports saved in your PC, your PC doesn‘t need to be connected to Multi-Tester pro.



A010202-1
or
122X

### Saving Test Reports

If you have made a standard installation of ProFile, the default folder for saving Test Reports is C:\Program\Autodiagnos\ProFile\Test Reports\ "Car Make". It is however possible to save Test Reports in any folder on your computer. ProFile will remember where you last saved a Test Report and use this folder as a new default folder.

### Downloading snapshots from Multi-Tester Pro

Two different procedures apply:
To download snapshots from a parallel Multi-Tester Pro application.

1. Select "Download Snapshots" in ProFile.
2. Select "Download Snapshots" in Multi-Tester Pro.

To download snapshots from a serial Multi-Tester Pro application.

1. Set Multi-Tester Pro to "PC-Download mode".
2. Select "Download snapshots" in ProFile.

## License registration

To be able to use ProFile a registered License from Autodiagnos is needed. The first time you start ProFile a Registration Window is displayed.
To register your ProFile License follow the steps below:

1. Start ProFile.
2. Answer “YES“ when asked if you wish to register ProFile.
3. Click “Registration form“, fill in the form and click the print-button. Make sure you fill in your fax number as this will be used by Autodiagnos for the reply containing the Registration Key.
4. Close the window and close ProFile.
5. Fax the printed Registration form to Autodiagnos, see address below.
6. When you get the reply from Autodiagnos, Start ProFile, answer “YES“ when asked if you wish to register ProFile.
7. Enter the Registration Key you received from Autodiagnos, click “Next“.
8. Your ProFile-license is now registered and you are ready to use ProFile.

# Abbreviations

The following is a list of the most common abbreviations used in Multi-Tester Pro applications.

| | |
|---|---|
| 4Matic | Four Wheel Drive Transmission Control |
| A/C | Air Conditioning |
| AAC | Automatic Air Conditioning |
| AB | Supplemental Restraint System (Airbag) |
| ABS | Anti-lock Break System |
| ACC | Automatic Climate Control |
| ADM | Automatic Dimming Mirror (Inside Rear-view Mirror) |
| ADS | Automatic Damping System (Suspension) |
| AEGS | Electronic Automatic Transmission System |
| AG | Electronic Transmission |
| AIC | Automatic Interval Control |
| AIR | Secondary Air Injection |
| AP | Accelerator Pedal |
| AS | Antenna System |
| ASC | Automatic Stability Control |
| ASD | Automatic Locking Differential |
| ASR | Acceleration Slip Regulation (Traction Control) |
| AT | Automatic Transmission |
| ATA | Anti-Theft Alarm |
| AWL | Airbag Warning Lamp |
| BA | Backup Assist |
| BARO | Barometric Pressure |
| BC | On-Board Computer |
| BIT | Basis Interface Telephone |
| BM | On-Board Monitor |
| BM | Base Module (Master ECU Controller) |
| BPC | Barometric Pressure Compensation |
| CA | Closing Assist |
| CAN | Controller Area Network |

| | |
|---|---|
| CANP | Canister Purge Valve |
| CC | Cruise Control (Tempomat) |
| CDC | CD Changer |
| CF | Convenience Feature |
| CFI | Continuous Fuel Injection |
| CKA | Crank Angle |
| CKP | Crankshaft Position |
| CL | Central Locking |
| CMP | Camshaft Position |
| CO | Carbon Monoxide |
| COMBI | Electronic Instrument Cluster |
| CST | Cabriolet Soft Top |
| CTEL | Cellular Telephone |
| CTP | Closed Throttle Position |
| DDE | Digital Diesel Electronic |
| DFI | Distributor Fuel Injection (Electronic) |
| DI | Distributor Ignition |
| DISA | Individual Intake Control System |
| DK | Throttle Valve |
| DKB | Throttle Brake Intervention |
| DKE | Throttle Increase |
| DKR | Throttle Reduction |
| DKT | Throttle Valve Signal |
| DKV | Preset Throttle Valve |
| DM | Diagnostic Module |
| DME | Digital Motor Electronics |
| DSC | Dynamic Stability System |
| DTC | Diagnostic Trouble Code |
| DWA | Anti Theft System |
| EA | Electronic Accelerator |
| EAG | Electronic Automatic Transmission Control |
| EATC | Electronic Automatic Transmission Control |
| ECL | Engine Coolant Level |
| ECT | Engine Coolant Temperature |

| | |
|---|---|
| ECU | Electronic Control Unit |
| EDC | Electronic Diesel Control |
| EDR | Electronic Diesel Regulation |
| EDS | Pressure Regulator |
| EDS | Electronic Diesel System |
| EDW | Anti-Theft Alarm |
| EFP | Electronic Accelerator |
| EGR | Exhaust Gas Recirculation |
| EGS | Electronic Transmission Control |
| EGS | Electronic Gear Selection |
| EH | Electro hydraulic Transmission |
| EKM | Electronic Body Module |
| EKP | Fuel Pump Relay |
| EML | Electronic Throttle Control |
| EPROM | Erasable/Programmable Read Only Memory |
| ERE | In-line Fuel Injection (Diesel) |
| ESA | Electric Seat Adjustment |
| ESC | Electric Steering Column Adjustment |
| ESP | Electronic Stability Program |
| ETC | Electronic Transmission Control |
| ETR | Emergency Tensioning Retractor |
| ETS | Electronic Traction System |
| EV | Injector Valve |
| EVAP | Evaporative Emission Control System |
| EVE | Electronic Distributor-Type Fuel Injection (Diesel) |
| EWS | Drive Authorisation System |
| EZ | Distributor Ignition System |
| FGR | Vehicle Speed Control (cruise Control) |
| FP | Fuel Pump |
| HAU | Automatic Heater |
| HCS | Headlamp Cleaning System |
| HEAT | Automatic Heater |
| HFM | Hot Film Engine Management System |
| HG | Manual Transmission |

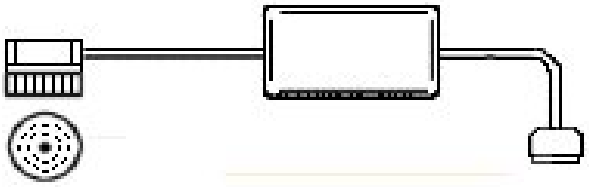
| | |
|---|---|
| HLM | Hot Wire Air Mass Meter |
| HS | Heated Seats |
| Hz | Hertz (Cycle) |
| IAT | Intake Air Temperature |
| IC | Instrument Cluster |
| IFI | In-line Fuel Injection (Diesel) |
| IHKA | Automatic Heater and A/C Control |
| IHKR | Heater and A/C Control |
| IHR | Automatic Heating Control |
| ISC | Idle Speed Control |
| ISC | Idle Speed Control |
| KD | Kick Down (Auto Downshift on Acceleration) |
| KE | Bosch Continuous Injection System |
| KLA | Air Conditioning |
| KS | Knock Sensor |
| KVA | Fuel Consumption Signal |
| LH | Lucas Sequential Fuel Injection Management |
| LL | Idle Signal |
| LLR | Cruise Control |
| LMM | Air Flow Meter |
| MAF | Mass Air Flow |
| MAP | Manifold Absolute Pressure |
| ME | Motor Electronics |
| MID | Mileage Indicator Display |
| MIL | Malfunction Indicator Lamp |
| MRS | Multiple Restrain System |
| MSR | Engine Drag Torque Control |
| MT | Manual Transmission |
| MV | Magnetic Valve (Solenoid Valve) |
| n-ab | Transmission Rotational Speed (Rpm) |
| n-mot | Engine Rotational Speed |
| O2S | Oxygen Sensor |
| OBD | On-Board Diagnostics |

| | |
|---|---|
| P/N | Park/Neutral |
| PML | Speed-Sensitive Power Steering |
| PMP | Partial Intake Manifold Preheater |
| PNP | Park Neutral Position |
| PS | Power Steering |
| PSE | Pneumatic System Equipment |
| PTS | Parktronic System |
| PWG | Pedal Value Sensor |
| RAM | Random Access Memory |
| RB | Roll Bar Control |
| RCL | Remote Central Locking |
| REST | Residual Engine Heat Utilisation |
| RHR | Retractable Head Restraints |
| RHS | Rear Heated Seats |
| RST | Roadster Soft Top |
| RV | Roadster Soft Top |
| RXD | Receive Data Line |
| SBE | Seat Belt Extender |
| SLO | Starter Lock Out |
| SPS | Speed-Sensitive Power Steering |
| SRS | Supplemental Restraint System (Airbag) |
| STH | Stationary Heater |
| TCM | Transmission Control Module |
| TD | Time Division Speed Signal (EZ) |
| TDC | Top Dead Centre |
| TE | Fuel Evaporation Control |
| ti | Injection timing |
| tL | Load Signal |
| TR | Engine Speed Signal (RPM counter) |
| TVV | Tank Ventilation Valve |
| TWC | Three Way Catalytic Converter |
| TXD | Transmit Data Line |
| U-Batt | Battery Voltage |
| U-Vers | Supply Voltage |

| | |
|---|---|
| VL | Full Load |
| VSS | Vehicle Speed Signal |
| WK | Torque Converter Clutch |
| WOT | Wide Open Throttle (Full Load) |
| ZAB | Ignition Fade Out |
| ZKE | Central Body Electronics |
| ZKM | Central Body Module |
| ZSR | Ignition Current Feedback |
| ZVM | Central Locking System |

# BMW

## Adapters



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## Diagnostic connector location

| Adapter | System | Connector Location |
|---|---|---|
| 38 pin cable (A0901061-2) | All | In the engine compartment rear, LH side or RH side. |

## Service reset 2000

The only BMW approved procedure is manual resetting using buttons on the dashboard. The procedure is as follows:
On cars with no diagnostic socket in the engine compartment, the service interval indicator is reset using left push button in the instrument cluster.

