

GENERAL TOPICS VARIOUS MANUFACTURERS - VARIOUS MODELS

GENERAL TOPICS

INTRODUCTION

This technical bulletin deals with common problems encountered on various manufacturers' vehicles by the helpline staff over the last few months. These faults have been re-occurring during this time, and the following topics detail the faults and where possible the solutions to the problems.

SUBARU IMPREZA - ABS SYSTEM PROBLEM

Fault

ABS warning light constantly "ON" with no ABS operation. Callers often remark that they are unable to communicate with the ABS ECM even though using suitable diagnostic equipment.

Cause

The ABS ECM / hydraulic modulator / ABS pump units are a combined unit assembly and are located behind the off side front headlamp. The caller reported that the harness plug was full of water and the terminals were found to be excessively corroded, to the point where the harness plug and ABS ECM needed replacing. The caller also reported that this was the second time he had experienced the problem on Subaru Impreza vehicles.

Vehicles

Model	Year	Engine code
Subaru Impreza 2.0 Turbo	1998 onwards	2.0 turbo models

Rectification

If the terminals on both the ABS ECM and ABS ECM harness plug are heavily corroded beyond cleaning and repair, it will be necessary to replace both the ABS ECM / hydraulic modulator / ABS pump assembly in addition to the ABS ECM harness plug.

PEUGEOT 206 - CENTRAL DOOR LOCKING PROBLEM

Fault

Central door locking faults including the Central door locking system not operating on one or more doors and the Central door locking system intermittently locking and then immediately unlocking.

Cause

Repeated problems of Central Door Locking (CDL) failure have been traced to water ingress into the harness plug connection to the CDL unit within the door, causing bad corrosion to the terminals.

The central locking motor / switch and lock assembly are all encapsulated within one unit, and individual components cannot be renewed separately. It is not possible to diagnose CDL faults by disconnecting solenoids / switches etc because the Built in Systems Interface (BSI) control module logs a fault. Until the fault is rectified the CDL will unlock instantly.

Vehicles

Model	Year	Engine code
Peugeot 206	1998 onwards	All models without dead locking

Rectification

Peugeot recommend replacing both the O/S and N/S CDL units together. The CDL motor / switch assemblies are wired directly to the Built In Systems Interface control module which can be found attached to the interior fuse box situated under the dash on the O/S just above the drivers right knee.

