MAP Manual Processes and Flow Charts

ACR4 G2 Pod Manual processes

This guide provides you with Manual processes and flow charts for your ACR4 G2 Pod.

For more guides visit the SP Diagnostics Support website www.spsupport.com and go to the Products – ACR – Documents section of the site.

Version 1.001

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Airbag Configuration Instructions

1) Introduction

The 'configure' function is necessary following the replacement of an Airbag ECM. This function enables the correct system format to be programmed and saved allowing a system to become active once more. It may also be used to check and change the current configuration on an existing airbag ECM.

WARNING: Due to the safety aspect of this procedure it is essential that all guidelines written and displayed are followed exactly. The airbag configuration function on the Code Reader is only for use in respect of the specific vehicle models specified in the following Vehicle List. This airbag configuration function is not for use in respect of any other vehicle models not specified on the Vehicle List.

2) Functions

The following functions are available under the configuration menu.

- **Arm/Disarm**
  To Arm (system active) or Disarm (system inactive) the Airbag system.
  Note: If the system is Disarmed the Airbag warning lamp will be 'ON' at all times with no fault codes stored.
- **View Current Configuration**
  To display the current configuration programmed to the installed airbag ECM.
- **Copy Current Configuration**
  To copy an existing airbag ECM configuration to the code reader memory and save for future programming.
- **Load Copied Configuration**
  To program a replacement airbag ECM with the previously Copied configuration.
- **Advanced Configuration**
  To complete a manual set-up of all component conditions related to the airbag system. For example the number and type of airbags and pre-tensioners fitted would be set by selecting 'fitted' or 'not fitted' / 'Yes' or 'No'. This should only be used if it is not possible to copy the configuration of the original ECM.

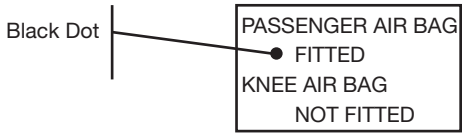
3) Navigation

Follow the on-screen instructions that will guide you through all the steps required to perform any configuration procedure available on the selected Airbag ECM.

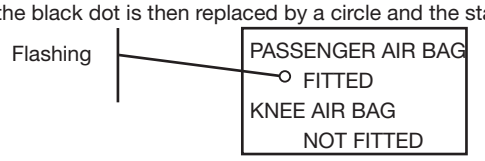
NOTE: Many screens display more than 4 lines of information. Where you see the symbol '↓' on screen you must scroll down through the entire message before being able to continue to the next screen.

In **Advance Configuration** use the following steps to modify the status of a component:

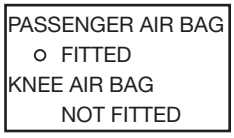
Select the component that you want to change using the up / down arrow. The component selected is identified by a black dot on the left hand side of its status:



Press the **OK** button, the black dot is then replaced by a circle and the status of the component will flash:



Toggle the status using the up / down arrows:



Press the OK button to confirm the change and follow the on-screen prompts to continue in programming the Airbag ECM.

4) Changing an Airbag ECM

When replacing an Airbag ECM, please follow these steps:

Standard Procedure

- Before removing the old Airbag ECM from the vehicle, connect the code reader, select the appropriate system and go to the configuration menu.

  Note: If you can't communicate with the Airbag system due to module failure you will have to use the

  Advance Configuration function.
- Use the option **Copy Current Configuration** to save the existing Airbag data to the code reader internal memory.

- Unplug the code reader and then replace the Airbag ECM.
- Connect the code reader, select the appropriate system and go to the configuration menu.
- Use the **Load Copied Function** to program the new Airbag ECU with the configuration data saved from the old ECM. Follow the on screen instructions to complete programming

  WARNING: It is imperative that you verify the new configuration with the manufacturer data. It is also advisable that you read the fault codes on the new Airbag system after configuration. If fault codes are present, the configuration is probably wrong! If the Airbag light is on, this is also a sign of a wrong Airbag configuration. Refer to the Manufacturer data to fix the problem.

Advance Procedure

- If you cannot communicate with the existing Airbag ECM due to module failure remove this module and fit the replacement the Airbag ECM.
- Establish communication with the new Airbag ECM and then select the **Advance Configuration Function** to configure the new Airbag. You will need specific manufacturer data to select the correct configuration.
- When completed, verify the Airbag configuration data using the **View Current Configuration** against the Manufacturer data.

  WARNING: It is imperative that you verify the new configuration with the manufacturer data. It is also advisable that you read the fault codes on the new Airbag system after configuration. If fault codes are present, the configuration is probably wrong! If the Airbag light is on, this is also a sign of a wrong Airbag configuration. Refer to the Manufacturer data to fix the problem.

Airbag Configuration

							
Citroën Airbag Configuration							
C3	1.4 Hdi	D	1.4	03	8HY	KW2000 SRS	30214600
C5	2.0 Hdi	D	2.0	02	RHZ	KW2000 SRS	30214600
Picasso	2.0 Hdi	D	2.0	03	RHY	KW2000 SRS	30214600
Saxo	1.1	P	1.1	98	HDZ	Autoliv SRS	30214600
Saxo	1.1	P	1.1	00	HFX	KW2000 SRS	30214600
Xantia	1.9 TD	D	1.9	97	DHW	Autoliv SRS	30214600
Xsara	1.9 TD	D	1.9	98	WJZ	Autoliv SRS	30214600
Xsara 2	2.0 Hdi	D	2.0	02	RHY	KW2000 SRS	30214600
Peugeot Airbag Configuration							
106	1.1	P	1.1	98	HDZ	Autoliv SRS	30214600
206	2.0 Gti	P	2.0	99	RFR	Autoliv SRS	30214600
206	2.0 Hdi	D	2.0	02		KW2000 SRS	30214600
306	1.4	P	1.4	98	KFX	Autoliv SRS	30214600
306	1.6	P	1.6	97	NFZ	Autoliv SRS	30214600
306	1.9 TD	D	1.9	99	WJZ	Autoliv SRS	30214600
306	1.9 TD	D	1.9	96	D8A	Autoliv SRS	30214600
306	1.9 TD	D	1.9	98	DHY	Autoliv SRS	30214600
307	2.0 Hdi	D	2.0	02		KW2000 SRS	30214600
406	1.8 16v	P	1.8	01	RHZ	Autoliv SRS	30214600
406	2.0 Hdi	D	2.0	01	RHZ	Autoliv SRS	30214600
406	2.0 Hdi	D	2.0	00	RHY	Autoliv SRS	30214600
406	2.0 Hdi	D	2.0	01-02	4HX/RHY	KW2000 SRSV	30214600
Expert	1.9 D	D	1.9	04	WJY	Autoliv SRS	30214600
Partner	1.4 16v	P	1.4	02	KFW	Autoliv SRS	30214600
Partner	1.9 D	D	1.9	03	WJY	Autoliv SRS	30214600
Renault Airbag Configuration							
Clio 2 ph2	1.2 16V	P	1.2	02	D4F	AB8	30214600
Clio 2 ph2	1.4 16V	P	1.4	03	K4J	AB8	30214600
Clio 2 ph2	1.6 16v	P	1.6	02	K4M	AB8	30214600
Clio 2 ph2	2.0 16v 172	P	2.0	02	F4R	AB8	30214600
Clio 2 ph2	182 Sport	D	2.0	04	F4R	AB8	30214600
Clio 2 ph2	182 cup	D	2.0	04	F4R	AB8	30214600
Clio 2 ph2	182 Trophy	D	2.0	04	F4R	AB8	30214600
Clio 2 ph2	1.5 dci	D	1.5	01-04	K9K	AB8	30214600
Clio 2 ph2	1.5 dci	D	1.5	03	K9K	AB8	30214600
Espace 4	1.9 Dci	D	1.9	03	F9Q	Autoliv ACU 3	30214600
Espace 4	2.2 Dci	D	2.2	02	G9T	Autoliv ACU 3	30214600
Laguna 2	1.6 16v	P	1.6	02	K4M	Autoliv ACU 3	30214600
Laguna 2	1.9 Dci	D	1.9	01	F9Q	Autoliv ACU 3	30214600
Scenic	1.6 16v	P	1.6	01	K4M	Autoliv ACU 3	30214600
Scenic	1.9 Dci	D	1.9	03	F9Q	Autoliv ACU 3	30214600

Tyre Pressure Sensor Configuration

1) Introduction

In essence, tyre pressure monitoring systems comprise of single control unit (ECU) and four active tyre pressure transmitters, one fitted to the base of each tyre valve inside the wheel. The purpose of this system is to constantly monitor the pneumatic tyre pressure of each wheel and to report to the driver (via dashboard warning lights) any readings that fall outside the set limits.

Each valve emits a radio frequency (RF) signal that is received and processed by the ECU. The signal consists of its identification number (up to eight digits) and the measured tyre pressure.

This S-P tyre pressure facility supports all the usual functions such as Read Errors, Clear Errors, Actuators and Components where supported plus a Configuration option that allows various important programming functions (below).

Note: All references to wheel position (e.g. 'Front Left') are made from inside the car.

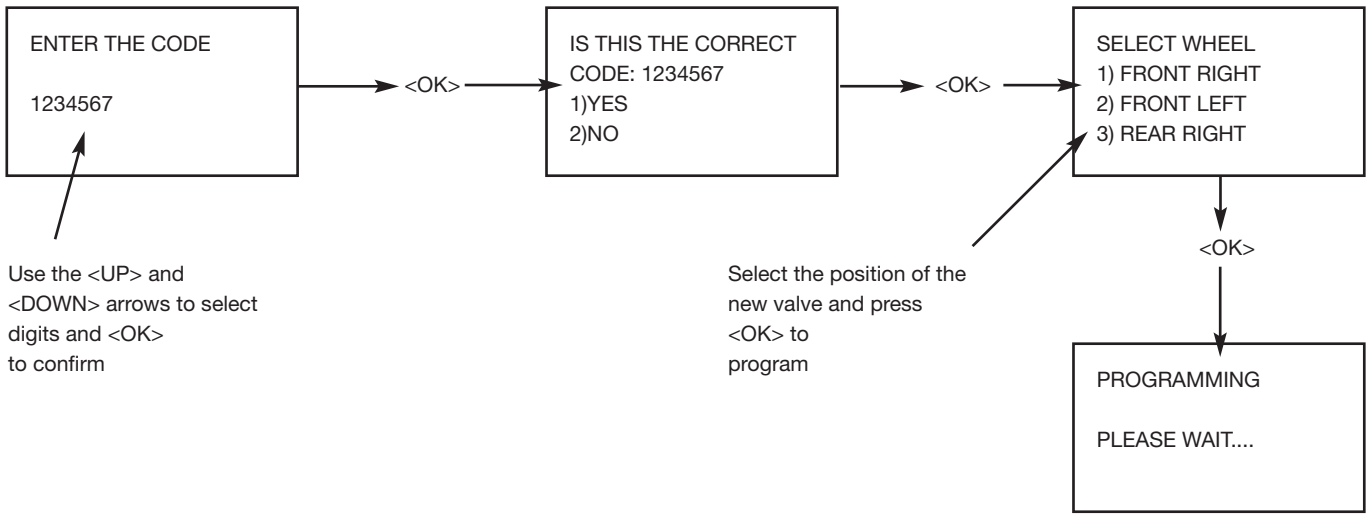
2) Configuration Functions

The following functions are available under the 'configuration' menu item where supported:

- **Program Valve**

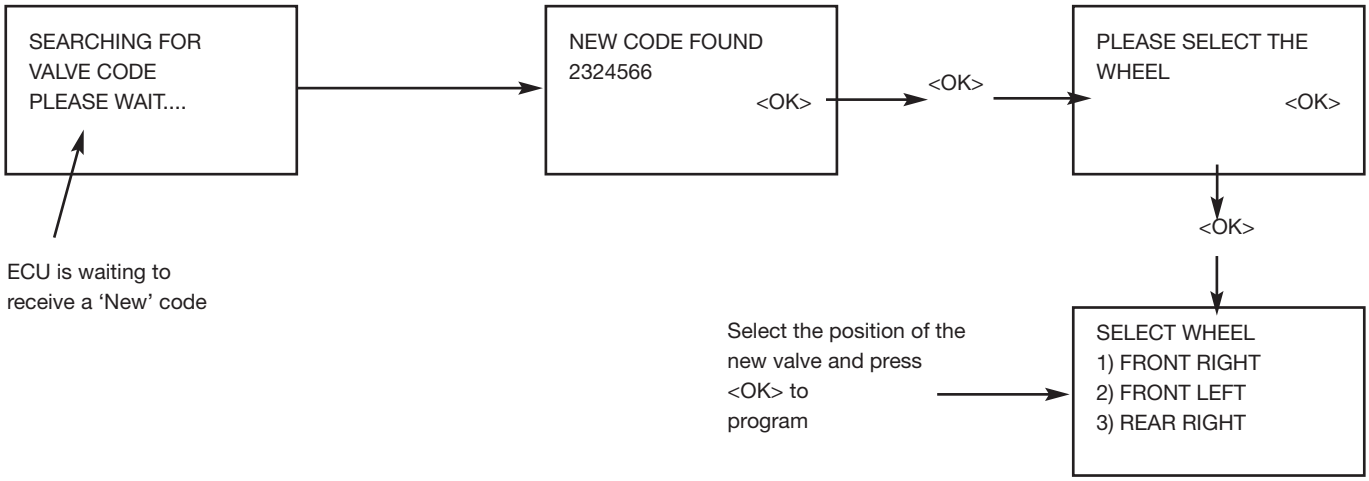
  This function enables a new (or replacement) valve to be programmed to the ECU.