- Ignition key in position “0”
- Press and hold the left button in the instrument cluster
- Turn key to position “1”
- Keep the button pressed, the service status will be displayed after 5 seconds
- The SIA displays OIL SERVICE or INSPECTION and the remaining distance.
- “RESET” is shown if resetting is possible, if no “RESET” is shown the service distance has not been reached and resetting is not possible.
- Keep the button pressed in for a further 5 seconds to enter reset mode
- “RESET” will flash in the display for 5 seconds
- Release, re-pressing and re-releasing the button while “RESET” is flashing

The new distance is displayed for 5 seconds once the resetting procedure has been carried out.

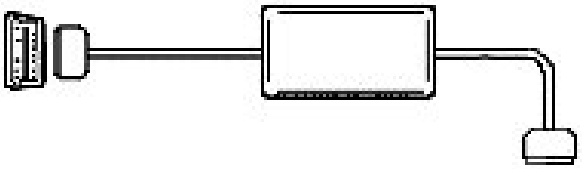
# ABS

On E32 and E34 series, 1987 to 1995, you will have a no communication message. Only BMW E32 (7series 87-94) and E34 (5series 88-95) equipped with ABS/ASC+T can be diagnosed via the diagnostic connector.
The differences between ABS, ABS/ASC and ABS/ASC+T are listed below.

- The ABS system does not support serial diagnostic capabilities.
- The ASC system does not support serial diagnostic capabilities but supports flash codes via ASC passive lamp (PALA) and ASC passive button (PATA).
- The ABS/ASC+T system does support serial diagnostic capabilities.

# Fiat

## Adapters



A0901071-1

A0903071-1

## Diagnostic connector location

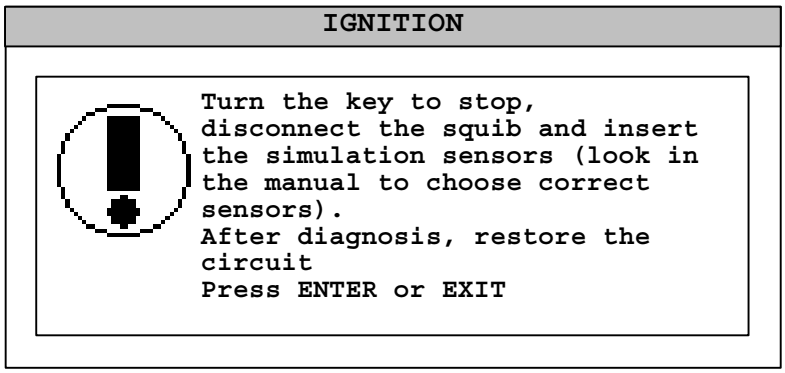
For ECUs with a 3 pin connector, there is one connector per ECU.

| Adapter | System | Connector Location |
|---|---|---|
| 16 pin OBD cable (A0901071-1) | All | Under Dash panel LH. |
| 3 pin cable (A0905071-1) | Injection | Engine compartment rear LH side or RH side. |
| 3 pin cable (A0905071-1) | ABS | Engine compartment rear LH side. |
| 3 pin cable (A0905071-1) | Airbag | In/under glove compartment. |
| 3 pin cable (A0905071-1) | Climate control | In/under glove compartment. |

## Airbag diagnostics

For some airbags you will be told to use simulation sensors found in a resistor kit (see picture below). By using these simulation sensors (resistors) on the “explosive charge detonation lines“ accidental explosion of the charge is prevented, as the charges are physically

disconnected from the wiring during diagnosis. This resistor kit can be bought from Fiat with part number **1806358000.**




| Car | System | Resistor, driver side | Coiled resistor | Resistor, passenger side |
|---|---|---|---|---|
| Alfa 145 | TRW (2 bags) | R40 | R41B | R42 |
| Alfa 146 | TRW (2 bags) | R40 | R41B | R42 |
| Alfa 164 | Siemens (est. accelerometers) | R46 | R47 | R46 (2 Resistors) |
| | Siemens (only driver side) | R46 | R47 | R46 (2 Resistors) |
| | Siemens (driver + passenger) | R46 | R47 | R46 (2 Resistors) |
| Alfa GTV | TRW (with pretensioners) | R40 | R41 B | R42 |
| Alfa Spider | TRW (with pretensioners) | R40 | R41 B | R42 |
| Fiat Barchetta | TRW (with pretensioners) | R40 | R41 B | R42 |
| Fiat Bravo/a | Breed | R44 or R46 | R42 | R45 |
| Fiat Coupe | TRW (2 bags) | R40 | R41B | R42 |
| Fiat Croma | TRW (1 bag) | * | | |
| Fiat Ducato | Breed (with pretensioners) | R46 | R42 | R45 |
| Fiat Marea | Allied Signal | R46 | R42 or R48 | R45 |
| Fiat Palio | TRW (2 bags) | R40 | R41 or R41 B | R42 |
| Fiat Punto | TRW (2 bags) | R40 | R41 or R41B | R42 |
| Lancia k | TRW (with pretensioners) | R40 | R41 B | R42 |
| Lancia Thema | TRW (1 bag) | * | | |
| Lancia Y | Allied Signal | R46 | R42 | R45 |

# Programming Immobiliser

Obtain all keys

1. Insert the red master key into the ignition switch
2. Switch the ignition on
3. Switch the ignition off immediately after the immobiliser warning light extinguishes

Within 10 seconds:

4. Remove master key
5. Insert key 1 to be programmed into ignition switch
6. Switch the ignition on
7. Switch the ignition off immediately after the immobiliser warning light extinguishes

Within 10 seconds:

8. Remove key 1
9. Insert key 2 to be programmed into ignition switch
10. Switch the ignition on
11. Switch the ignition off immediately after the immobiliser warning light extinguishes
12. Remove key 2

Repeat the above procedure to program the remaining keys. A maximum of 7 keys can be programmed using the master key.

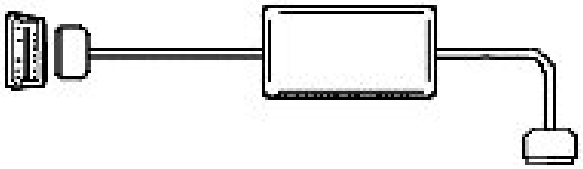
After programming the last key

Within 10 seconds

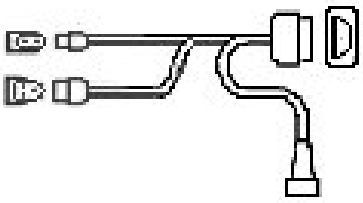
13. Insert master key into the ignition switch
14. Switch the ignition on
15. Switch the ignition off immediately after the immobiliser warning light extinguishes
16. Remove master key.