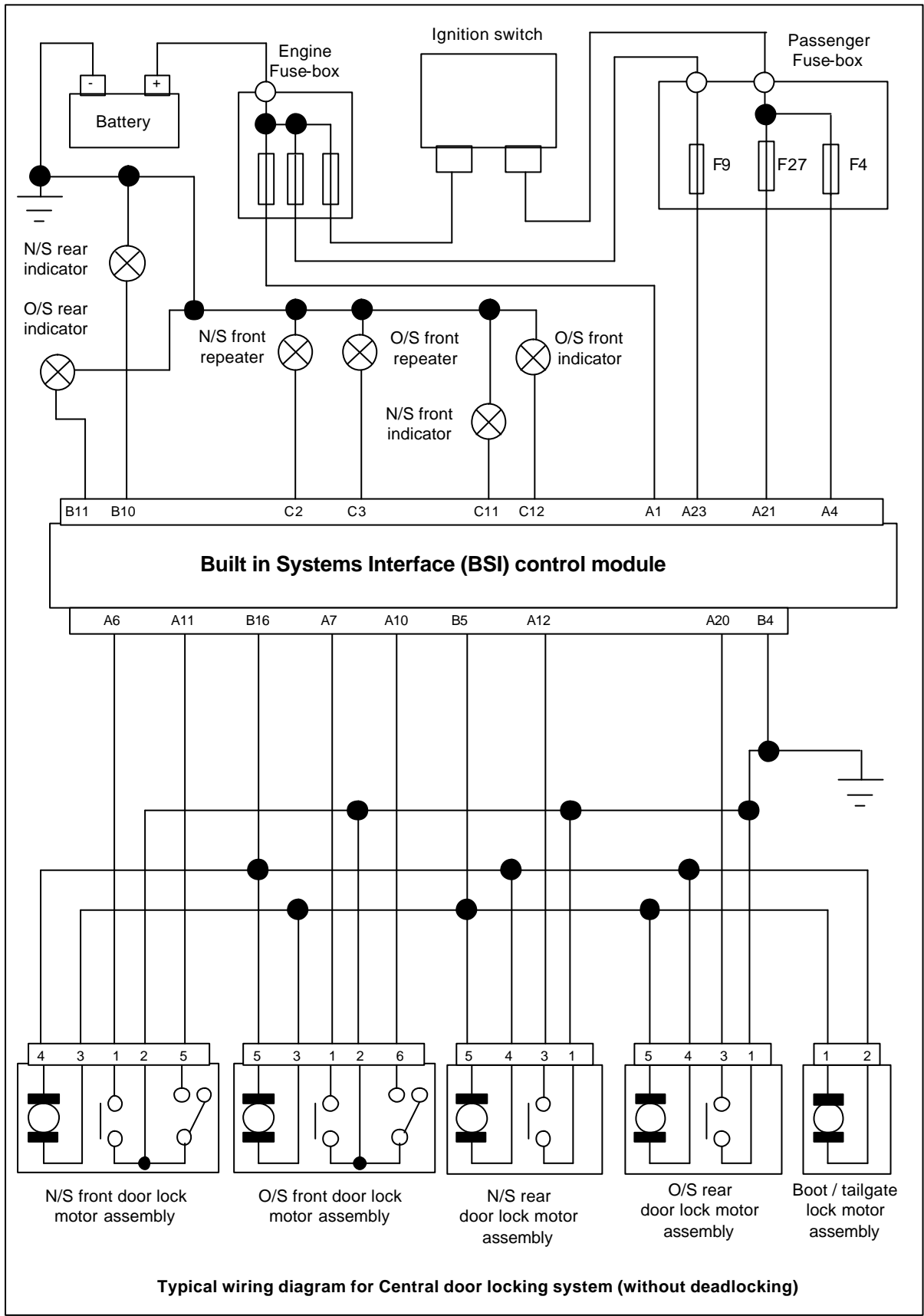
New latch assemblies (replacement of both sides is recommended by Peugeot) are supplied with different wiring / harness plug configuration i.e. new latch assemblies have different connecting plug shape / configuration. Therefore the manufacturer includes the new corresponding half of the connecting plug assembly within the replacement parts. To adapt the new latch wiring proceed as follows:

Remove existing harness plug from body wiring loom and re-connect to the new replacement harness plug in the following order.

N/S door wire unit	Original harness plug	New harness plug	Connection to CDL system
693 (orange wire)	6	1	CDL module terminal A6
M6240 (green/yellow wire)	4	2	Direct earth connection
6202 (brown wire)	2	3	CDL module terminal B5
6212 (brown wire)	7	4	CDL module terminal B16
6232 (orange wire)	3	5	CDL module A11
O/S door wire unit	Original harness plug	New harness plug	Connection to CDL system
693 (orange wire)	6	1	CDL module terminal A7
M6240 (green/yellow wire)	4	2	Direct earth connection
6202 (brown wire)	2	3	CDL module terminal B5
6212 (brown wire)	7	5	CDL module terminal B16
6232 (orange wire)	3	6	CDL module A10

Note. Above information in table is for Central door locking system without deadlocking. Central door locking systems with deadlocking have 8 wire latch assemblies. At present no calls have been received regarding failure or replacement of this type of Central door locking system.

Refer to the wiring diagram on the following page for details of the Central door locking system without deadlocking facilities.



ROVER 1.4 K SERIES ENGINE - STARTING PROBLEM

Fault

It was reported on the helpline that a caller had fitted a second hand engine from Rover 25 1.4 MPI vehicle to a 1998 214 1.4 MPI vehicle. Upon completion of work, all wiring to the engine management system was checked and vehicle would crank over but would not start. Caller even tried fitting the original Crankshaft position sensor (CPS) from the Rover 25 vehicle but without success.