o **Citroën/Renault - Enter Valve Code** – Manually input the code supplied with the new valve using the up and down arrows and then selecting its position:



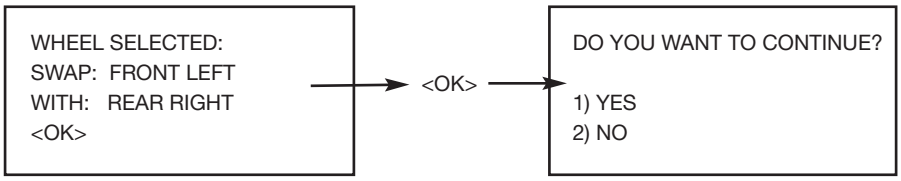
o **Renault - Auto-Detect Code** – If the unique valve code is not known it is still possible for it to be programmed to the ECU. In order to achieve this it is necessary to 'force' the valve to emit its signal at the appropriate point in the programming sequence. This can be achieved by:

1) Deflating the relevant tyre by at least 1 bar whilst stationary.
2) Rotating the relevant wheel at a speed greater than 12mph for approximately two minutes. Note - if only one valve code is unknown the vehicle can be driven at 12mph+ to excite the code.



- **Renault - Swap Wheels**

  This function can be used to swap the position of two wheels on a vehicle. Follow the on-screen instructions to guide you through the process which will ask which wheel is to be removed and then ask for its destination. A confirmation screen will be displayed showing the origin and destination of the wheel and valve. Press <OK> to confirm or <ESC> to quit.



Note: The swap wheels function will only allow a pair of wheels to 'switch' position e.g. Front Left moves to Rear Right then Rear Right must move to Front Left. In situations where this is not the case multiple wheel swap procedures must be carried out in turn to achieve the desired configuration.

Renault visually identifies each wheel position by the use of coloured rings on each of the four valves as follows:

Front Left – Green

Front Right – Yellow

Rear Left – Red

Rear Right – Black

After carrying out the wheel swap function it is recommended to move the rings back to the correct position on the vehicle for future identification.

* **Renault - Change Tyre Set**

This is to be used in circumstances where two complete sets of wheels, tyres and valves are owned and swapped for extreme season/climate differences.

During ECU programming there is the option to install upto two sets of valve identity codes, one set of 'Summer' codes for normal tyres and one set of 'Winter' codes for special cold climate tyres. After a complete set of wheels is changed use this function to select either '1) Summer' or '2) Winter' and press <OK> to complete programming. Check 'Components' for current status.

* **Renault - Set Parameters**

This is to be used to set the recommended low-speed and high-speed pressure parameters for the front and rear axles if an ECU is replaced (or for any other appropriate reason). Once selected, this function will allow each of the four values (high and low speed pressures on each of the axles) to be set and programmed. If pressures are detected outside of these set parameters a fault code will be logged and the dashboard's warning indicator will illuminate. To check the current settings select 'Components'.

GM Key Programming

Astra H	1.2	P	1.2	06	Z12XEP	30214100
Astra H	1.3 CDTi	D	1.3	05-06	Z13DTH	30214100
Astra H	1.4 16v	P	1.4	04-06	Z14XEL	30214100
Astra H	1.4L SFI	P	1.4	05-06	Z14XEP	30214100
Astra H	1.6L SFI	P	1.6	04-06	Z16XEP	30214100
Astra H	1.6	P	1.6	06	Z16XER	30214100
Astra H	1.7L	D	1.7	04-06	Z17DTH	30214100
Astra H	1.7L	D	1.7	04-06	Z17DTL	30214100
Astra H	1.8L SFI	P	1.8	04-06	Z18XE	30214100
Astra H	1.8	P	1.8	06	Z18XER	30214100
Astra H	1.9 CDTi	D	1.9	06	Z19DT	30214100
Astra H	1.9 CDTi	D	1.9	05-06	Z19DTH	30214100
Astra H	2.0 Turbo	P	2.0	04-06	Z20LEL	30214100
Astra H	2.0 Turbo	P	2.0	04-06	Z20LER	30214100
Astra H	2.0 Turbo VXR	P	2.0	05-06	Z20LEH	30214100
Vectra C/Signum	1.6	P	1.6	02-06	Z16XE	30214100
Vectra C/Signum	1.6	P	1.6	06	Z16XEP	30214100
Vectra C/Signum	1.8L SFI	P	1.8	02-06	Z18XE	30214100
Vectra C/Signum	1.8	P	1.8	06	Z18XER	30214100
Vectra C/Signum	1.8	P	1.8	06	Z18XEL	30214100
Vectra C/Signum	1.9L CDTi	D	1.9	04-06	Z19DT	30214100
Vectra C/Signum	1.9L CDTi	D	1.9	04-06	Z19DTH	30214100
Vectra C/Signum	2.0L DIESEL	D	2.0	02-06	Y20DTH	30214100
Vectra C/Signum	2.0L SFI	D	2.0	04-06	Z20NET	30214100
Vectra C/Signum	2.2L DIESEL	D	2.2	03-06	Y22DTR	30214100
Vectra C/Signum	2.2L SFI	P	2.2	02-06	Z22SE	30214100
Vectra C/Signum	2.2L SFI	P	2.2	03-06	Z22YH	30214100
Vectra C/Signum	2.8 V6 Turbo	P	2.8	06	Z28NEL	30214100
Vectra C/Signum	2.8 V6 Turbo	P	2.8	0-06	Z28NET	30214100
Vectra C/Signum	3.0L Diesel	D	3.0	03-06	Y30DT	30214100
Vectra C/Signum	3.0 CDTi	D	3.0	05-06	Z30DT	30214100
Vectra C/Signum	3.2 V6	P	3.2	03-06	Z32SE	30214100
Zafira-B	1.6	P	1.6	05-06	Z16XEP	30214100
Zafira-B	1.8	P	1.8	05-06	Z18XER	30214100
Zafira-B	1.9	D	1.9	05-06	Z19DT	30214100
Zafira-B	1.9	D	1.9	05-06	Z19DTH	30214100
Zafira-B	2.0	D	2.0	05-06	Z20LER	30214100
Zafira-B	2.0	D	2.0	05-06	Z20LEH	30214100
Zafira-B	2.2	D	2.2	05-06	Z22YH	30214100

1) **Introduction**

This function gives you the ability to add additional keys to any of the vehicles mentioned in the list. In order to carry out this procedure, you will require the following:

- A new key which has already been cut.
- The correct transponder fitted in the key.
- The key security code.

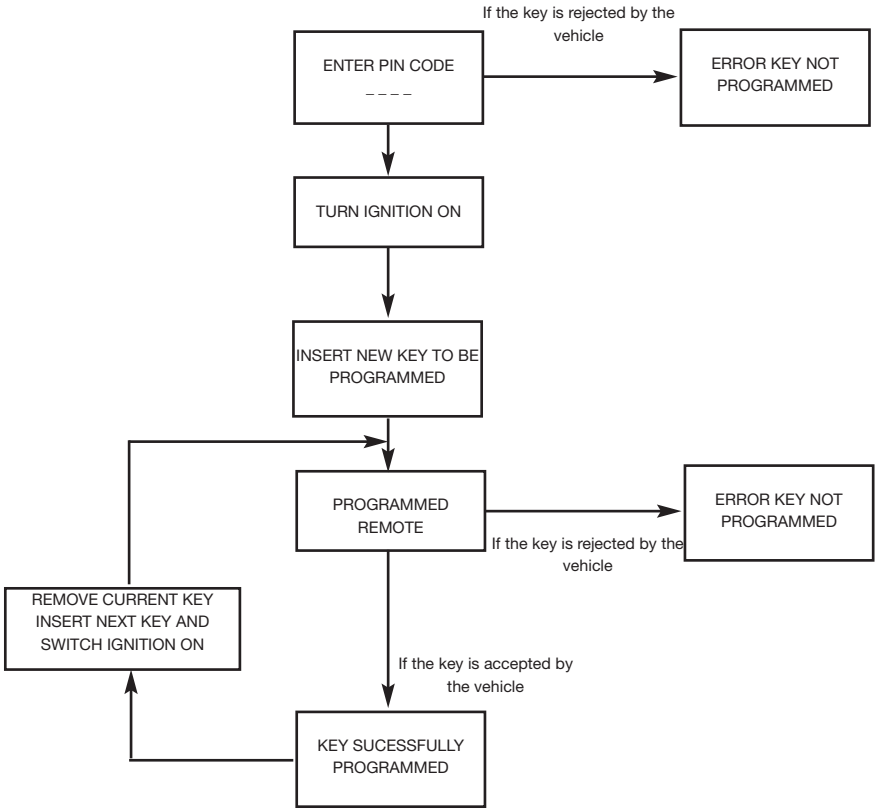
These are critical to completing the operation successfully. If you try to complete this function without all of the above, then the operation will fail, and the new key will not work in the vehicle.

2) **Key Programming Operation**

- You will be requested to enter the security code for the vehicle. This is unique to every vehicle and needs to be entered before you can proceed. If you enter the wrong security code, then the system will not allow you to proceed with the operation.
- Insert the new key into the ignition and turn on.
- Run the application.
- When asked enter the security code.
- The key and remote will now be programmed.

GM Key Programming

- The key should now be successfully programmed.
- You are required to remove the key.
- There is a maximum of 5 keys that can be programmed to the vehicle.



VAG Key Programming

Audi	A2	ALL	ALL	00-04	ALL	30214600
Audi	A3	ALL	ALL	95-03	ALL	30214600
Audi	A4	ALL	ALL	95-03	ALL	30214600
Audi	A6	ALL	ALL	96-03	ALL	30214600
Audi	A8	ALL	ALL	96-03	ALL	30214600
Audi	Cabriolet	ALL	ALL	95-98	ALL	30214600
Audi	S3	ALL	ALL	95-03	ALL	30214600
Audi	S4	ALL	ALL	97-03	ALL	30214600
Audi	TT	ALL	ALL	98-03	ALL	30214600
Seat	Alhambra	ALL	ALL	95-04	ALL	30214600
Seat	Arosa	ALL	ALL	97-03	ALL	30214600
Seat	Cordoba	ALL	ALL	95-01	ALL	30214600
Seat	Ibiza	ALL	ALL	95-03	ALL	30214600
Seat	Leon	ALL	ALL	95-03	ALL	30214600
Seat	Toledo	ALL	ALL	95-02	ALL	30214600
Skoda	Fabia	ALL	ALL	99-04	ALL	30214600
Skoda	Felicia	ALL	ALL	95-01	ALL	30214600
Skoda	Octavia	ALL	ALL	96-04	ALL	30214600
Volkswagen	Beetle	ALL	ALL	98-04	ALL	30214600
Volkswagen	Bora	ALL	ALL	97-01	ALL	30214600
Volkswagen	Caddy	ALL	ALL	94-01	ALL	30214600
Volkswagen	Corrado	ALL	ALL	95	ALL	30214600
Volkswagen	Golf	ALL	ALL	95-04	ALL	30214600
Volkswagen	Lupo	ALL	ALL	98-03	ALL	30214600
Volkswagen	Passat	ALL	ALL	95-03	ALL	30214600
Volkswagen	Polo	ALL	ALL	95-04	ALL	30214600
Volkswagen	Sharan	ALL	ALL	95-03	ALL	30214600
Volkswagen	Vento	ALL	ALL	95-98	ALL	30214600

1) **Introduction**

This function gives you the ability to add additional keys to any of the vehicles mentioned in the list. In order to carry out this procedure, you will require the following:

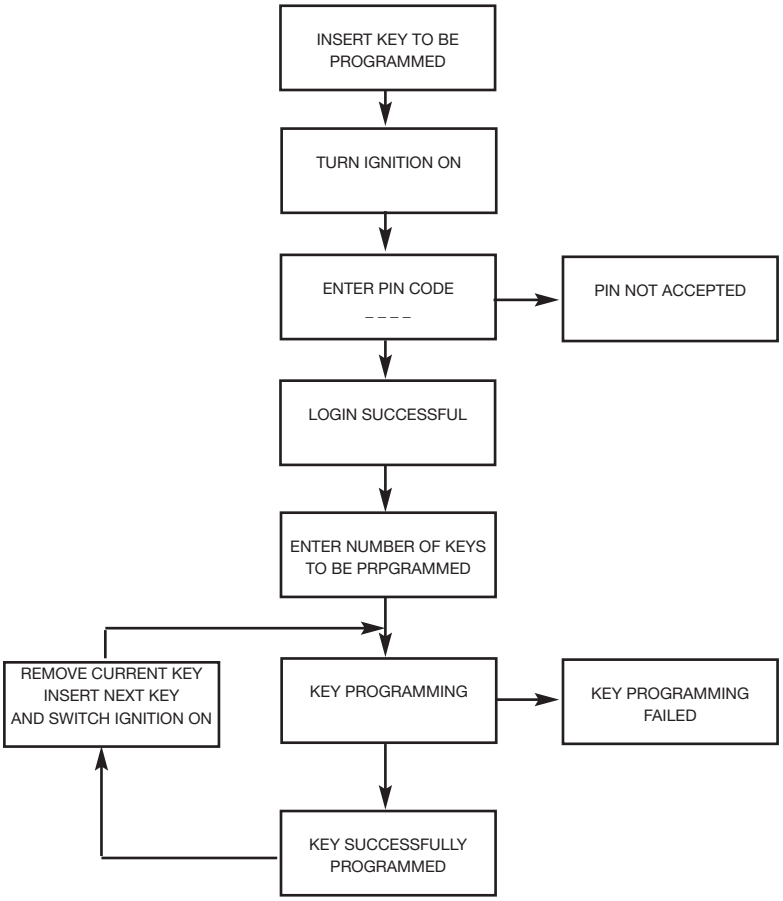
- A new key which has already been cut.
- The correct transponder fitted in the key.
- All other keys for the vehicle are present.
- You have obtained the 4 Digit pin code.

These are critical to completing the operation successfully. If you try to complete this function without all of the above, then the operation will fail, and the new key will not work in the vehicle.

2) **Key Programming Operation**

- You will be requested to enter the security code for the vehicle. This is unique to every vehicle and needs to be entered before you can proceed. If you enter the wrong security code, then the system will not allow you to proceed with the operation.
- Insert a key into the ignition and turn on.
- Run the application.
- When asked enter the security code.
- Enter the number of keys you require programming.
- First key is programmed.
- You are required to remove the key and insert the next key.
- Repeat this process for all keys.

VAG Key Programming



VAG – Chassis Type locations for CAN Vehicles.

On newer vehicles within the VAG range you are required to use the CAN Harness (30214100) on certain vehicles, as they now communicate using the CAN protocol.

To help you identify if you require the use of the CAN harness, please refer to the list below and compare against the Chassis type number for the vehicle you are attempting to communicate with.

If the Chassis type number appears in the list below, you ARE required to use the CAN Harness.

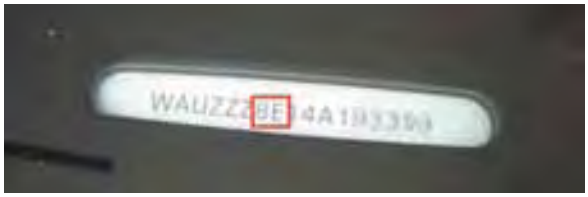
- All Golf-V platform cars (A5 platform) including:
  - 2003+ VW Touran (**1T** chassis)
  - 2004+ VW Golf (**1K** chassis)
  - 2004+ VW Caddy (**2K** chassis)
  - 2004+ Audi A3 (**8P** chassis)
  - 2004+ Seat Altea (**5P** chassis)
  - 2004+ Skoda Octavia (**1Z** chassis)
  - 2005+ Seat Toledo (**5P** chassis)
  - 2005+ Golf Plus (**5M** chassis)
  - 2005+ Seat Leon (**1P** chassis)
  - 2005.5+ Jetta (**1K** chassis)
  - 2006+ Eos (**1F** chassis)
- 2003+ Audi A8 and A8L (D3 platform, **4E** chassis)
- 2005+ Audi A6 (C6 platform, **4F** chassis)
- 2005+ Audi A4 ("B7" platform) (some control modules)
- 2005.5+ VW Passat (B6 Platform, **3C** chassis)
- 2006+ Audi Q7 (**4L** chassis)
- 2007+ Audi TT (**8J** chassis)

To help you Identify which Chassis Type number the vehicle has, please refer to the 2 photos below, which show you where the VIN number is located.

Picture 1 Is the Chassis type number found at the bottom of the windscreen on all of the VAG Range of vehicles.

The 8E Identifies this particular vehicles Chassis type number.

In this case the vehicle is not on the CAN protocol and so the ISO Harness (30214600) is required.



In Picture 2 the Chassis type number is again visible, along with the Engine code (BDG)

Electronic Park Brake (EPB) System - VW Passat 2006 onwards

1) Introduction

From approximately 2006, all VW Passat vehicles with the 3C chassis can now be fitted with the option of an Electronic Parking Brake (EPB) system.

The EPB system is designed to control the rear parking brake by the use of two control motors located on each of the rear brake callipers.

The two control motors are used instead of conventional hand brake cables to engage and release the parking brake on the vehicle.

The two control motors are operated by a separate EPB control module, and are automatically engaged when the ignition is switched "OFF" or when the driver operates the EPB hand brake button (usually located next to the lighting switch in the instrument cluster).

2) Servicing

In order for a technician to carry out service repair work on the rear braking system of the vehicle, the EPB system needs to be configured before repair work can be carried out. This can only be achieved by using diagnostic equipment.

The software provided on the ACR MAP / VAG pod's allows the technician to configure the EPB system to either "Open Park Brake", "Close Park Brake" and carry out a "Basic settings" operation.

If any component from the braking system is replaced, then you are required to carry out the “Basic Settings” procedure. If however no components are replaced, there is no need to carry out the “Basic Settings” procedure.

3) ACR EPB menu

a) Open Park Brake

This option in the ACR EPB menu, instructs the EPC control module to release both rear parking brakes to allow the technician to service:

- Rear brake pads
- Rear brake callipers
- Rear brake discs
- Rear hubs
- Rear parking brake control motors

b) Close Park Brake

This option in the ACR EPB menu, instructs the EPB control module to engage both rear parking brakes to ensure correct operation of the vehicles EPB system, after servicing of the rear brake system has been completed.

c) Basic Settings

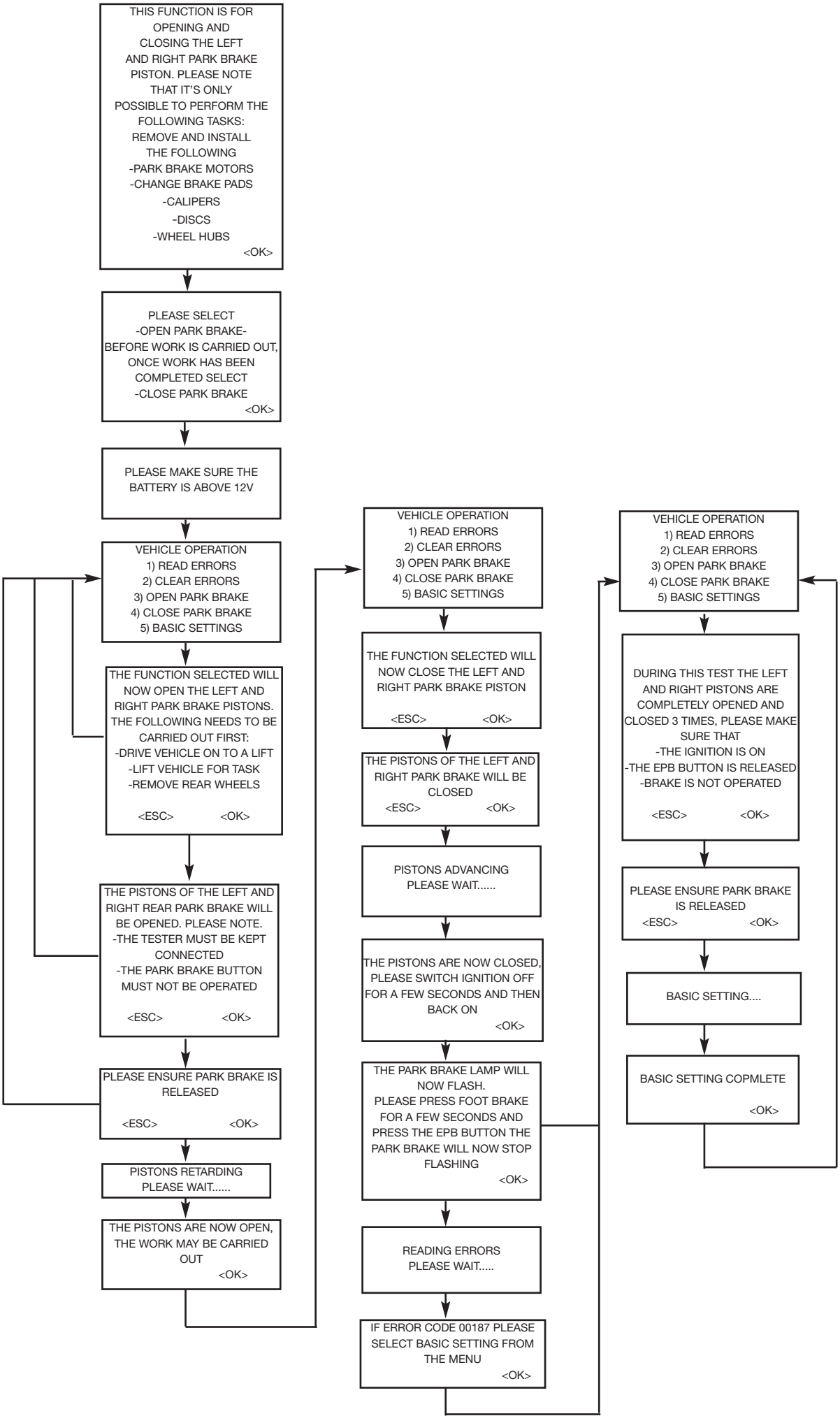
This option in the ACR EPB menu is used if either a diagnostic fault code has been retrieved for the EPB system, or after carrying out servicing of the rear braking system where it will be necessary to carry out the "Basic setting" operation from the ACR EPB menu.

The "Basic settings" is where the EPB control module tests the operation of both the left and right control motors, by forcing the two parking brake control motors to fully open and close 3 times to test the operation of the EPB system.

If no faults are diagnosed on the EPB system, the ACR will display "No Codes Read" after the test and the technician can then remove the ACR & harness lead from the vehicle.

If faults are still present on the EPB system, the ACR will display the diagnostic fault codes, and the technician will be required to repair the EPB system.

Electronic Park Brake (EPB) System - VW Passat 2006 onwards



Peugeot, Citroen FAP systems

The FAP system is designed to reduce Diesel Particulate levels in Exhaust emissions through Filtration. The System traps particulates in the exhaust filter which are then burnt off, This Burn off is achieved by raising the temperature of the exhaust gas to approx 500°C, this is achieved by the addition of the fuel additive to the diesel prior to combustion. The additive is stored in a tank located inside the main fuel tank and is injected into the main fuel tank when the system detects a change in the fuel level detected by the Fuel Level sensor. It is necessary to service the particulate filter every 40,000 to 50,000 miles.