# Ford

## Adapters



A0901061-2



A0903061-3

## Diagnostic connector location

| Model | Adapter | Connector Location |
|---|---|---|
| Cougar →95 | 16 pin OBD cable (A0901061-2) | Under Dash panel centre |
| Cougar 95→ | 16 pin OBD cable (A0901061-2) | Near drive side door, just above pedals. |
| Escort/Orion →95 | 16 3 pin (A0903061-3) | Engine compartment rear LH side. |
| Escort/Orion →97 | 16 2 pin (A0903061-3) | Engine compartment rear LH side. |
| Escort/Orion 94-95 | 16 pin OBD cable (A0901061-2) | Engine compartment rear LH side. |
| Escort/Orion 96→ | 16 pin OBD cable (A0901061-2) | LH A-pillar (RHD), RH A-pillar (LHD). |
| Fiesta/Courier →95 | 16 3 pin (A0903061-3) | Engine compartment. |
| Fiesta/Courier →95 | 16 2 pin (A0903061-3) | Engine compartment. |
| Fiesta/Courier 96→ | 16 pin OBD cable (A0901061-2) | LH A-pillar. |
| Focus | 16 pin OBD cable (A0901061-2) | Under dash panel. |
| Galaxy | 16 pin OBD cable (A0901061-2) | Center console, under the ashtray. |

| Model | Adapter | Connector Location |
|---|---|---|
| Ka | 16 pin OBD cable (A0901061-2) | LH A-pillar. |
| Mondeo →94 | 16 2 pin (A0903061-3) | Engine compartment, rear LH side. (ABS). |
| Mondeo →94 | 16 3 pin (A0903061-3) | Engine compartment, rear LH side. (ABS). |
| Mondeo →94 | 16 2 pin (A0903061-3) | Bulkhead RH side (Engine). |
| Mondeo →94 | 16 3 pin (A0903061-3) | Bulkhead RH side.(Engine). |
| Mondeo 95→ | 16 pin OBD cable (A0901061-2) | Under dash panel LH. |
| Puma | 16 pin OBD cable (A0901061-2) | LH A-pillar. |
| Scorpio | 16 3 pin (A0903061-3) | Engine compartment center, rear RH. |
| Scorpio | 16 pin OBD cable (A0901061-2) | Under dash panel LH or RH. |
| Transit →95 | 16 3 pin (A0903061-3) | Engine compartment. Glove compartment |
| Transit 95→ | 16 pin OBD cable (A0901061-2) | Under dash panel LH or RH. |

## Service set mode

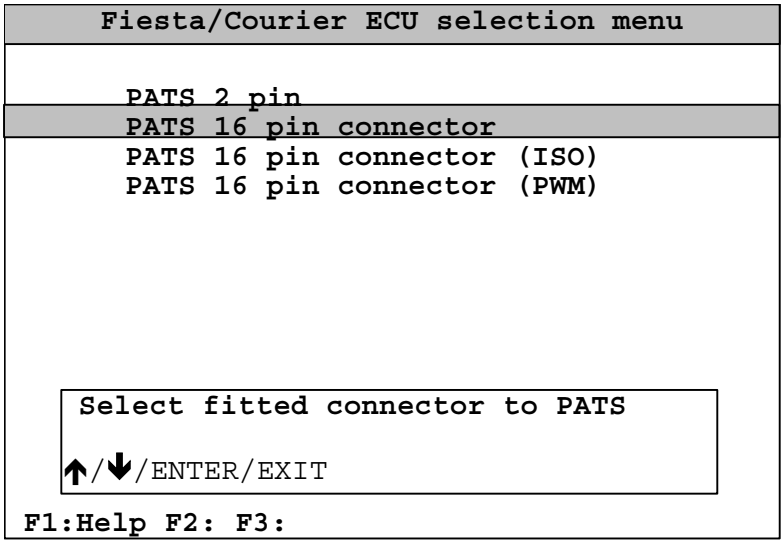
When performing the Engine running self-test (Key On Engine Running, KOER) the ECU performs a dynamic test of different sensors. When this test is complete the Multi-Tester Pro will try to set the ECU in Service set mode. If the ECU doesn't support this function the KOER-test will terminate and Multi-Tester Pro will display a list of fault codes (DTC) found during the test. If the ECU supports Service set mode it will switch to that mode for a predetermined period of time, enabling checks and/or adjustments of the idle speed and ignition timing. The predetermined period of time is set by the ECU and is displayed by the Multi-Tester pro.

N.B. Adjustment of idle speed is not possible on the following engines:

- CVH EFI
- CVH EFI TURBO
- 2.4/2.9 EFI with catalytic converter
- all CFI engines

# Program Transponder Keys

The application can be used to erase and program transponder keys on vehicles that are equipped with an immobiliser.
When the PATS (Immobiliser) is selected, you will be asked to specify the type of connection to the car as follows.




The number of connectors on this menu will depend on the model selected. If no 16-pin connector is present, use the 2-pin connector in the engine bay. For 16-pin systems, simply select the first 16-pin option. If no connection to the car is established, select the next option until a connection is made.

After entering the authorisation code, the following menu will be displayed.

## Master key systems

Some Ford vehicles use a master key programming system. These vehicles are supplied with a single red key and two or more black keys. The red key is the master key that can be used to program additional keys. The black keys are known as slave keys and are used for driving the vehicle.

- Count keys
  The count keys option can be used to report the number of keys known by the Immobiliser. This can be used to check that keys have been erased and programmed successfully.
- Program new master / slave keys
  This option will erase all keys currently known by the Immobiliser and allow you to program a new master key and new slave keys.
- Erase RIM
  This option will erase keys from the Remote Immobiliser Module used on Diesel vehicles. This will normally be done automatically when program new master / slave keys is selected. Use this option to erase keys from the RIM if the keys have already been erased from the Immobiliser or you do not wish to erase keys from the Immobiliser.

## Two key systems

More recent Ford vehicles (typically after 1997) do not use a master key. Instead, new keys can be added using two previously programmed keys. On these systems, the following menu will be displayed.

- Count keys
  The count keys option can be used to report the number of keys known by the Immobiliser. This can be used to check that keys have been erased and programmed successfully.
- Erase transponder keys
  This option will erase all currently known keys from the Immobiliser memory. After this option has been used, a minimum of two keys must be programmed before the vehicle will start.
- Program transponder key
  This option will program a new key so that it will be recognised by the vehicle.
- Erase RIM
  This option will erase keys from the Remote Immobiliser Module used on Diesel vehicles. This will normally be done automatically when Erase transponder keys is selected. Use this option to erase keys from the RIM if the keys have already been erased from the Immobiliser or you do not wish to erase keys from the Immobiliser.

## Security wait time

All Ford immobilisers implement a security wait timer. The tester must be connected to the immobiliser for a set duration before keys can be erased or programmed. The time varies for different models but is typically 8-10 minutes for Petrol vehicles and 25 minutes for Diesel vehicles.
The application will inform you of the length of time to wait and sound an alert when the time has expired. Once security access has been gained it will be maintained as long as the tester is connected to the vehicle and the ignition is not switched off.

When inserting a second new key for programming, you will be prompted by the application to insert the new key within ten seconds of removing the previous key to ensure security access is retained. **It is important to follow this instruction otherwise it may be necessary to wait for the full security time again.**

## Programming Infrared transmitter

1. Obtain all keys fitted with remote control.
2. Fasten seat belt and close all doors.
3. Turn ignition switch from position I to position II at least 4 times within 6 seconds.
4. Turn ignition switch to position I. The program mode is activated for 10 seconds.
5. Point the first key at the receiver.
6. Press and hold the lock button or the unlock button.
7. Wait for an acoustic signal (indicates correct programming).
8. Repeat the procedure above within the 10 seconds to program the remaining keys.

To exit programming mode, wait 10 seconds or start the engine.

## Programming Radio frequency transmitter

1. Obtain all keys fitted with the remote control.
2. Turn ignition switch from position I to position II at least 4 times within 3 seconds.
3. Switch the ignition off and remove the key. The programming mode is activated for 20 seconds.
4. Press the lock, unlock or boot button if present.
5. Release button.

6. Ensure the clock LED flashes (indicates correct programming).
7. Wait 2 seconds.
8. Repeat the procedure above within the 20 seconds to program the remaining keys.

To exit programming mode, wait 20 seconds or switch the ignition on.

## Wiggle test

Wiggle test is a test that detects intermittent faults in harnesses and/or connectors. When the test is performed the fitted ECU detects and informs the Multi-Tester Pro about the faults. Hence, it is the intelligence of the ECU that determines the accuracy of the test. The Wiggle test begins by reading the Diagnostic Trouble Codes (DTC). Depending on the number of DTCs present, this may take a few minutes. The retrieval of the DTCs is indicated by a spinning hourglass in the Multi-Tester pro.
Activate the test by using the arrow-keys and ENTER. When the DTC read out is done and the "Number of wiggles detected:"-text is displayed at the bottom of the display, the ECU is in Wiggle test mode. Wiggle multiplugs and wiring without using excessive force or detaching connectors. If a beep is heard and the number of wiggles detected has increased, a fault has been found in the affected plug or associated wiring. ECUs equipped with KAM will record the relevant fault code which, in turn, can be viewed through the "Diagnostic Trouble Codes (DTCs)"-menu in the Multi-Tester Pro.

## Toggle test

Toggle test is a component activation test. When the test is performed the ECU activates a number of relays and switches. The on/off-activation is controlled by depressing the accelerator repeatedly. The number of relays and switches that are activated is dependent on the fitted ECU. The Toggle test begins by reading the Diagnostic Trouble Codes (DTCs). Depending on the number of DTCs present, this may take a few minutes. The retrieval of the DTCs is indicated by a spinning hourglass in the Multi-Tester Pro.

In the Multi-Tester pro, activate the test by using the arrow keys and ENTER. When the DTC readout is done the ECU is in Toggle test mode. It is now possible to activate and deactivate a number of

actuators by depressing the accelerator repeatedly. Each time the accelerator is depressed, Multi-Tester Pro will toggle the words ON and OFF at the bottom of the display to indicate the current status of the affected actuators. They can be tested either by listening, by touch or by measuring. A few examples of components that can be operated (depending on the system fitted):

- Canister purge solenoid
- Clutch converter lock-up clutch solenoid
- Electronic vacuum regulator
- Idle speed control valve
- Self test output
- Transmission hydraulic switch (3rd/4th gear solenoid)

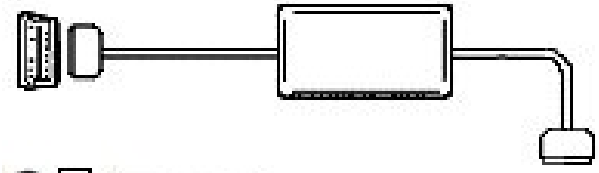
## Airbag diagnostics

Ford airbag (SRS) systems in Fiesta, Escort, Mondeo and certain Scorpio models do not support serial diagnostics. If a fault is detected in the SRS, the SRS warning light in the instrument cluster will light up when the engine is running. To assist troubleshooting, the SRS warning light will blink according to a certain sequence.

| Code | SRS warning light blink sequence | Fault description |
|---|---|---|
| 0 | On for 5 seconds, then off | No fault present — normal operation |
| 1 | On for 5 seconds, then one flash every 2 seconds. | Driver airbag failure |
| 2 | On for 5 seconds, then 2 flashes every 2 seconds. | Passenger airbag failure |
| 3 | On for 5 seconds, then 3 flashes every 2 seconds. | Driver and passenger airbag failure |
| 4 | On for 5 seconds, then 4 flashes every 2 seconds. | Pretensioner failure (driver or passenger side) |
| 5 | Always on | SRS electronic control module failure or supply fault |
| 6 | Always off | Bulb or instrument cluster fault |

# Land Rover

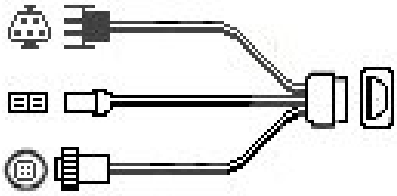
## Adapters



A0901121-1

A0903111-1

A0904121-1



A0903121-1

## Diagnostic connector location

| Model | System | Adapter | Connector Location |
|---|---|---|---|
| Freelander | All | 16 pin OBD cable (A0901121-1) | Passenger side of centre console, sometimes driver's side near floor. |
| Range Rover | All | 16 pin OBD cable (A0901121-1) | Passenger foot well at side of centre console. Mounted vertically. |
| Discovery Series II | All | 16 pin OBD cable (A0901121-1) | Drivers side of centre console centrally below steering wheel. |
| Discovery Series I | 14-CUX | 16-5 pin (A0903121-1) | Behind trim panel in front of driver's door. |
| | Electronic EGR | 16-3 pin (A0903111-1) | Behind trim panel in front of driver's door. |
| | MEMS MPi | 16-3 pin (A0903111-1) | Engine bay next to ECU. |
| | ABS | 16-5 pin (blue) (A0904121-1) | Behind trim panel in front of driver's door. |

| Model | System | Adapter | Connector Location |
|---|---|---|---|
| Discovery Series I | Airbag | 16-4 pin (A0903121-1) | Below steering wheel behind trim panel |
| | All | 16 pin OBD cable (A0901121-1) | Drivers side of centre console above pedals. |
| Range Rover Classic | 14-CUX | 16-5 pin (A0903121-1) | Behind trim panel in front of driver's door. Or at rear of driver's seat. |
| | Air suspension | 16-5 pin (A0903121-1) | Under Driver's seat. |
| | Airbag | 16-4 pin (A0903121-1) | Below steering wheel behind trim panel. |
| | ABS | 16-5 pin (blue) (A0904121-1) | Under passenger seat at front of seat. |
| Defender | All when fitted | 16 pin OBD cable (A0901121-1) | Front face of middle seat. |
| | Electronic EGR | 16-3 pin (A0903111-1) | |
| | 14-CUX | 16-5 pin (A0903121-1) | |

## Plip Programming (Freelander, Defender, and Discovery Series I)

Use this option to program new Plips (remote button keys) for the vehicle so that they will operate the locks and alarm. All existing Plips will be erased from the Immobiliser memory at this point. You must then press the lock button on the Plip repeatedly until the Horn sounds. This indicates that the Immobiliser has stored the Plip. The Plip code must be read successfully 8 times before it is stored, so it will be necessary to press the lock button at least 8 times before the horn will sound. Repeat this procedure for all Plips to be programmed, and press the ENTER key on the Multi-Tester Pro when finished.
N.B. Because all existing Plips are erased at the start of this procedure, you must re-learn any existing Plips that you still wish to use with the vehicle. It is therefore important that you have all the keys for the vehicle to hand before beginning this procedure.

# Plip Programming (Discovery Series II)

Up to 5 Plips can be programmed on these vehicles in the body controller unit (BCU). When a new Plip is obtained for the vehicle, it will be supplied with a label containing two barcodes which hold the security code for the Plip. When the Plip programming option is selected, you will be prompted to enter the two barcodes on the Multi-Tester Pro, when complete the Plip will be recognised by the BCU. The format of the barcodes can be seen in the following example

*N291BB1291AA0FFW*
*FFFFFFFFD6E77E7*

When entering the barcodes, make sure to enter all the data between the asterisks.

# Read EKA Code (Freelander up to 01, Defender, Discovery)

Under normal circumstances, the only way to disarm the Immobiliser on a Land Rover vehicle is to use the correct Plip key to unlock the car. If no Plip key is available or functioning, it is possible to disarm the Immobiliser by using the EKA (Emergency Key Access) Code. This option will read the EKA Code from the vehicle and display it on the Multi-Tester Pro screen.
The EKA Code consists of a 4 digit numerical sequence. To use an EKA code to disarm a vehicle, perform the following sequence:

1. Insert the key into the drivers door lock and turn to the lock position.
2. Wait for 5 seconds.
3. Turn the key to the unlock position the number of times indicated by the first digit of the EKA code.
4. Turn the key to the lock position the number of times indicated by the second digit of the EKA code.
5. Turn the key to the unlock position the number of times indicated by the third digit of the EKA code.
6. Turn the key to the lock position the number of times indicated by the fourth digit of the EKA code.
7. Turn the key to the unlock position.

If the EKA code is entered correctly, the Alarm LED will stop flashing, and the engine will start.

If you make an error while entering the EKA code, open and close the driver's door before going back to the start of the sequence. If the EKA code is entered unsuccessfully 3 times, the system will ignore any further attempts for the next 10 minutes.

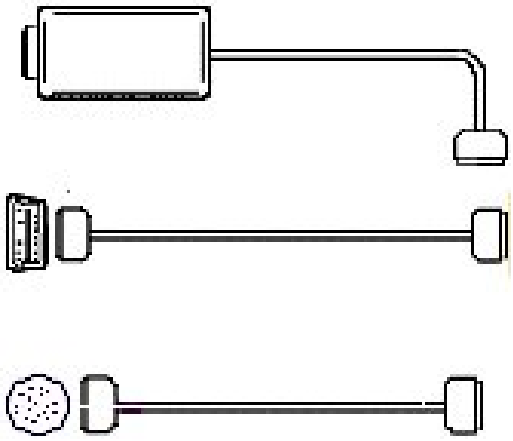
## Blink code Diagnostics

On Discovery series II, the Air Temperature Control (ATC) system cannot be diagnosed by serial communications. If fault codes are present, they can be read by means of blink codes. To read the fault codes on this system, use the following sequence.
Switch on the ignition while simultaneously holding down the MODE and AUTO buttons on the front panel of the ATC.
All the display icons will flash four times at one second intervals.
Fault codes will then flash on the right hand numerical display.
All fault codes present will flash in the order they were stored by the ECU. If no faults are present the display will flash 00 continuously.
The meaning of the stored fault codes can be found in the following table:

| | |
|---|---|
| 11 | In car temperature sensor |
| 12 | Ambient (External) temperature sensor |
| 13 | Air con evaporator temperature sensor |
| 14 | Water temperature sensor |
| 21 | Left solar sensor |
| 22 | Right solar sensor |
| 31 | Air blend left potentiometer |
| 32 | Air blend right potentiometer |
| 33 | Air outlet (Mode) potentiometer |

# Mercedes

## Adapters



A0901001-1

A0903011-1

A0903001-1

## Diagnostic connector location

| Adapter | System | Connector Location |
|---|---|---|
| 16 pin OBD cable (A0903011-1) | All | Under steering column next to bonnet release catch. |
| 38 pin cable (A0903001-1) | All | Under bonnet behind 13mm plug or under bonnet in fuse box. |

## Service interval light resetting

### A Class (168)

Button located beneath rev counter.
Switch ignition on and immediately press button twice.
Switch ignition off.
Press and hold button while switching ignition on.
After 10 seconds the new interval will appear in the display.
Release button.
Switch ignition off.