Procedure

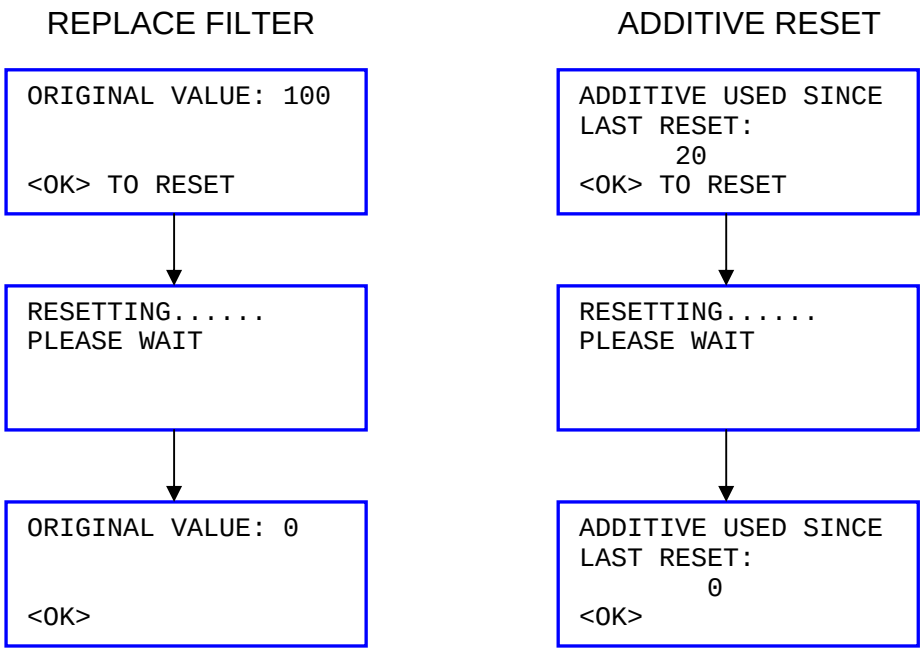
1. Fill the additive tank. When the reservoir is empty (approx 5L capacity) you usual find that the filter has come to the end of its serviceable life,

2. Replace the Filter and the select “REPLACE FILTER” to tell the ECU that a new filter has been fitted.

3. Reset the total quantity injected from the reservoir to zero by selecting “ADDITIVE RESET”

4. Disconnect the diagnostic tester and within the next minute open the fuel filler cap for more than 5 seconds then close it.

5. If the additive reservoir or additive pump is changed, run the Additive pump actuator tests to re-prime the pipe leading to the fuel tank

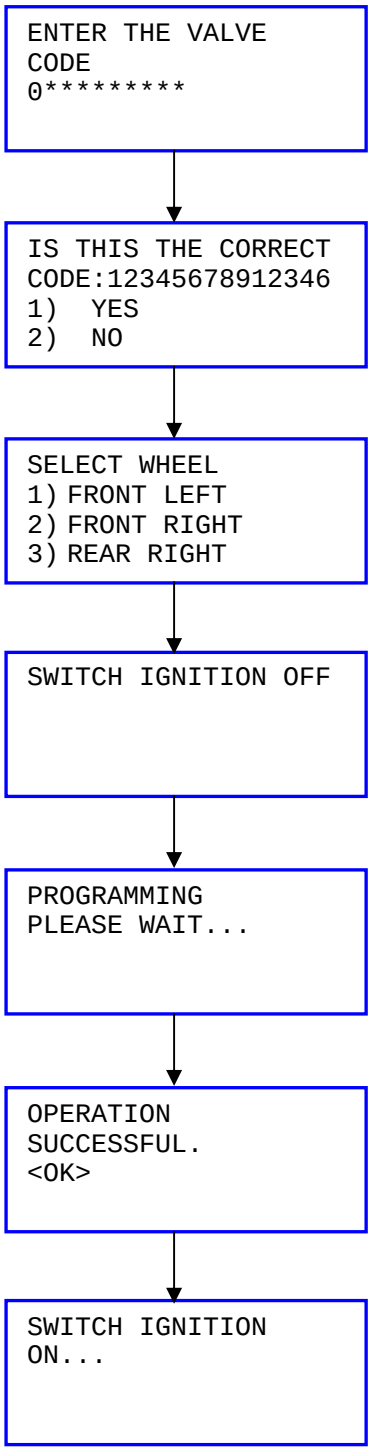


Peugeot, Citroen TMPS systems

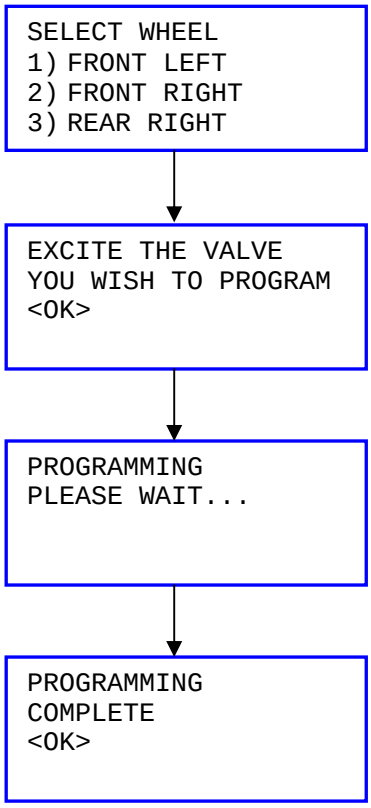
The TPMS (Tyre Pressure Motioning system) is designed to detect both rapid and slow defilation of the tyres; this is done through the use of sensor on each wheel and one receiver. When a new valve is fitted it must be programmed to the vehicle this can be done in 2 ways. Either by entering the valve ID number or self detection.
Self Detection is achieved by getting the valve to transmit its ID when the TMPS systems are put into a learning mode; this is done by exciting the Valve. The valve can be excited by using an exciter, Rapid deceleration, or excessive pressure (some valves can only be programmed by using an exciter).

Procedure

Entering the valve ID

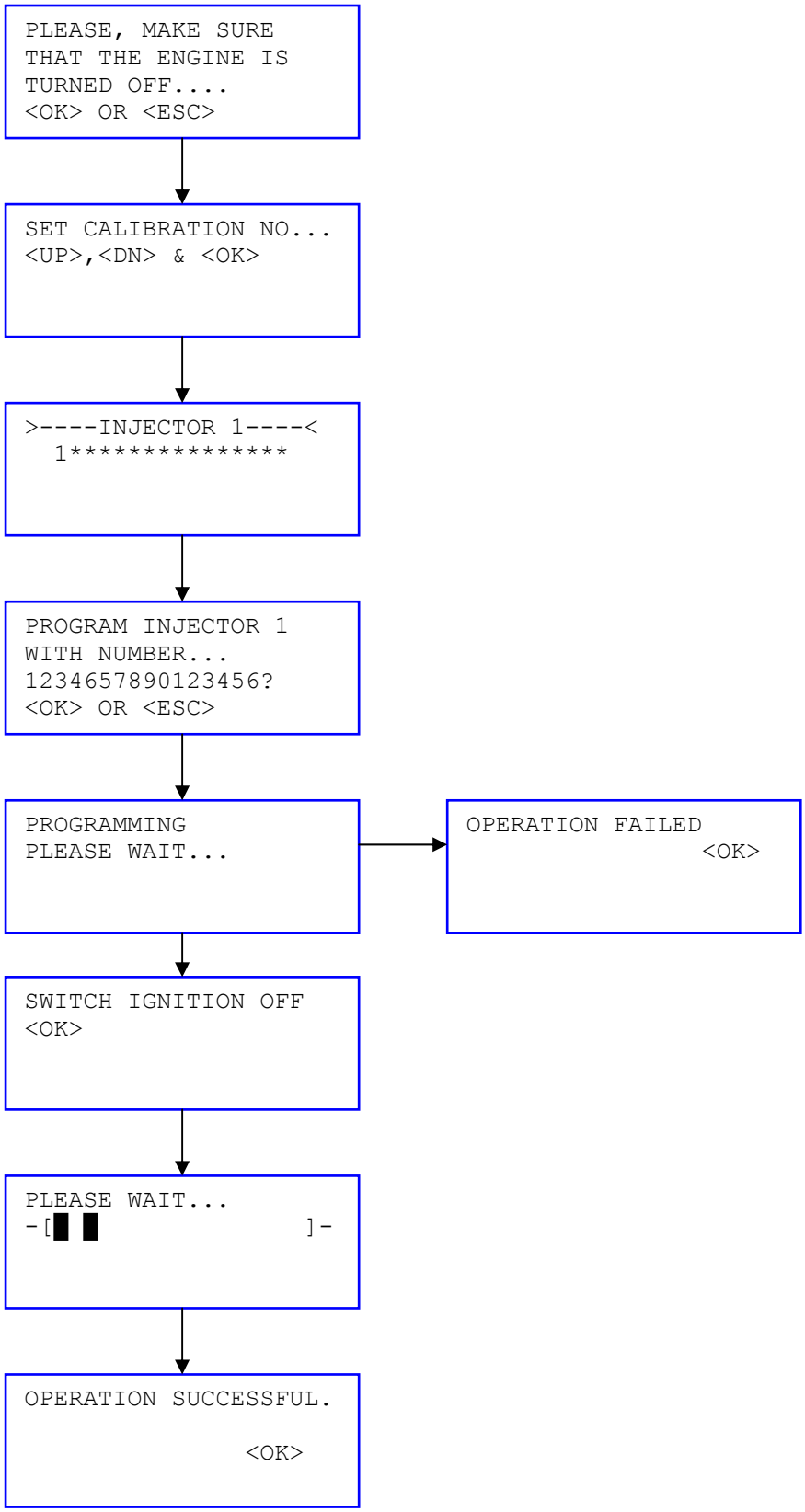


Self Detection Using Exciter



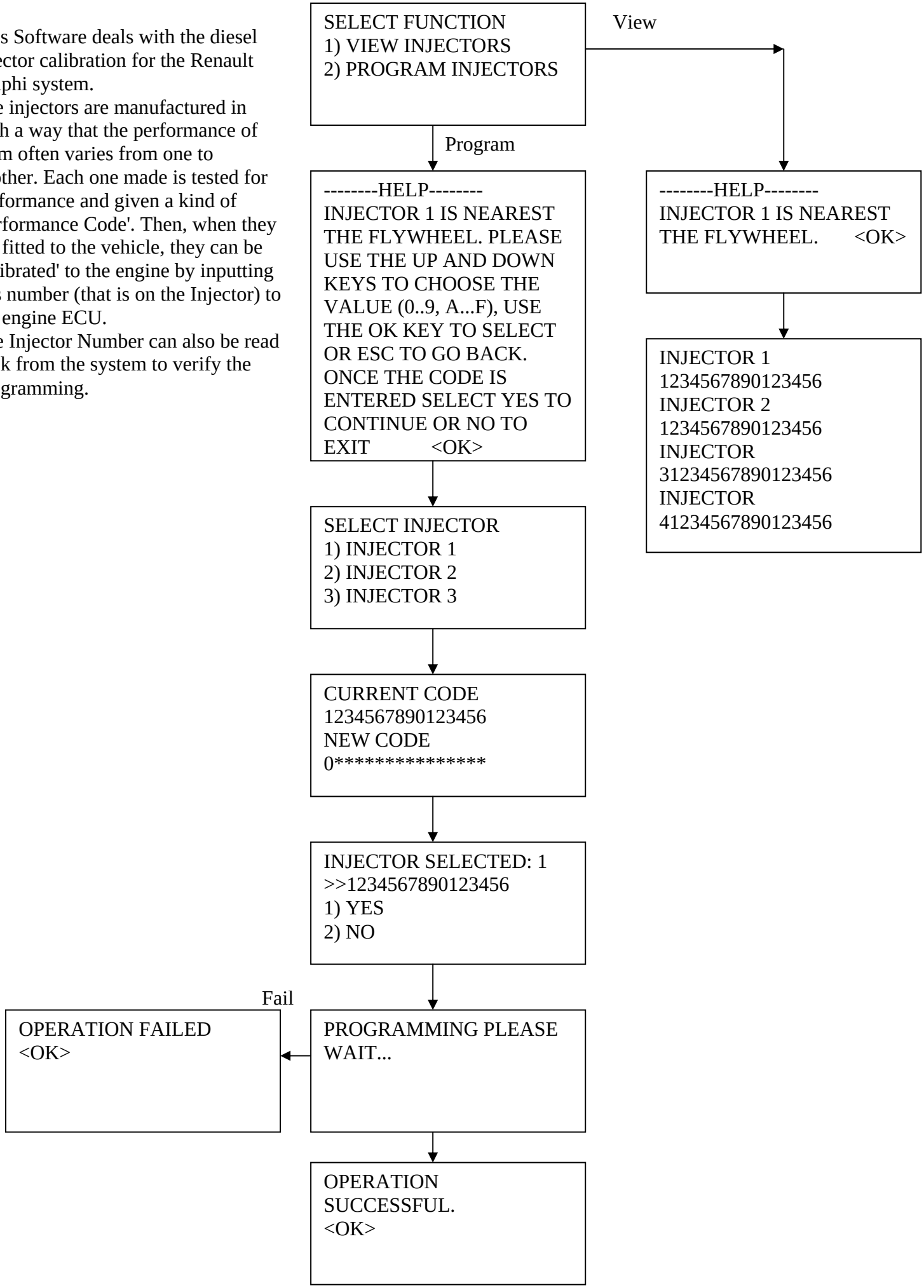
Ford Diesel Injector Calibration

This Software deals with the diesel injector calibration for the FORD TDci system. The injectors are manufactured in such a way that the performance of them often varies from one to another. Each one made is tested for performance and given a kind of 'performance Code'. Then, when they are fitted to the vehicle, they can be 'calibrated' to the engine by inputting this number (that is on the Injector) to the engine ECU. The Injector Number can also be read back from the system to verify the Programming.



Renault Delphi Injector coding

This Software deals with the diesel injector calibration for the Renault Delphi system.
The injectors are manufactured in such a way that the performance of them often varies from one to another. Each one made is tested for performance and given a kind of 'performance Code'. Then, when they are fitted to the vehicle, they can be 'calibrated' to the engine by inputting this number (that is on the Injector) to the engine ECU.
The Injector Number can also be read back from the system to verify the Programming.



ACR Power Options for Manual Fault Code Retrieval

1) Power Supply

Part No. 30215000

In addition to these you are able to use the power supply that is supplied as part of the MAP kit

Part No. 30213600

You are only required to supply power through the Battery connections, and connect to the ACR handset.

DO NOT try to connect any of the extra terminals to the ECU at any time, as they will not work.

2) Available Harnesses

Peugeot/Citroen
Part No. 30211700

Toyota
Part No. 30211900

VAG
Part No. 30212300

Volvo
Part No. 30212000

Chrysler Manual Fault Code Retrieval

Neon	1.8i	P	1.8	97-00		CHRYSLER – BLINK 1	30215000
Neon	2.0i 16V	P	2.0	95-00	ECB	CHRYSLER – BLINK 1	30215000
Neon	2.0i	P	2.0	94-04	420H	CHRYSLER – BLINK 1	30215000
Neon	2.0i	P	2.0	01-04		CHRYSLER – BLINK 1	30215000
PT Cruiser	2.0i	P	2.0	00-04	ECB	CHRYSLER – BLINK 1	30215000
PT Cruiser	2.4i	P	2.4	00-04	EDZ	CHRYSLER – BLINK 1	30215000
Jeep Wrangler	2.5i	P	2.5	96-05		CHRYSLER – BLINK 1	30215000
Jeep Wrangler	4.0i	P	4.0	96-05		CHRYSLER – BLINK 1	30215000
Jeep Grand Cherokee	2.5i	P	2.5	96-05		CHRYSLER – BLINK 1	30215000
Jeep Grand Cherokee	4.0i	P	4.0	96-05		CHRYSLER - BLINK 1	30215000
Voyager	2.0i	P	2.0	96-05	ECB	CHRYSLER - BLINK 1	30215000
Voyager	2.4i	P	2.4	96-05	EDZ	CHRYSLER - BLINK 1	30215000
Voyager	3.3i	P	3.3	96-05	EGA	CHRYSLER - BLINK 1	30215000
Voyager	3.8i	P	3.8	96-05	EGH	CHRYSLER - BLINK 1	30215000
Grand Voyager	2.4i	P	2.4	96-05	EDZ	CHRYSLER - BLINK 1	30215000
Grand Voyager	3.3i	P	3.3	96-05	EGA	CHRYSLER - BLINK 1	30215000
Grand Voyager	3.8i	P	3.8	96-05		CHRYSLER - BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**

- **Fault Retrieval**

1. Switch “ON” the ignition.
2. Switch “OFF” the ignition.
3. Switch “ON” the ignition.
4. Switch “OFF” the ignition.
5. Switch “ON” the ignition.
6. Fault codes are displayed both on the engine management system warning lamp (MIL) in the instrument panel.

- **Clear Faults**

1. Disconnect the negative connection of the battery for at least 30 seconds.
2. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

Note. The radio key codes may be lost during this procedure.

- **Fault Description**

1. Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen.

Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

Daewoo Manual Fault Code Retrieval

Espero	1.5i 16V	P	1.5	95-97	A15MF	DWMC – BLINK 1	30215000
Espero	1.5i 16V	P	1.5	95-97	C15LE	DWMC – BLINK 1	30215000
Nexia	1.5i	P	1.5	95-97	G15MF	DWMC – BLINK 1	30215000
Espero	1.8	P	1.8	95-97	C18LE	DWMC – BLINK 1	30215000
Espero	2.0i	P	2.0	95-97	C20LE	DWMC – BLINK 1	30215000
Leganza	2.0i	P	2.0	97-03	X20SED	ITMS – BLINK 1	30215000
Nubira	1.6i	P	1.6	97-03	A16DMS	ITMS – BLINK 1	30215000
Nubira	2.0i	P	2.0	97-03	C20SE	ITMS – BLINK 1	30215000
Nubira	2.0i	P	2.0	97-03	X20SED	ITMS – BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**

- **Fault Retrieval**

1. Connect a link wire between the diagnostic harness plug terminals A & B. The diagnostic socket is usually located under dash or in fuse-box in passenger compartment.
2. Switch “ON” the ignition
3. Fault codes are displayed both on the engine management system warning lamp (MIL) in the instrument panel.

- **Clear Faults**

1. Disconnect link wire from diagnostic harness plug.
2. Disconnect the negative connection of the battery for at least 30 seconds.
3. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

Note. The radio key codes may be lost during this procedure.

- **Fault Description**

1. Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen.

Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

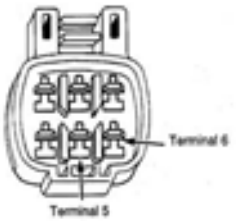
Daihatsu Manual Fault Code Retrieval

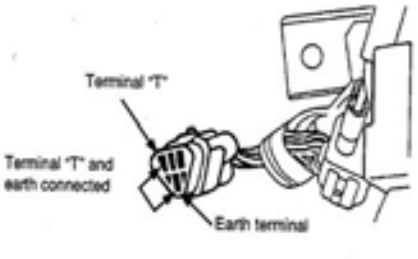
Applause	1.6i SOHC 16V	P	1.6	89-96	HD-E	DAIHATSU – BLINK 1	30215000
Charade	GT-Ti	P		87-93	CB80	DAIHATSU – BLINK 1	30215000
Charade	1.3i SOHC 16V	P	1.3	91-99	HC-E	DAIHATSU – BLINK 1	30215000
Charade	1.5i SOHC 16V	P	1.5	96-99	HE-E	DAIHATSU – BLINK 1	30215000
Charade	1.6i SOHC 16V	P	1.6	93-96	HD-E	DAIHATSU – BLINK 1	30215000
Hi-Jet		P		95-99	CB42	DAIHATSU – BLINK 1	30215000
Sportrak	1.6i SOHC 16V	P	1.6	90-01	HD-E	DAIHATSU – BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**





- **Fault Retrieval**

1. Switch “ON” the ignition
2. Connect a link wire between terminals T & Earth (Triangle diagnostic plug) or terminals 5 & 6 (Square diagnostic plug), usually located in engine compartment.
3. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.

- **Clear Faults**

1. Switch “OFF” the ignition
2. Remove link wire from the diagnostic plug (either Triangle or Square)
3. Disconnect the negative connection of the battery for at least 30 seconds.
4. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

Note. The radio key codes may be lost during this procedure.

- **Fault Description**

1. Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

Honda Manual Fault Code Retrieval

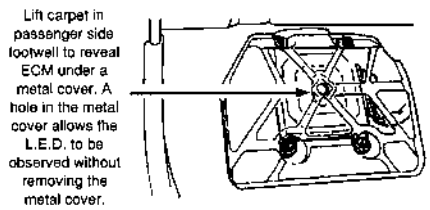
Civic DX (EC8)	1.3	P	1.3	91-95	D13B2	PGM-Carb – BLINK 1	30215000
Bali	1.3	P	1.3	91-95	D13B2	PGM-Carb – BLINK 1	30215000
Accord (CA5)	2.0i	P	2.0	85-90	A20A4	PGM-Fi – BLINK 1	30215000
Accord (CB3)	2.0	P	2.0	90-93	F20A4	PGM-Fi – BLINK 1	30215000
Accord	2.0	P	2.0	86-90	A20A3	PGM-Fi – BLINK 1	30215000
Accord	2.0	P	2.0	87-90	B20A8	PGM-Fi – BLINK 1	30215000
Accord (CB7)	2.2i	P	2.2	90-93	F22A3	PGM-Fi – BLINK 1	30215000
Accord (CE9)	2.2i	P	2.2	93-98	F22Z2	PGM-Fi – BLINK 1	30215000
Accord	2.3i	P	2.3	93-95	H23A3	PGM-Fi – BLINK 1	30215000
Ballade	1.5i	P	1.5	86-89	EW3	PGM-Fi – BLINK 1	30215000
Civic (ED3/ED6)	1.5i	P	1.5	88-91	D15B2	PGM-Fi – BLINK 1	30215000
Civic (ED7/ED4)	1.6i	P	1.6	89-90	D16A6	PGM-Fi – BLINK 1	30215000
Civic (ED4)	1.6i	P	1.6	88-91	D16Z2	PGM-Fi – BLINK 1	30215000
Civic VTEC (EE9)	1.6i	P	1.6	90-91	B16A1	PGM-Fi – BLINK 1	30215000
Civic CRX (ED9)	1.6i	P	1.6	90-91	D16Z5	PGM-Fi – BLINK 1	30215000
Civic CRX VTEC (EE8)	1.6i	P	1.6	90-91	B16A1	PGM-Fi – BLINK 1	30215000
Civic / CRX (ED7/ED9)	1.6i	P	1.6	87-92	D16A9	PGM-Fi – BLINK 1	30215000
Civic / CRX (ED7/ED9)	1.6i	P	1.6	88-90	D16A8	PGM-Fi – BLINK 1	30215000
Civic	1.5i	P	1.5	92-95	D15B2	PGM-Fi – BLINK 1	30215000
Civic ESI	1.6i	P	1.6	88-92	D16Z6	PGM-Fi – BLINK 1	30215000
Civic VTI	1.6i	P	1.6	88-92	B16A2	PGM-Fi – BLINK 1	30215000
Civic CRX ESI	1.6i	P	1.6	88-92	D16Z6	PGM-Fi – BLINK 1	30215000
Civic CRX VTI	1.6i	P	1.6	88-92	B16A2	PGM-Fi – BLINK 1	30215000
Concerto (DX)	1.5i	P	1.5	90-94	D15B2	PGM-Fi – BLINK 1	30215000
Concerto (DX)	1.6i	P	1.6	88-92	D16A8	PGM-Fi – BLINK 1	30215000
Integra	1.5i	P	1.5	86-89	D15	PGM-Fi – BLINK 1	30215000
Integra	1.6i	P	1.6	86-89	D16	PGM-Fi – BLINK 1	30215000
Legend	2.5i	P	2.5	86-88	C25A2	PGM-Fi – BLINK 1	30215000
Legend	2.7i	P	2.7	87-91	C27A2/A3	PGM-Fi – BLINK 1	30215000
Prelude	2.0i	P	2.0	86-87	B20A1	PGM-Fi – BLINK 1	30215000
Prelude (BA4)	2.0i	P	2.0	87-90	B20A7	PGM-Fi – BLINK 1	30215000
Prelude (BA4)	2.0i	P	2.0	87-91	B20A5	PGM-Fi – BLINK 1	30215000
Prelude (BA4)	2.0i	P	2.0	90-91	B20A9	PGM-Fi – BLINK 1	30215000
Prelude (BB3)	2.0i	P	2.0	92-96	F20A4	PGM-Fi – BLINK 1	30215000
Prelude (BB2)	2.2i	P	2.2	96-96	H22A2	PGM-Fi – BLINK 1	30215000
Prelude (BB2)	2.3i	P	2.3	92-96	H23A2	PGM-Fi – BLINK 1	30215000
Shuttle (EE2)	1.5i	P	1.5	88-91	D15B2	PGM-Fi – BLINK 1	30215000
Shuttle (EE4)	1.6i	P	1.6	88-91	D16Z2	PGM-Fi – BLINK 1	30215000
Shuttle (EE4)	1.6i	P	1.6	89-90	D16A6	PGM-Fi – BLINK 1	30215000

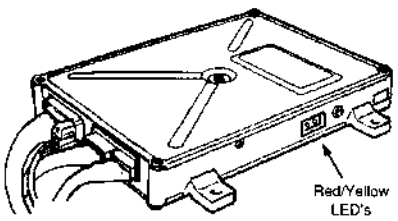
1) Introduction

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

Some older vehicles have a LED light Blink Code retrieval system, where the Error code on the vehicle is displayed in a sequence of flashes of a LED on the ECU itself. This sometimes requires two pins to be connected together on the diagnostic connector socket.