### C - Class (202), E – Class (210), S – Class (140), CLK (208)

Button located on the left hand side of instrument cluster.
Switch ignition on and immediately press button twice.
Switch ignition off.
Press and hold button while switching ignition on.

After 10 seconds the new interval will appear in the display.
Release button.
Switch ignition off.

### SLK (170) –05.97

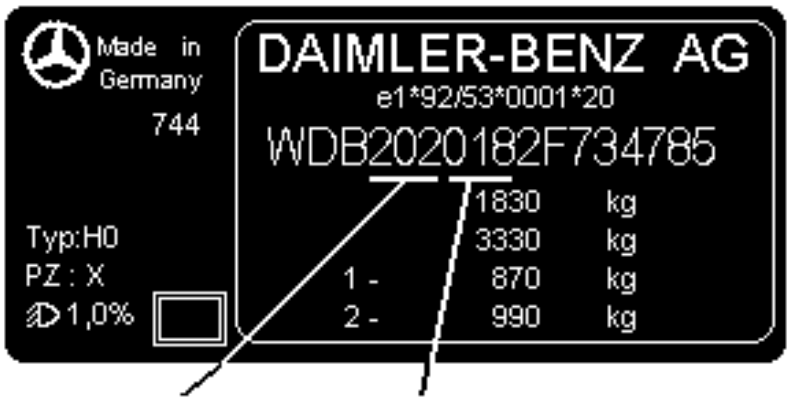
Button located at bottom left hand side of speedometer dial.
Turn ignition key to position I.
Press and hold button.
Switch ignition on.
After 10 seconds the new interval will appear in the display.
Release button.
Switch ignition off.

SLK (170) 06.97 Button located at bottom left hand side of speedometer dial
Switch ignition on and immediately press button twice.
Switch ignition off.
Press and hold button while switching ignition on.
After 10 seconds the new interval will appear in the display.
Release button.
Switch ignition off.

## Navigation

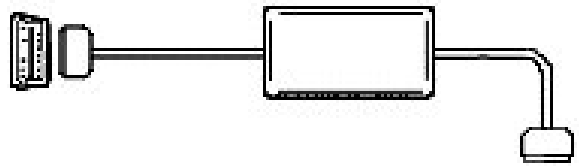
To navigate in the application, you need a model code and a variant code. This information is extracted from the VIN number.
The *VIN* can usually be found in one of the following locations:

1. Bottom left corner of windscreen.
2. On a label on the drivers door shut.
3. On a plate under the bonnet slam panel.



# OBDII – EOBD

## Adapters



A0901041-1

## Functions

The Multi-Tester Pro will automatically detect which communication protocol the vehicle uses. Should this not succeed, it is probably due to your vehicle lacking of EOBD/OBDII support.

The indicator in the lower right corner of the display shows the status for communication between the Multi-Tester Pro and the vehicle.

| | |
|---|---|
| ERR | Communication problem. |
| - - - | Communication is interrupted, the Multi-Tester Pro tries to re-establish communication. |
| MIL | Malfunction indicator lamp is illuminated. Use the "01 read current power train data" menu to see which control unit was responsible for the lamp being lit. |
| OFF | The application was started without communication with the vehicle. |
| | Communication works and the malfunction indicator lamp is not on. |

N.B. The ignition must be switched on to allow the instrument to contact the ECU. Some ECUs power down after a while when the engine is not running.

The OBDII –EOBD application uses its own specific functions described bellow.

### Readiness test

Function displays status for tests conducted in the ECU
Status is stated with:

| | |
|---|---|
| Not supported: | the vehicle control units do not support the function |
| Not completed: | the test is in progress or the conditions for the test are incorrect |
| Completed: | The test is completed. Conditions have been met. |

Multiple responses:
If multiple modules respond to the same request, multiple consecutive lines with the same test name indicate this. If different modules respond with different values this is indicated in the status column.

### 01 request current power train data

Reads current data from the car's control unit. This is the equivalent of live data for the other applications.

### 02 Request Freeze frame data

Reads data from the car's control unit that has been saved by the control unit in conjunction with an error code having been set.

### 03 Request DTCs

Reads diagnostic trouble codes from the car's control unit.

### 04 Clear Diagnostic information

Clears the troubles code and the freeze frame data associated from the car's control unit.

### 05 Request oxygen sensor test results

Reads the test result from the car's oxygen sensors. It displays minimum and maximum values.

### 06 Request non-continuous test results

Reads results from non continuous tests.

### 07 Request continuous test results

For certain faults the DTC is not set until it remains for a certain period of time or is repeated a certain number of times, with the vehicle started in-between. Before the DTCs are set and can be read with the "03 Request DTCs" menu, they can be read in the "07 Request continuous test results" menu, which indicates error status directly. The Multi-Tester Pro reads the results from continuous tests and presents then in the same manner as the DTCs.

### 08 Control ECU test or component

Displays a list of control functions supported by the control systems.

### 09 Request vehicle information

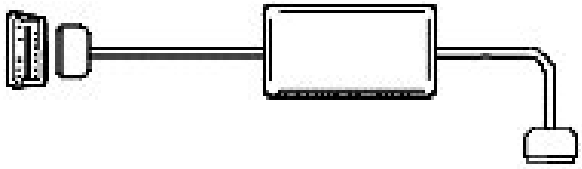
Reads identification information from the car's control unit.

### Send user defined messages

Sends user defined codes to the car and displays reply codes.

# Opel-Vauxhall

## Adapters



A0901031-1

A0903031-1

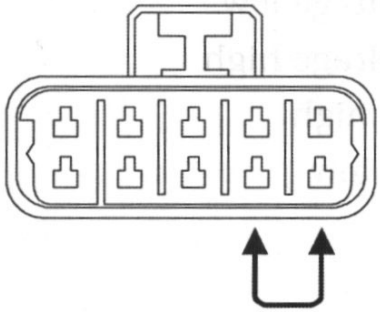
## Diagnostic Connector Location

| Model | Adapter | Connector Location |
|---|---|---|
| Asta F<br>Corsa B<br>Tigra | 16-OBD cable (A0901031-1) | located in the fuse compartment to the right hand side of the steering wheel on RHD vehicles and to the left hand side of the steering wheel on LHD vehicles. Covering panel can be pulled off to reveal the complete fuse compartment and diagnostic connector |
| Astra G<br>Vectra B<br>Zafira | 16-OBD cable (A0901031-1) | located in the central console between the handbrake and the gear stick. There is a plastic cover that needs to be removed to find the connector. |
| Frontera | 16 pin OBD cable (A0901031-1) | mounted vertically just in front of the hinge of the driver side door |
| Omega B | 16 pin OBD cable (A0901031-1) | located in the fuse compartment. There is a large cover for this compartment directly below the steering wheel. A push button release the cover and reveals the fuses and diagnostic connector. |

# Blink Code

Some control modules don't have a serial link. To read the fault code, you will have a to use a different method.

1. Bridge pin A and B in the diagnostic connector



2. Turn the ignition on
3. Count flashes in the check engine lamp
4. Translate them using the list below
5. To erase the fault code disconnect the battery for 30 seconds

## Blink code interpretation

The code read out always starts with "Code 12" repeated three times, the fault codes are flashed. All codes are repeated three times, the first digit is flashed with a space of 0.4 seconds, then there is a 1.2 second delay until the second digit is flashed. The delay between codes is 3.2 seconds. The sequence is ended by once again flashing of "Code 12" three times.