2) Blink Codes





- **Fault Retrieval**

1. Connect a link wire between terminals 1 & 2 on blue diagnostic plug, usually located under dashboard on passenger side.
2. Switch “ON” the ignition 3. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.

- **Clear Faults**

  1. Switch “OFF” the ignition
  2. Remove link wire from blue diagnostic plug
  3. Remove the “Back up” fuse or Disconnect the negative connection of the battery for at least 30 seconds.
  4. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

  Note. The radio key codes may be lost during this procedure.

- **Fault Description**

  1. Enter the Error code that is flashed out on the LED, into the tester.
  2. The error description is displayed on the screen

  Example of Error Code 22 being flashed from the LED

Notes

Fault codes are constantly repeated until the ignition switch is switched “OFF” or the link wire is disconnected

Fault code 0 (Zero) is indicated by the LED remaining “ON”

Honda Manual Fault Code Retrieval

Accord (CE7)	1.8i	P	1.8	95-99	F18A3	PGM-Fi – BLINK 2	30215000
Accord (CE8)	2.0i	P	2.0	93-98	F20Z1/2	PGM-Fi – BLINK 2	30215000
Civic (MA8)	1.4i	P	1.4	95-95	D14A2	PGM-Fi – BLINK 2	30215000
Civic	1.5i	P	1.5	92-95	D15Z1	PGM-Fi – BLINK 2	30215000
Civic ESI	1.6i	P	1.6	92-96	D16Z6	PGM-Fi – BLINK 2	30215000
Civic VTI	1.6i	P	1.6	92-96	B16A2	PGM-Fi – BLINK 2	30215000
Civic CRX VTI	1.6i	P	1.6	92-96	B16A2	PGM-Fi – BLINK 2	30215000
Civic	1.4i	P	1.4	95-96	D14A3	PGM-Fi – BLINK 2	30215000
Civic	1.4i	P	1.4	96-98	D14A8	PGM-Fi – BLINK 2	30215000
Civic	1.4i	P	1.4	96-98	D14A4	PGM-Fi – BLINK 2	30215000
Civic LS VTEC (EK3)	1.5i	P	1.5	96-00	D15Z6	PGM-Fi – BLINK 2	30215000
Civic SR VTEC (MB1)	1.6i	P	1.6	96-98	D16Y5/Z	PGM-Fi – BLINK 2	30215000
Civic VTI VTEC (EK4)	1.6i	P	1.6	96-00	B16A2	PGM-Fi – BLINK 2	30215000
Civic CRX VTEC	1.6i	P	1.6	96-96	B16A2	PGM-Fi – BLINK 2	30215000
Concerto (DX)	1.6i	P	1.6	92-96	D16A8	PGM-Fi – BLINK 2	30215000
Shuttle (RA1)	2.2i	P	2.2	95-98	F22B8	PGM-Fi – BLINK 2	30215000

1) Introduction

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

Some older vehicles have a LED light Blink Code retrieval system, where the Error code on the vehicle is displayed in a sequence of flashes of a LED on the ECU itself. This sometimes requires two pins to be connected together on the diagnostic connector socket.

2) Blink Codes

- **Fault Retrieval**

1. Connect a link wire between terminals 1 & 2 on blue diagnostic plug, usually located under dashboard on passenger side.
2. Switch “ON” the ignition 3. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.
3. Fault codes are displayed on the Engine managament system warning lamp (MIL) in the insturment cluster.

- **Clear Faults**

1. Switch “OFF” the ignition
2. Remove link wire from Blue diagnostic plug
3. Remove the “Back up” fuse or Disconnect the negative connection of the battery for at least 30 seconds
4. Fault codes should be erased (only if the previous faults have been fixed on the vehicle)

Note. The radio key codes may be lost during this procedure.

- **Fault Description**

1. Enter the Error code that is flashed out on the LED, into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the LED

Notes

Fault codes are constantly repeated until the ignition switch is switched “OFF” or the link wire is disconnected

Fault code 0 (Zero) is indicated by the LED remaining “ON”

Isuzu Manual Fault Code Retrieval

Piazza Tubo	2.0i	P	2.0	86-90	4ZC1T	ISUZU - BLINK1	30215000
Trooper	2.6i	P	2.6	88-92	4ZE1	ISUZU - BLINK1	30215000
Trooper	3.2i	P	3.2	93-98	6VD1	ISUZU - BLINK1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**

- **Fault Retrieval**

1. Connect the two single terminal male & female diagnostic harness plugs together, usually located above the driver's pedals.
2. Switch "ON" the ignition.
3. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.

- **Clear Faults**

1. Switch "OFF" the ignition
2. Disconnect the two single terminal male & female diagnostic harness plugs
3. Disconnect the negative connection of the battery for at least 30 seconds.
4. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

Note. The radio key codes may be lost during this procedure.

- **Fault Description**

1. Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

Notes

Start of Fault codes are indicated by fault code 12 being displayed (repeated 3 times).

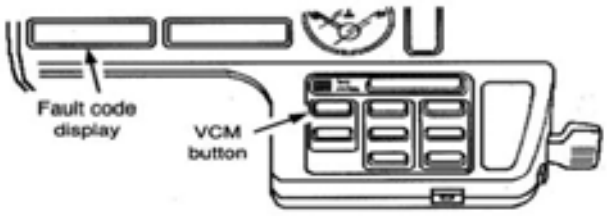
Jaguar Manual Fault Code Retrieval

XJ6 Soverign	3.2i	P	3.2	90-94	AJ-6	JAGUAR – BLINK 1	30215000
XJ6 Soverign	3.6i	P	3.6	86-89	AJ-6	JAGUAR – BLINK 1	30215000
XJ6 Soverign	4.0i	P	4.0	89-94	AJ-6	JAGUAR – BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**



a. **Fault Retrieval**

1. Switch “ON” the ignition
2. Press the “VCM” button on the Vehicle condition monitor dash panel.
3. Fault codes are displayed on the Vehicle condition monitor dash panel display.

b. **Clear Faults**

1. Switch “OFF” the ignition
2. Disconnect the negative connection of the battery for at least 30 seconds.
3. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

Note. The radio key codes may be lost during this procedure.

c. **Fault Description**

1. Enter the Error code that is displayed on the Vehicle condition monitor dash panel display, into the tester.
2. The error description is displayed on the screen

Nissan Manual Fault Code Retrieval

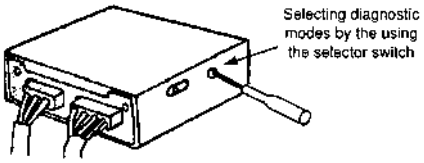
Bluebird (T12)	2.0i	P	2.0	88-91	CA20E	ECCS – BLINK 1	30215000
Praire (M11)	2.0i	P	2.0	89-92	CA20E	ECCS – BLINK 1	30215000
200SX (S13)	1.8i	P	1.8	89-94	CA18DET	ECCS – BLINK 1	30215000
Maxima (J30)	3.0i V6	P	3.0	88-94	VG30E	ECCS – BLINK 1	30215000

1) Introduction

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

Some older vehicles have a LED light Blink Code retrieval system, where the Error code on the vehicle is displayed in a sequence of flashes of a LED on the ECU itself. This sometimes requires two pins to be connected together on the diagnostic connector socket.

2) Blink Codes



- **Fault Retrieval**

1. Switch “ON” the ignition 2. Locate the diagnostic selector switch on the engine management system ECM (This is usually located under the driver’s side of dashboard).
3. Turn the diagnostic selector switch fully clockwise and wait for the Red & Green LED’s on the ECM to flash three times.
4. Turn the diagnostic selector switch anti-clockwise immediately after the LED’s flash the third time.
5. Fault codes are now displayed on both LED’s on the ECM.

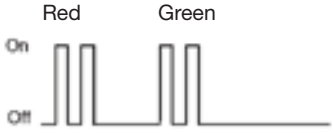
- **Clear Faults**

1. Start the engine
2. Turn the diagnostic selector switch fully clockwise and wait for the Red & Green LED’s on the ECM to flash five times.
3. Turn the diagnostic selector switch anti-clockwise immediately after the LED’s flash the fifth time.
4. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

- **Fault Description**

1. Enter the Error code that is flashed out on the LED, into the tester.
2. The error description is displayed on the screen.

Example of Error Code 22 being flashed from the LED



Notes

The Red LED indicates the 10 digits and the Green LED indicates the single units.

i.e. Fault code 22 is displayed by the Red LED flashing twice, and the Green Led flashing twice.

Nissan Manual Fault Code Retrieval

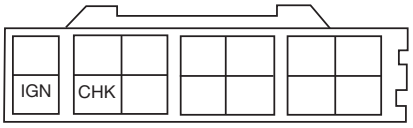
Almera (N15)	1.4i	P	1.4	95-00	GA14DE	ECCS – BLINK 2	30215000
Almera (N15)	1.6i	P	1.6	95-99	GA16DE	ECCS – BLINK 2	30215000
Micra (K11)	1.0i	P	1.0	92-02	CG10DE	ECCS – BLINK 2	30215000
Micra (K11)	1.3i	P	1.3	92-00	CG13DE	ECCS – BLINK 2	30215000
Primera (P10)	1.6i	P	1.6	93-96	GA16DE	ECCS – BLINK 2	30215000
Primera (W10)	1.6i	P	1.6	93-96	GA16DE	ECCS – BLINK 2	30215000
Primera Kombi (W10)	1.6i	P	1.6	91-93	GA16DS	ECCS – BLINK 2	30215000
Primera (P10)	2.0i	P	2.0	91-96	SR20DE	ECCS – BLINK 2	30215000
Primera (P10)	2.0i	P	2.0	91-93	SR20DI	ECCS – BLINK 2	30215000
Primera Kombi (W10)	2.0i	P	2.0	91-97	SR20DI	ECCS – BLINK 2	30215000
Primera (P11)	1.6i	P	1.6	97-99	GA16DE	ECCS – BLINK 2	30215000
Primera (P11)	2.0i	P	2.0	97-99	SR20DE	ECCS – BLINK 2	30215000
Serena (C23)	1.6i	P	1.6	93-02	GA16DE	ECCS – BLINK 2	30215000
Serena (C23)	2.0i	P	2.0	93-02	SR20DE	ECCS – BLINK 2	30215000
Sunny (N14)	1.4i	P	1.4	93-95	GA14DE	ECCS – BLINK 2	30215000
Sunny (N14)	1.6i	P	1.6	91-95	GA16DE	ECCS – BLINK 2	30215000
Sunny 100 (B13)	1.6i	P	1.6	91-95	GA16DE	ECCS – BLINK 2	30215000
Sunny (Y10)	1.6i	P	1.6	91-95	GA16DE	ECCS – BLINK 2	30215000
Sunny (N14)	2.0i	P	2.0	91-95	SR20DE	ECCS – BLINK 2	30215000
Terrano (R20)	2.4i	P	2.4	93-96	KA24E	ECCS – BLINK 2	30215000
300ZX (Z32)	3.0i Turbo	P	3.0	90-94	VG30DETT	ECCS – BLINK 2	30215000

1) Introduction

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

Some older vehicles have a LED light Blink Code retrieval system, where the Error code on the vehicle is displayed in a sequence of flashes of a LED on the ECU itself. This sometimes requires two pins to be connected together on the diagnostic connector socket.

2) Blink Codes



- **Fault Retrieval**

1. Switch “ON” the ignition 2. Connect a link wire between the diagnostic harness plug terminals IGN & CHK for between 2 to 10 seconds and then remove. The diagnostic socket is usually located under dash or in fuse-box in passenger compartment.
3. Fault codes are displayed both on the engine management system ECM and on the engine management system warning lamp (MIL) in the instrument panel.

- **Clear Faults**

1. Switch “ON” the ignition
2. Connect a link wire between terminals IGN & CHK on the diagnostic plug for between 2 to 10 seconds and then remove.
3. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

- **Fault Description**

1. Enter the Error code that is flashed out on the LED, into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the LED

Notes
Fault codes are constantly repeated until the ignition is switched “OFF”

Rover Manual Fault Code Retrieval

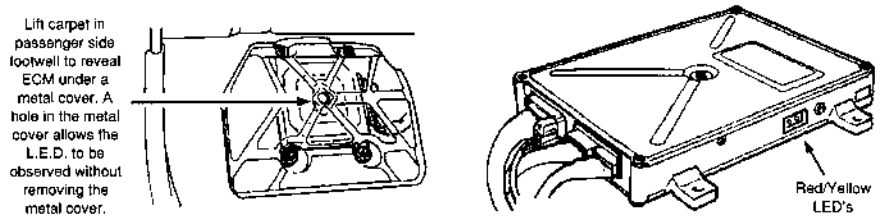
216 (XW)	1.6i	P	1.6	92-95	D16Z2	PGM-Fi – BLINK 1	30215000
216 (XW)	1.6i	P	1.6	92-95	D16A8	PGM-Fi – BLINK 1	30215000
216 (XW)	1.6i	P	1.6	92-95	D16A6	PGM-Fi – BLINK 1	30215000
416 (XW)	1.6i	P	1.6	97-99	D16A8	PGM-Fi – BLINK 1	30215000
416 (RT)	1.6i	P	1.6	95-97	D16Y3	PGM-Fi – BLINK 1	30215000
416 (XW)	1.6i	P	1.6	92-95	D16Z2	PGM-Fi – BLINK 1	30215000
416 (XW)	1.6i	P	1.6	92-95	D16A8	PGM-Fi – BLINK 1	30215000
618 (RH)	1.8i	P	1.8	93-99	F18A3	PGM-Fi – BLINK 1	30215000
620 (RH)	2.0i	P	2.0	93-99	F20Z1/2	PGM-Fi – BLINK 1	30215000
623 (RH)	2.3i	P	2.3	93-99	H23A3	PGM-Fi – BLINK 1	30215000
825 (XS)	2.5i	P	2.5	87-90	C25A2	PGM-Fi – BLINK 1	30215000
827 (XS)	2.7i	P	2.7	88-92	C27A2	PGM-Fi – BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

Some older vehicles have a LED light Blink Code retrieval system, where the Error code on the vehicle is displayed in a sequence of flashes of a LED on the ECU itself. This sometimes requires two pins to be connected together on the diagnostic connector socket.

2) **Blink Codes**



- **Fault Retrieval**

1. Switch “ON” the ignition 2. The fault codes are displayed on the engine management system LED. The LED is usually located on the top or side of the ECM.

- **Clear Faults**

1. Switch “OFF” the ignition
2. Remove the “Back up” fuse or Disconnect the negative connection of the battery for at least 30 seconds.
3. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

- **Fault Description**

1. Enter the Error code that is flashed out on the LED, into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the LED

Notes

Fault codes are constantly repeated until the ignition switch is switched “OFF”
Fault code 0 (Zero) is indicated by the LED remaining “ON”

Rover Manual Fault Code Retrieval

827 (RS)	2.7i	P	2.7	92-95	C27A1	PGM-Fi - BLINK	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

Some older vehicles have a LED light Blink Code retrieval system, where the Error code on the vehicle is displayed in a sequence of flashes of a LED on the ECU itself. This sometimes requires two pins to be connected together on the diagnostic connector socket.

2) **Blink Codes**

- **Fault Retrieval**

  1. Connect a link wire between terminals 1 & 2 on blue diagnostic plug, usually located under dashboard on passenger side.
  2. Switch “ON” the ignition 3. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.

- **Clear Faults**

  1. Switch “OFF” the ignition
  2. Remove link wire from blue diagnostic plug
  3. Remove the “Back up” fuse or Disconnect the negative connection of the battery for at least 30 seconds.
  4. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

  Note. The radio key codes may be lost during this procedure.

- **Fault Description**

  1. Enter the Error code that is flashed out on the LED, into the tester.
  2. The error description is displayed on the screen

  Example of Error Code 22 being flashed from the LED

Notes

Fault codes are constantly repeated until the ignition switch is switched “OFF” or the link wire is disconnected

Fault code 0 (Zero) is indicated by the LED remaining “ON”

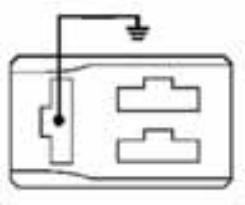
Saab Manual Fault Code Retrieval

900	2.0i 16V	P	2.0	89-93	B202I	SAAB – BLINK 1	30215000
900	2.1i 16V	P	2.1	93-98	B212I	SAAB – BLINK 1	30215000
900S	2.0i	P	2.0	90-93	B202LTT	SAAB – BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**



- **Fault Retrieval**

1. Switch “ON” the ignition.
2. Engine management system warning lamp (MIL) will illuminate in the instrument cluster.
3. Connect a link wire between the diagnostic plug terminal & Earth.
4. After approximately 3 seconds the Engine management system warning lamp (MIL) will display a short flash.
5. Immediately after Engine management system warning lamp (MIL) flashes remove the link wire.
6. The first Fault code will be displayed on the engine management system warning lamp (MIL).
7. To display the next fault code. Reconnect link wire to diagnostic plug terminal. After approximately 3 seconds the Engine management system warning lamp (MIL) will display a short flash.
8. The next fault code will be displayed on the Engine management system warning lamp (MIL).
9. Repeat steps 7 & 8 until the last fault code has been displayed.
10 After all Fault codes have been displayed the Engine management system warning lamp (MIL) will constantly flash, until the ignition switch is turned “OFF”.

- **Clear Faults**

1. Switch “OFF” the ignition
2. All Fault codes must be displayed on Engine management system warning lamp (MIL) before carrying out the clear Faults procedure.
2. Switch “ON” the ignition
3. Connect a link wire between the diagnostic plug terminal & Earth.
4. After approximately 3 seconds the Engine management system warning lamp (MIL) will display 3 short flashes.
5. Immediately after the Engine management system warning lamp (MIL) flashes 3 times remove the link wire.
6. Fault codes should be erased (if the previous faults have been fixed on the vehicle).

Notes

If fault code 12231 is displayed at start of fault code retrieval (step 6 of Fault code retrieval), crank engine for approximately 5 seconds or until fault code is no longer displayed.

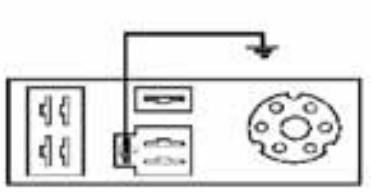
Saab Manual Fault Code Retrieval

9000	2.0i Turbo 16V	P	2.0	89-93	B202L	SAAB – BLINK 2	30215000
9000	2.3i 16V	P	2.3	90-93	B234I	SAAB – BLINK 2	30215000
9000	2.0i Turbo 16V	P	2.0	85-89	B2023L	SAAB – BLINK 2	30215000
9000	2.0i 16V	P	2.0	88-93	B202I	SAAB – BLINK 2	30215000
9000	2.3i Turbo 16V	P	2.3	91-93	B234L	SAAB – BLINK 2	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**



- **Fault Retrieval**

1. Switch “ON” the ignition.
2. Engine management system warning lamp (MIL) will illuminate in the instrument cluster.
3. Connect a link wire between the diagnostic plug terminal & Earth.
4. After approximately 3 seconds the Engine management system warning lamp (MIL) will display a short flash.
5. Immediately after Engine management system warning lamp (MIL) flashes remove the link wire.
6. The first Fault code will be displayed on the engine management system warning lamp (MIL).
7. To display the next fault code. Reconnect link wire to diagnostic plug terminal. After approximately 3 seconds the Engine management system warning lamp (MIL) will display a short flash.
8. The next fault code will be displayed on the Engine management system warning lamp (MIL).
9. Repeat steps 7 & 8 until the last fault code has been displayed.
10 After all Fault codes have been displayed the Engine management system warning lamp (MIL) will constantly flash, until the ignition switch is turned “OFF”.

- **Clear Faults**

1. Switch “OFF” the ignition
2. All Fault codes must be displayed on Engine management system warning lamp (MIL) before carrying out the clear Faults procedure.
2. Switch “ON” the ignition
3. Connect a link wire between the diagnostic plug terminal & Earth.
4. After approximately 3 seconds the Engine management system warning lamp (MIL) will display 3 short flashes.
5. Immediately after the Engine management system warning lamp (MIL) flashes 3 times remove the link wire.
6. Fault codes should be erased (if the previous faults have been fixed on the vehicle).

- **Fault Description**

1.Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

Notes

If fault code 12231 is displayed at start of fault code retrieval (step 6 of Fault code retrieval), crank engine for approximately 5 seconds or until fault code is no longer displayed.

Saab Manual Fault Code Retrieval

9000	2.0i Turbo	P	2.0	97-98	B204E	SAAB – BLINK 3	30215000
9000	2.0i CS/CD	P	2.0	94-97	B204I	SAAB – BLINK 3	30215000
9000	2.3i Turbo CS	P	2.3	94-97	B234R	SAAB – BLINK 3	30215000
9000	2.3i Turbo CS	P	2.3	94-97	B234L	SAAB – BLINK 3	30215000
9000	2.3i Turbo	P	2.3	94-97	B234E	SAAB – BLINK 3	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**

- **Fault Retrieval**

1. Switch “ON” the ignition.
2. Engine management system warning lamp (MIL) in the instrument cluster will illuminate for approximately 6 seconds and turn off.
3. Wait.
4. Engine management system warning lamp (MIL) will illuminate for approximately 3 seconds and turn off.
5. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.

- **Clear Faults**

1. Switch “OFF” the ignition
2. Disconnect the Engine management system ECM for approximately 5 minutes.
3. Fault codes should be erased (if the previous faults have been fixed on the vehicle).

- **Fault Description**

1.Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen

Example of Error Code 2 being flashed from the engine management system warning lamp (MIL)

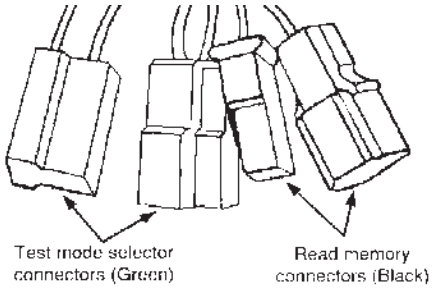
Subaru Manual Fault Code Retrieval

Impreza	1.6i 2WD/4WD	P	1.6	94-99	EJ16	SUBARU – BLINK 1	30215000
Impreza	1.8i 2WD/4WD	P	1.8	94-99	EJ18	SUBARU – BLINK 1	30215000
Impreza	2.0i 4WD	P	2.0	94-99	EJ20	SUBARU – BLINK 1	30215000
Impreza	2.0i Turbo 4WD	P	2.0	95-99	EJ20T	SUBARU – BLINK 1	30215000
Legacy	1.8i 2WD/4WD	P	1.8	90-94	EJ18S	SUBARU – BLINK 1	30215000
Legacy	2.0i 16V 4WD	P	2.0	92-96	EJ20	SUBARU – BLINK 1	30215000
Legacy	2.0i 4WD	P	2.0	91-02	EJ20	SUBARU – BLINK 1	30215000
Legacy	2.0i Turbo 4WD	P	2.0	91-94	EJ20	SUBARU – BLINK 1	30215000
Legacy	2.2i 16V 4WD	P	2.2	94-98	EJ22	SUBARU – BLINK 1	30215000
Legacy	2.2i 2WD/4WD	P	2.2	90-94	EJ22	SUBARU – BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**



- **Fault Retrieval**

1. Connect the green (test mode) harness plug connectors together and leave the black diagnostic harness plug connectors disconected.
2. Switch “ON” the ignition
3. Fault codes are displayed on both the engine management system warning lamp (MIL) in the instrument cluster and the engine management system LED (if fitted).

- **Clear Faults**

1. Start the engine and wait until it reaches normal operating temperature.
2. Stop the engine.
3. Connect both green and black diagnostic harness plug connectors together.
4. Switch “ON” the Ignition.
5. The ECM LED (if fitted) will show the vehicle's specification code and then will remain on.
6. Press the Accelerator pedal to the floor.
7. Release the pedal to the half-way point and hold it there for 2 seconds.
8. Release the pedal so that it returns to idle position.
9. Start the engine. If there are any Fault codes stored the engine management system lamp (MIL) will illuminate in the instrument dash and the ECM LED (if fitted) will display the fault codes.
10. The Vehicle must be driven at least 8 mph (12 km/h) for 1 minute, using all forward gears.
11. Stop the car, put it in neutral, and let it run at idle speed.
12. Increase rpm to at least 2000 rpm for over 40 seconds.
13. If there are fault codes, both the MIL lamp and the ECM LED (if fitted) in the ECM will flash.
14. If there is no fault codes stored the MIL lamp will constantly flash, indicating all fault codes have now been erased.
15. Stop the engine and disconnect both the green and black connectors.