## Diagnostic trouble code description

12 Start of code sequence
13 Oxygen sensor not switching
14 Coolant temperature sensor voltage low
15 Coolant temperature sensor voltage high
21 Throttle potentiometer voltage high
22 Throttle potentiometer voltage low
24 Road speed sensor no signal
33 MAP sensor voltage high
34 MAP sensor voltage low
35 Idle speed control no function
42 Ignition adjustment no function

44 Oxygen sensor volume low
45 Oxygen sensor volume high
51 EEPROM faulty
53 Battery voltage high
54 CO-potentiometer out of range
55 ECU faulty

## Program Transponder Keys

This program is only available on Immobiliser, Central locking, Anti theft warning ECUs. It allows the transponder keys and remote-key fobs to be erased or programmed for the vehicle.
For Immobiliser systems, transponder keys can be programmed into the Immobiliser memory so that they may start the vehicle. For Central locking or Anti-theft warning systems, the remote key fob can be programmed into the ECU so that it may be used to remotely operate the door locks.
For immobilisers and Anti theft warning systems a four-digit pass code must be entered before programming is allowed by the ECU. On entering the programming menu, you will be asked for a four-digit pass code for the car. This code can be found on the car pass supplied with the vehicle, and is used to prevent unauthorized access to the key programming functions. If the car pass is not available, the code can be obtained from a main dealer. The vehicle registration detail will be required.

If an incorrect code is entered, you will be prompted to try again. It is important to enter the pass code carefully as the ECU will activate its security timer if an invalid pass code in entered. In this mode it will be impossible to erase or program keys until the security wait time has expired.
Once the correct pass code is entered, the programming menu will be displayed.

For immobiliser systems, the following options are available:

- Erase transponder key
  This function will erase all programmed transponder keys from the immobiliser memory. After this function has been used, none of the vehicle keys will start the engine until they are pre-programmed into the immobiliser. If a key has been lost, it is

recommended to erase all keys before programming the new keys, to ensure that the immobiliser will only recognize the keys held by the vehicle owner.

- Program transponder key
  This function will program a new transponder key in the immobiliser memory so that the key will be able to start the engine. You will be prompted to insert the key to be programmed into the ignition. Then follow the on-screen instructions to program the new key.

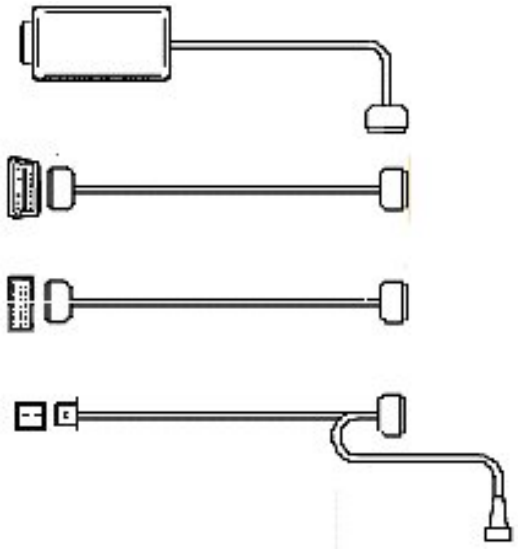
For Central locking or Anti theft warning ECUs, the following menu will be displayed.

- Erase remote keys
  This function will erase all programmed remote keys. After this function has been used, none of the vehicle's remote keys will operate the door locks until they are re-programmed.
  If a remote key has been lost, it is recommended to erase all keys before programming the new keys, to ensure that the central locking will only recognize the keys held by the vehicle owner.

- Program remote key
  This function will program a new remote key so that the key will be able to operate the door locks. You will be prompted to activate the remote key several times by pressing the button on the key fob. This is necessary for the central locking ECU to record a unique code for the remote key fob.

# Peugeot-Citroen

## Adapters



A0901051

A0903011-1

A0903051

A0904051

## Diagnostic connector location

| Adapter | System | Connector Location |
|---|---|---|
| 2 pin cable (A0904051-1) | Engine Green | Located in Engine compartment near ECM or battery box. |
| | ABS Grey | Located in Engine compartment near ECM or battery box. |
| | Airbag White | Located in Engine compartment near ECM or battery box. |
| 16 pin OBD cable (A0903011-1) | All | Located under driver's side fascia along side fuse-box, or driver's side plastic fascia cover or passenger side under fascia. |
| 30 pin cable (A0903051-1) | All | located under the drivers side fascia, along side the fuse box or passenger side under fascia. |

Jumper/Relay/Boxer - may be located passenger side, behind fascia at the side of glove box.

# Service light resetting

## Citroën

Saxo 1999 –
Button located at the left hand side of speedometer
Switch the ignition off. Press and hold button. Switch on the ignition.
Keep the button depressed for 10 seconds.
The “spanner” symbol will go out and the display read 0.

Xantia 1997-
Button located within speedometer dial.
Switch the ignition off. Press and hold button. Switch on the ignition.
Keep the button depressed.
Service Interval and “spanner” symbol will illuminate for five seconds.

Xsara 1997-
Button located at the right hand side of the speedometer dial.
Switch the ignition off. Press and hold button. Switch on the ignition.
Keep the button depressed
Service Interval and “spanner” symbol will illuminate for five seconds.

Synergie / Evasion 1999-
Dispatch/Jumpy 1999-
Button located within speedometer dial.
Switch the ignition off. Press and hold button. Switch on the ignition.
Keep the button depressed for 10 seconds.
The “spanner” symbol will go out and the display read 0.

## Peugeot

206 1998-
Button located beneath the speedometer dial.
Switch the ignition off. Press and hold button. Switch on the ignition.
Keep the button depressed for 10 seconds.
The “spanner” symbol will go out and the display read 0.

306 1996-
Button located to the left hand side of the speedometer dial.
Switch the ignition off. Press and hold button. Switch on the ignition.
Keep the button depressed for 10 seconds.
The “spanner” symbol will go out and the display read 0.

406 1998-
Button located beneath and to the right hand side of the speedometer dial.
Switch the ignition off. Press and hold button. Switch on the ignition.
Keep the button depressed for 10 seconds.
The “spanner” symbol will go out and the display read 0.

# Key Fob (PLIP) Learn Sequence

Following transponder key programming it may be necessary to learn the high frequency remote locking PLIP feature. The procedures for each model are detailed below.

106 and Saxo Remote Central Locking
1. Lock and unlock the driver’s door using a working key.
2. Press the LOCK button twice within 20 seconds.

206, Xsara and Xantia Central Locking (1 button PLIP)
1. Unlock all doors using a working key.
2. Depress and hold the PLIP button until the LED stops flashing.
3. Release, and press the button once, and the LED will extinguish.
4. Insert the key in the ignition barrel and switch to the ON position, wait 10 seconds then switch to OFF

206, 406, Xsara and Xantia Deadlocking (2 button PLIP)
1. Unlock all doors using a working key.
2. Depress and hold the large PLIP button for 20 seconds while the LED is flashing.
3. While still holding down the large PLIP button, press the smaller deadlocking button once. The LED will stop flashing at this point.
4. Release, and press the large PLIP button once and the LED will extinguish.
5. Insert the key in the ignition barrel and switch to the ON position, wait 10 seconds then switch to OFF

### 306, 806 Central Locking (2 button PLIP)

1. Remove the PLIP remote from the Key Ring.
2. Switch the ignition to Auxiliary.
3. Hold the PLIP remote close to the central locking receiver (roof console).
4. Press the large PLIP button, then the small PLIP button, repeat for additional remote if available.
5. Switch the ignition to OFF

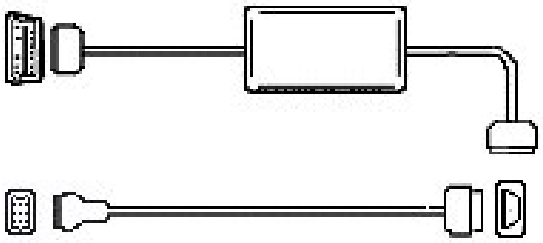
### 406 and 605 Deadlocking ( 1 button PLIP)

These vehicles are supplied new with a Primary and a Secondary PLIP. There are labelled inside PRIM or SEC.

1. Insert the key in the ignition barrel and switch the ignition to ON
2. Press the large PLIP button for the Primary PLIP.
3. Repeat for the Secondary PLIP within 10 seconds.
4. Switch the ignition to OFF.

# Renault

## Adapters



A0901091-1

A0903091-1

## Diagnostic connector location

| Model | Adapter | Connector Location |
|---|---|---|
| R5, R21 | 16-12 pin (A0903091-1) | On the front of bulkhead. |
| R19 | 16-12 pin (A0903091-1) | At the side of passenger glove box. |
| Alpine | 16-12 pin (A0903091-1) | Rear suspension strut top. |
| Clio→97 | 16-12 pin (A0903091-1) | Passenger glove box. |
| Clio 98→ | 16 pin OBD cable (A0901091-1) | In front of gear stick. |
| Megane /Scenic | 16 pin OBD cable (A0901091-1) | Drivers side under dashboard. |
| Laguna →96 | 16-12 pin (A0903091-1) | On the bulkhead. |
| Laguna 97→ | 16 pin OBD cable (A0901091-1) | In front of gear stick. |
| Safrane | 16-12 pin (A0903091-1) | On the bulkhead. |
| Safrane | 16 pin OBD cable (A0901091-1) | Behind the gear stick. |
| Espace →95 | 16-12 pin (A0903091-1) | Front bonnet slam panel. |

| Model | Adapter | Connector Location |
|---|---|---|
| Espace 96→ | 16 pin OBD cable (A0901091-1) | Passenger footwell. |
| Traffic | 16-12 pin (A0903091-1) | On the bulkhead |
| Traffic | 16 pin OBD cable (A0901091-1) | Under drivers side dash. |

# Service Light Resetting

## Laguna

The reset button is located under the speedometer on the instrument cluster.
Switch ignition on.