Subaru Manual Fault Code Retrieval

- **Fault Description**

1.Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

Note.

Fault codes can be displayed on both the Engine management system MIL lamp and the engine management system ECM LED (if fitted) at the same time.

All fault codes are displayed in numerical order and Fault codes will be repeated until the ignition is switched “OFF”

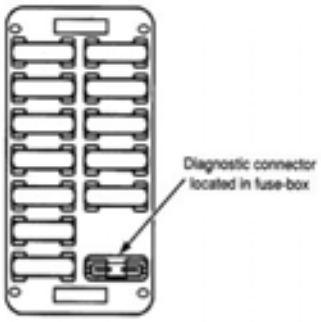
Suzuki Manual Fault Code Retrieval

Alto	1.0i	P	1.0	95-02	G10B	SUZUKI – BLINK 1	30215000
Baleno	1.3i	P	1.3	97-00	G13B	SUZUKI – BLINK 1	30215000
Baleno	1.3i 16V 2WD/4WD	P	1.3	95-96	G13B	SUZUKI – BLINK 1	30215000
Baleno	1.6i 16V 2WD/4WD	P	1.6	95-00	G16B	SUZUKI – BLINK 1	30215000
Swift	1.3i 16V GTi	P	1.3	85-94	G13B	SUZUKI – BLINK 1	30215000
Swift	1.0i	P	1.0	89-00	G10A	SUZUKI – BLINK 1	30215000
Swift	1.3i	P	1.3	89-00	G13B	SUZUKI – BLINK 1	30215000
Swift	1.6i 16V	P	1.6	90-96	G16B	SUZUKI – BLINK 1	30215000
Vitara	1.6i	P	1.6	98-04	G16B	SUZUKI – BLINK 1	30215000
Vitara	1.6i 16V 4WD	P	1.6	90-96	G16B	SUZUKI – BLINK 1	30215000
Vitara	1.6i 8V 4WD	P	1.6	87-94	G16A	SUZUKI – BLINK 1	30215000
Vitara	2.0i V6 4WD	P	2.0	96-97	H20A	SUZUKI – BLINK 1	30215000

1) **Introduction**

To use this function correctly you are required to provide power to the Tester. This can be in the form of the Power supply or from 1 of the various Battery connector type Harnesses. If you are using the Battery type Harness, you are only required to supply Positive and Negative, there is no need to use any of the other connectors on the harness.

2) **Blink Codes**



- **Fault Retrieval**

1. Switch “ON” the ignition.
2. Connect a fuse into the diagnostic connector in the fuse box.
3. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.

- **Clear Faults**

1. Switch “OFF” the ignition
2. Remove the fuse from the diagnostic connector in the fuse box.
3. Disconnect the negative connection of the battery for at least 30 seconds.
4. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

- **Fault Description**

1. Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen

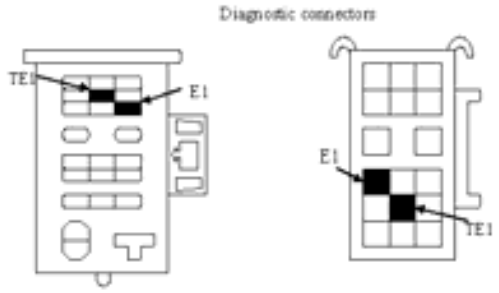
Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

Notes

Fault code 0 indicated by the engine management system warning lamp (MIL) remaining permanently “ON”.

Toyota Manual Fault Code Retrieval

4 Runner	3.0i	P	3.0	89-93	3VZ-E	Blink Codes	30213600
4 Runner	3.0i	P	3.0	89-93	3VZ-E	Blink Codes	30213600
Camry	2.0i 16V	P	2.0	86-91	3S-FE	Blink Codes	30213600
Camry	2.0i 16V	P	2.0	86-91	3S-FE	Blink Codes	30213600
Camry	2.2i 16V	P	2.2	91-93	5S-FE	Blink Codes	30213600
Camry	2.5i V6	P	2.5	88-91	2VZ-FE	Blink Codes	30213600
Camry	3.0i V6 24V	P	3.0	91-93	3VZ-FE	Blink Codes	30213600
Carina E	1.6i 16V	P	1.6	92-93	4A-FE	Blink Codes	30213600
Carina E	2.0i 16V	P	2.0	92-93	3S-FE	Blink Codes	30213600
Carina E	2.0i Gti 16V	P	2.0	92-93	3S-GE	Blink Codes	30213600
Carina II	2.0i 16V	P	2.0	88-93	3S-FE	Blink Codes	30213600
Celica	1.6i 16V	P	1.6	90-93	4A-FE	Blink Codes	30213600
Celica	1.8i 16V Auriol	P	1.8	93-94	7A-FE	Blink Codes	30213600
Celica	2.0i GT-4 turbo 4x4	P	2.0	88-89	3S-GTE	Blink Codes	30213600
Celica	2.0i GT-4 turbo 4x4	P	2.0	90-93	3S-GTE	Blink Codes	30213600
Celica	2.0i Gti 16V	P	2.0	86-89	3S-GE	Blink Codes	30213600
Celica	GT 2.0i	P	2.0	90-93	3S-GE	Blink Codes	30213600
Corrolla	1.3i 16V	P	1.3	92-93	4E-FE	Blink Codes	30213600
Corrolla	1.6i 16V	P	1.6	90-92	4A-FE	Blink Codes	30213600
Corrolla	1.6i 16V	P	1.6	92-93	4A-FE	Blink Codes	30213600
Corrolla	1.6i 16V 4x4	P	1.6	89-92	4A-FE	Blink Codes	30213600
Corrolla	1.6i GT Coupe	P	1.6	84-87	4A-GE	Blink Codes	30213600
Corrolla	1.6i Gti	P	1.6	87-89	4A-GE	Blink Codes	30213600
Corrolla	1.6i Gti	P	1.6	89-92	4A-GE	Blink Codes	30213600
Hi-Ace	2.4i	P	2.4	89-93	2RZ-E	Blink Codes	30213600
Hi-Ace	2.4i 4x4	P	2.4	89-93	2RZ-E	Blink Codes	30213600
MR2	1.6i	P	1.6	85-90	4A-GE	Blink Codes	30213600
MR2	2.0i	P	2.0	90-93	3S-FE	Blink Codes	30213600
MR2	2.0i 16V Gti	P	2.0	90-93	3S-GE	Blink Codes	30213600
Previa	2.4i	P	2.4	90-93	2TZ-FE	Blink Codes	30213600
Supra	2.8i	P	2.8	92-93	5M-GE	Blink Codes	30213600
Supra	3.0i	P	3.0	86-93	7M-GE	Blink Codes	30213600
Supra	3.0i	P	3.0	86-93	7M-GE	Blink Codes	30213600
Supra	3.0i turbo	P	3.0	88-93	7M-GTE	Blink Codes	30213600
Supra	3.0i turbo	P	3.0	88-93	7M-GTE	Blink Codes	30213600



- **Fault Retrieval**

1. Switch “ON” the ignition.
2. Connect a link wire between the diagnostic plug terminals E1 and TE1.
3. Fault codes are displayed on the engine management system warning lamp (MIL) in the instrument cluster.

- **Clear Faults**

1. Switch “OFF” the ignition
2. Remove link wire from the diagnostic plug terminals E1 and TE1
3. Disconnect the negative connection of the battery for at least 30 seconds.
4. Fault codes should be erased (Only if the previous faults have been fixed on the vehicle).

Note. The radio key codes may be lost during this procedure.

- **Fault Description**

1. Enter the Error code that is flashed out on the engine management system warning lamp (MIL), into the tester.
2. The error description is displayed on the screen

Example of Error Code 22 being flashed from the engine management system warning lamp (MIL)

Notes

Fault code 0 indicated by the engine management system warning lamp (MIL) remaining permanently “ON”.

Service Interval Reset

Volvo-read counters, when selected displays the status of the 3 main service interval counters (Distance travelled, months elapsed and hours elapsed) pressing **'ok'** moves to next counter display.

Volvo-reset counters, will reset all 3 when selected, displays the status of the 3 main service interval counters (Distance travelled, months elapsed and hours elapsed) pressing **'ok'** moves to next counter display.

VAG – Distance 1, Displays distance remaining until next oil service is due.

VAG – Distance 2, Displays distance remaining until next service is due.

VAG – Oil, When selected performs reset procedure for Oil service indicator.

VAG – Service 1, When selected performs reset procedure for IN1/IN01 service indicators.

VAG – Service 2, When selected performs reset procedure for IN2/IN02 service indicators.

BMW – Oil reset, Will cancel 'Oil' service indicators on dashboard when selected and confirmed.

BMW – Service reset, Will cancel 'Service indicators' on dashboard when selected and confirmed.

Rover 75 – Oil reset, Will cancel 'Oil' service indicators on dashboard when selected and confirmed.

Rover 75 – Inspection reset, Will cancel 'Service indicators' on dashboard when selected and confirmed.

Component Adjustments

GM - EZ Timing adjust, Places EZ61 module in 'timing mode' allowing manual adjustment of distributor to attain timing of 10° BTDC, press **'ok'** to escape and confirm change.

VAG – Idle speed control valve Calibration, on selecting this function, the ECM will attempt to calibrate the idle speed control device by 'cycling' the unit to determine its minimum and maximum travel, and then set the base idle position.

VAG - Base Timing adjust, Places the ECM in 'timing' mode, enabling manual adjustment of distributor to attain recommended factory setting, press **'ok'** to complete and confirm change.

Rover – Idle Stepper Motor adjust, When selected, ensuring all engine conditions have been met (follow on-screen prompts), idle speed can be manually adjusted at throttle body whilst viewing ECM status. Press **'ok'** to complete and confirm changes.

Rover – CO adjust, When selected, ensuring all engine conditions have been met (follow on-screen prompts), CO level can be trimmed using the **' ↓ '** or **' ↑ '** buttons. This function should be used in conjunction with a CO meter to monitor adjustments. Press **'ok'** to complete and confirm changes.

PSA – Adjust Timing Advance, enables dynamic ignition timing adjustment, use the **' ↓ '** or **' ↑ '** buttons to increase and decrease the advance. Press **'ok'** to complete and confirm changes.

Blink Codes

VAG – read codes, will display any stored fault code and its description. Follow on-screen prompts for ignition switch position, and use the **'↓'** or **'↑'** buttons keys to scroll through stored codes, press **'esc'** to return to the main menu.

VAG – Clear codes, will attempt to clear and re-read any fault codes present.

PSA – Read Codes, will display stored fault code number only, for description refer to manufacturers data. Follow on-screen prompts for ignition switch position, and use the **'↓'** or **'↑'** buttons to scroll through stored codes then press **'esc'** to return to the main menu.

PSA – Clear codes, will attempt to clear and re-read any fault codes present.

Volvo – read codes, this function permits the reading of up to 3 stored fault codes from the ECM, displaying a 3-digit code and an explanation for each.

Volvo – Clear codes, permits the clearing of the stored fault codes from the ECM. This function will automatically clear and re-read any remaining codes.

Other Test Functions

Ford – Wiggle Test, Once selected, carry out checks on wiring looms and multi plugs. If a fault is detected by the ECM, a fault code will be displayed as an intermittent (KAM) fault, press **'esc'** to end wiggle test.

Ford – Clear KAM, will erase all recorded KAM fault codes.

Ford – Engine Run, Carries out a self-test sequence whilst the engine is running, requires user intervention to ensure test is completed correctly. Ensure all on-screen commands are carried out to complete the sequence. Any fault codes detected during test will be displayed.

EOBD II DRIVE CYCLE

1. Start the engine from cold. Engine coolant temp must be below 50°C

2. Run the engine at idle for 2½ minutes with as much electrical load as possible i.e. switch on rear demister, air con etc…

3. Turn off all electrical items, then drive car up to 55mph using only ½ throttle.

4. Hold a steady speed of 55mph for 3 minutes.

5. Slow the car down to 20mph just by letting off the throttle, do not use the brakes, clutch or gears just coast.

6. Accelerate to 55-60mph using ¾ throttle.

7. Hold a steady speed of 55mph for 5 minutes.

8. Slow down again in the same way as step 5.

This drive cycle is valid for most vehicles but each manufacture has their own specific routine which may differ from the above.

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