1. Switch ignition on.
2. Press reset button until “spanner “ symbol flashes.
3. Keep button depressed until “spanner” symbol stops flashing and remains illuminated.
4. Indicator shows appropriate service interval.
5. Release reset button.
6. Switch ignition off.

## Safrane

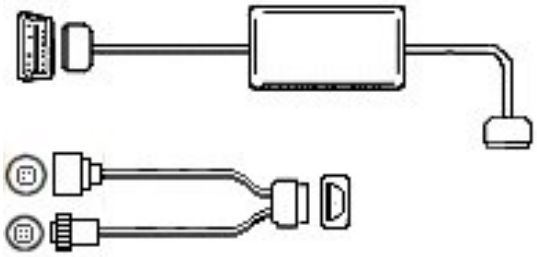
The reset button is located on the bottom right hand side of the Rev counter on the instrument cluster.

1. Switch ignition on.
2. Press reset button until “spanner “ symbol flashes.
3. Keep button depressed until “spanner” symbol stops flashing and remains illuminated.
4. Indicator shows appropriate service interval.
5. Release reset button.
6. Switch ignition off.

Some vehicles are fitted with a “Serv” lamp, this is not a service interval indicator lamp. It is a malfunction indicator lamp (MIL).

# Rover

## Adapters



A0901111-1

A0903111-1

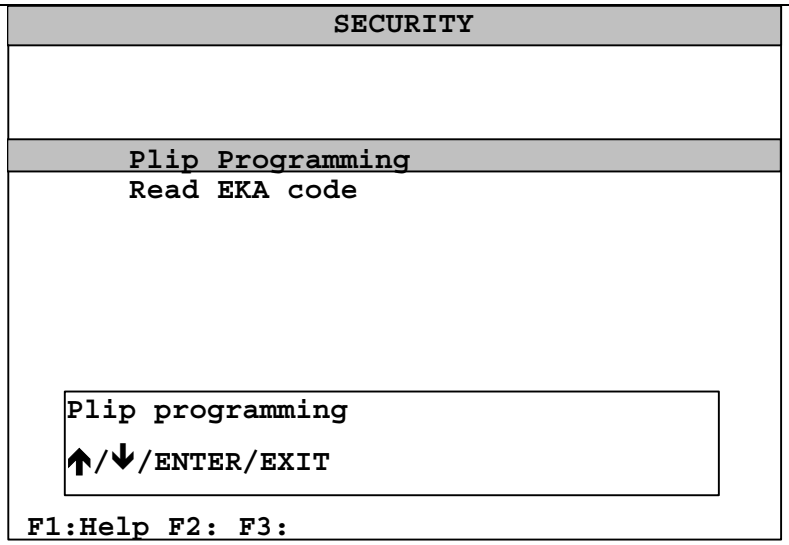
## Diagnostic connector location

| Model | Connector Type | Connector Location |
|---|---|---|
| Rover 100 | 16 pin OBD cable (A0901111-1) | In fuse compartment |
| Rover 200 | 16 pin OBD cable (A0901111-1) | Behind central column, on the end of a free cable. |
| Rover 200 | MEMS | In engine bay beside ECU |
| Rover 200 | Security 3-pin | Rear of engine bay |
| New Rover 200 | 16 pin OBD cable (A0901111-1) | Drivers side, On side of central column. |
| Rover 400 | 16 pin OBD cable (A0901111-1) | Above pedals, on the end of a free cable. |
| Rover 400 | MEMS | In engine bay beside ECU |
| Rover 400 | Security 3-pin | Rear of engine bay |
| New Rover 400 | 16 pin OBD cable (A0901111-1) | Drivers side, On side of central column. |
| Rover 600 | 16 pin OBD cable (A0901111-1) | In front of drivers seat above pedals |
| Rover 600 | Honda PGM-Fi | Passenger footwell, behind triangular panel just in front of door hinge. |
| Rover 800 | 16 pin OBD cable (A0901111-1) | Drivers side of central column |
| Rover 800 | MEMS | In engine bay beside ECU |

| Model | Connector Type | Connector Location |
|---|---|---|
| Rover 800 | MEMS | In engine bay beside ECU |
| Rover 800 | Security 4-pin | Bottom of dash, below steering wheel. |
| Rover 25 | 16 pin OBD cable (A0901111-1) | Drivers side, On side of central column. |
| Rover 45 | 16 pin OBD cable (A0901111-1) | Drivers side, On side of central column. |
| Rover 75 | 16 pin OBD cable (A0901111-1) | In front of drivers seat above pedals |
| Metro | 16 pin OBD cable (A0901111-1) | In fuse compartment |
| Metro | MEMS | In engine bay beside ECU |
| Metro | Security 3-pin | Rear of engine bay |
| MGF | 16 pin OBD cable (A0901111-1) | In Fuse compartment in front of drivers seat |
| MG-ZR | 16 pin OBD cable (A0901111-1) | Drivers side, On side of central column. |
| MG-ZS | 16 pin OBD cable (A0901111-1) | Drivers side, On side of central column. |
| MG-ZT/ZTT | 16 pin OBD cable (A0901111-1) | In front of drivers seat above pedals |

## Key programming

The application can be used to erase and program transponder keys on vehicles that are equipped with an immobiliser. The following menu will be displayed.




# Plip Programming

Use this option to program new Plips (remote button keys) for the vehicle so that they will operate the locks and alarm. To program new Plips, select this option. All existing Plips will be erased from the Immobiliser memory at this point. You must then press the lock button on the Plip repeatedly until the Horn sounds. This indicates that the Immobiliser has stored the Plip. The Plip code must be read successfully 8 times before it is stored, so it will be necessary to press the lock button at least 8 times before the horn will sound. Repeat this procedure for all Plips to be programmed, and press the ENTER key on the Multi-Tester Pro when finished.

N.B. Because all existing Plips are erased at the start of this procedure, you must re-learn any existing Plips that you still wish to use with the vehicle. It is therefore important that you have all the keys for the vehicle to hand before beginning this procedure.

## Read EKA Code

Under normal circumstances, the only way to disarm the Immobiliser on a Rover vehicle is to use the correct Plip key to unlock the car. If no Plip key is available or functioning, it is possible to disarm the Immobiliser by using the EKA (Emergency Key Access) Code. This option will read the EKA Code from the vehicle and display it on the Multi-Tester Pro screen.
The EKA Code consists of a 4 digit numerical sequence. To use an EKA code to disarm a vehicle, perform the following sequence.

1. Insert the key into the drivers door lock and turn to the lock position.
2. Wait for 5 seconds.
3. Turn the key to the unlock position the number of times indicated by the first digit of the EKA code.
4. Turn the key to the lock position the number of times indicated by the second digit of the EKA code.
5. Turn the key to the unlock position the number of times indicated by the third digit of the EKA code.
6. Turn the key to the lock position the number of times indicated by the fourth digit of the EKA code.
7. Turn the key to the unlock position.

If the EKA code is entered correctly, the Alarm LED will stop flashing, and the engine will start.

If you make an error while entering the EKA code, open and close the driver's door before going back to the start of the sequence. If the EKA code is entered unsuccessfully 3 times, the system will ignore any further attempts for the next 10 minutes.

## Airbag diagnostics

On some models, no serial diagnostics are available with the airbag system. On these systems, faults are reported by means of the Airbag warning light on the dashboard. The Rover models concerned are as follows:

- Metro
- Rover 100
- New Rover 400
- Rover 600

## ED3 Airbag

For the ED3 system on Metro, Rover 100, and New Rover 400 vehicles, the airbag warning light has the following meaning.

| Warning light behavior when ignition is switched on. | Meaning |
|---|---|
| Comes on then goes off after 3 seconds. | No fault in system |
| Comes on and stays on | Fault in airbag module, SRS ECU, cabling, or airbag module connector |
| Comes on, goes off after 3 seconds, then comes back on and remains on. | Fault in airbag module, SRS ECU, cabling, or airbag module connector |
| Does not come on at all | Fault with SRS Fuse, Rotary coupler, Airbag module, SRS ECU, or main wiring harness |

## EC3 Airbag

For the EC3 system on New Rover 400, the airbag warning light has the following meaning.

| Warning light behavior when ignition is switched on. | Meaning |
|---|---|
| Comes on then goes off after about 3 seconds | No fault in system |
| Comes on and then stays on | Fault with SRS ECU, connector or harness |
| Gives a single flash | Fault in drivers airbag circuit |
| Gives a double flash | Fault in passengers airbag circuit |
| Gives a triple flash | Leak in airbag circuits |
| Does not come on at all | Fault with : Warning lamp, supply to instrument pack, SRS harness, SRS ECU |

## Honda SRS Type III

For the Honda SRS system used on Rover 600 and New Rover 400, the airbag warning light has the following meaning.

| Warning light behavior when ignition is switched on. | Meaning |
|---|---|
| Comes on then goes off after about 6 seconds | No fault in system |
| Comes on and then stays on | Fault in airbag system. Refer to blink codes (See below) |
| Comes on, goes off after about 6 seconds, Then comes back on and stays on | Fault in airbag system. Refer to blink codes (See below) |
| Comes on and then stays on | Fault in warning lamp circuit |

If a fault is indicated on the Honda airbag system, a blink code readout can be obtained by shorting the two pins of the SCS diagnostic connector, which can be found behind the glove box.

With the pins shorted, switch on the ignition. The SRS warning light will come on for up to 30 seconds and then go out. It will then indicate the stored blink codes. Each fault code has two digits. The first digit is represented by a series of one-second blinks. The second digit is represented by a series of half-second blinks. There will be a two-second gap between each digit and also between each fault code. The meaning of each blink code is described in the following table.
For continuous failures, the blink codes will be repeated.
For intermittent failures, the blink codes are reported once only then the SRS light will stay on.
If there are no SRS faults to report, the light will remain on.

| Blink Code | Meaning |
|---|---|
| 1-1 | High resistance in drivers airbag circuit |
| 1-3 | Low resistance in drivers airbag circuit |
| 1-4 | Short to supply in drivers airbag circuit |
| 1-5 | Short to ground in drivers airbag circuit |
| 2-1 | High resistance in passengers airbag circuit |
| 2-3 | Low resistance in passengers airbag circuit |
| 2-4 | Short to supply in passengers airbag circuit |
| 2-5 | Short to ground in passengers airbag circuit |

| | |
|---|---|
| 5-1 | ECU internal fault |
| 5-3 | ECU internal fault |
| 5-4 | ECU internal fault |
| 6-3 | ECU internal fault |
| 6-4 | ECU internal fault |
| 7-1 | ECU internal fault |
| 7-2 | ECU internal fault |
| 7-3 | ECU internal fault |
| 8-1 | ECU internal fault |
| 8-2 | ECU internal fault |
| 8-6 | ECU internal fault |
| 9-1 | Fault in SRS warning light circuit. |
| 9-2 | Fault in SRS power supply circuit. |
| 10-1 | ECU internal fault |

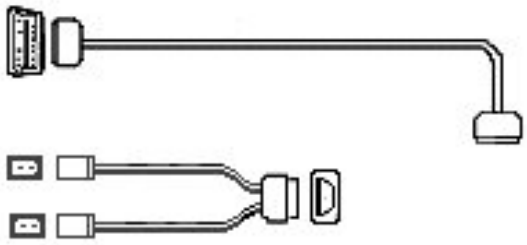
## New Rover 400

On the New Rover 400 model, three different types of airbag system can be fitted. To determine which type of airbag is in use, consult the following rules.

- 416 Auto 5 door with VIN up to 250028 uses Honda type III SRS
- All other models if fitted with drivers airbag only, use ED3
- All other models if fitted with drivers and passengers airbags use EC3

# VAG

## Adapters



A0901021-1

A0903021-1

## Diagnostic connector location

| Model | Adapter | Connector Location |
|---|---|---|
| Audi 80<br>1992→ | | Fuse box engine compartment. |
| Audi 100<br>1991→ | | In relay centre 1 in the plenum chamber. |
| Audi A3<br>1997→ | | Beneath a cover beneath the ashtray. |
| Audi A4<br>1997→ | | Beneath a cover in the rear seat ashtray |
| Audi A6<br>1997→ | | Under steering column on the left side |
| Audi A8<br>1994→ | | Beneath a cover beneath the ashtray |
| Audi TT<br>1998→ | | Under dashboard drivers side |
| Seat Alambra | | Beneath the ashtray/storage bin |
| Seat Arosa<br>1997→ | | Under dashboard in fuse box |
| Seat Ibiza<br>1993→ | | Drivers side glove compartment |
| Seat Cordoba<br>1993→ | | Drivers side glove compartment |

| | | |
|---|---|---|
| Seat Toledo 1999 | | Under cover below steering wheel |
| Seat Toledo 1999→ | | Under cover in front of the gear lever |
| Skoda Felicia | | Passenger side below dashboard |
| Skoda Fabia 2000→ | | Drivers side glove box |
| Skoda Octavia | | Beneath the steering wheel |
| VW Beetle 1998→ | | Beneath a cover beneath the ashtray |
| VW Bora 1997→ | | Under cover in front of the gear lever |
| VW Caddy 1996→ | | In the left storage bin |
| VW Corrado | | Close to gear lever |
| VW Golf 1992 | | Beneath cover behind hot air inlet |
| VW Golf 1993→1997 | | Beneath a cover behind the ashtray |
| VW Golf 1998→ | | Beneath a cover in front of the gear lever |
| VW Lupo 1998→ | | Behind storage centre console |
| VW Lupo 1998→ | | Under front ashtray |
| VW Passat 1994→1996 | | Beneath a cover on the right of the steering wheel |
| VW Passat 1997→ | | Beneath a cover beside the hand brake lever cover |
| VW Polo 1995→ | | In the left storage bin |
| VW Polo Classic 1996→ | | In the left storage bin |

| | | |
|---|---|---|
| VW Sharan 1996→ | | In the left storage bin |
| VW Transporter 1996→ | | On the right of the steering wheel |
| VW Transporter 1998→ | | Dashboard fuse box |
| VW Vento 1992 | | Beneath the heat/hot air inlet |
| VW Vento 1993→ | | Behind the ashtray |

# Functions

## Read all DTCs

The VAG application allows you to read the DTCs from every ECU in the vehicle. It can take up to 5 minutes to read out all diagnostic trouble codes. You can terminate the function by pressing the EXIT key.
When the Multi-Tester Pro has downloaded information from all ECUs, all DTC memories are displayed. When you press EXIT, the diagnostic trouble codes the Multi-Tester Pro has found so far are displayed.

## Monitor list

The measured values are displayed in groups of four values. These are referred as indication groups. You can change indication group using the arrow keys.
Indication group 000 is a special case. It displays 10 measurement values without units. They are not scaled. Please refer to the service manual to interpret these values.

## Alter adaption values

Adaption values affect the function of the ECU and may not be done without the proper knowledge and information. Incorrect value may impair the vehicle performance and the personal safety for the driver and passengers.

Adjustable values are stored in each ECU such as the idle speed for the engine management unit. The ECU frequently changes these values automatically during operation to adapt to current operating conditions. It is also possible to program in new values using the Multi-Tester Pro.

You can reset adaption values in the ECU.

Please refer to the service manual for an explanation of the adaption values.

### Recode ECU

Recode ECU affects the function of the ECU and may not be done without the proper knowledge and information. Incorrect coding may impair the vehicle performance and the personal safety for the driver and passengers.

Each ECU has a code which describes the type of vehicle the ECU is installed in, and what is connected to the ECU. For example, a code can describe for an engine management unit that the car is fitted with automatic transmission.

Please refer to the service manual for an explanation of these codes.

## Key programming

This function automates the process of programming transponder keys on vehicles equipped with an immobiliser. This function can be used on all Volkswagen, Audi, Seat and Skoda vehicles. It may also be used on Ford Galaxy vehicles which use VW engines and immobilisers.
When you select this function you will be asked to specify the number of keys to be programmed, all existing keys will be erased from the immobiliser and only new keys will be recognised by the vehicle after the procedure is complete.
On VAG vehicles, a 7 digit enabling code must be entered before the vehicle will allow keys to be programmed. This code can be obtained from VAG dealers. A VAG dealership code must also be entered along with the current date, as the immobiliser ECU also requires

this information. You will be prompted to enter that information before key programming is started.
Once the immobiliser has accepted the enabling code, the key in the ignition will be programmed as the first key. You will then be prompted to insert each remaining key in turn into the ignition to program the remaining keys.
On Ford Galaxy vehicles with VW immobilisers, the enabling code is not required. A 10 minutes access delay is used instead. The application will display the remaining time until security access is granted. Once the security time has expired, key programming will proceed in the same way as for the VAG vehicles.