Cause

Upon inspecting the difference between the two engines, it was noted that the original Rover 214 engine was fitted with a MEMS 1.9 engine management system, and the engine from the Rover 25 was fitted with the MEMS 3 engine management system.

On initial inspection the 1.4 MPI engines seemed identical, but on closer inspection the flywheels with the reluctor disk were seen to be different. It was noted that the gaps in the reference teeth were different between the two engine management systems, and this difference stopped the engine from starting.

Vehicle

Model	Year	Engine code
Rover 214	1998	1.4 MPI K series engine

Rectification

The caller fitted the original flywheel and reluctor disk from the old 214 1.4 engine to the later 25 1.4 engine and the vehicle started and ran perfectly.

FORD FOCUS - ABS WHEEL SPEED SENSORS

INFORMATION

Ford Focus models fitted with ABS use Wheel speed sensor reluctors which are housed within the front wheel bearings, therefore correct fitment of the wheel bearings is critical. To ensure correct fitment the front wheel bearings are colour coded at each end.

The Front wheel bearings should be fitted into the hubs so that the black ends of the wheel bearings are mounted inboard and the orange ends of the wheel bearings are mounted outboard.

Vehicle

Model	Year	Engine code
Ford Focus	???? onwards	All models with ABS

Note. *The ABS self diagnostic system has the same characteristics as the Ford Mondeo vehicles, i.e. any non-permanent induced fault detected by the ABS ECM, such as wheel rotation with the ignition switched "ON" (e.g. when carrying out an MOT brake test etc) will cause the ABS warning light (MIL) to illuminate.*

To reset the ABS system and turn off the ABS warning light (MIL), drive the vehicle and if the ABS ECM does not detect any faults in the ABS system, the ABS warning light (MIL) will then turn off.

If the ABS system warning light (MIL) is still "ON", use suitable test equipment to retrieve the self diagnostic fault codes from the ABS ECM and carry out necessary repairs.

RENAULT MEGANE - BAD EARTH FAULTS (UPDATE)

Fault

Calls have been received on the helpline, regarding various Renault Megane vehicles experiencing poor running and excessive emission faults.

Cause

Faults have been traced to bad earth connections to the engine management ECM (ECM terminals 2,3 & 18). After tracing the fault, callers have phoned the helpline again to report their successes.

It has been noted that when the vehicles are running perfectly with the lambda sensor switching between 0.2v to 0.8v and having zero exhaust emissions, the injection duration value measured on an oscilloscope is approximately 5.6 ms.

Vehicle

Model	Year	Engine code
Renault Megane 1.6 8v	1999 onwards	K7M - 702 - Fenix 5 eng man system
Renault Megane 1.6 16v	2000 onwards	KM4 - 700 - Siemens Sirius eng man system

Rectification

Above info relates to Fenix 5 system. On Siemens Sirius engine management systems ECM terminals 3, 28 & 30 are earths. On both systems the earth point is located on underside of the inlet manifold. A second earth is also found close to this point and secures to the bulkhead.

Incidences of bad earthing at this point have also been reported, caused by body paint preventing good contact. More detailed reports have described one earth point as being at the back of the engine, which is effectively under the inlet manifold but not attached to it, at the very base of the block close to the sump joint.

This particular earth point is secured by a torx headed bolt. Other earth leads are found above the alternator near to the lifting hook, one of which is attached to the alternator bracket.

AUDI / VW - STARTING PROBLEM

FAULT

The Audi models detailed are fitted with the Simos / Simos II engine management systems. On this types of engine management system, the helpline has received calls detailing non start problems, caused by the engine management system ECM not operating the ignition, injection and fuel pump circuits.

Cause

Incidences of non starting have been traced to a common fault with the Crankshaft position sensor (CPS) in which the CPS fails in an open circuit condition.

Vehicles

Model	Year	Engine code
Audi A4 1.6	1996 to 2001 (AHL) 1997 to 2004 (AKL)	AHL & AKL engines
VW Polo / Golf 1.6	1997 to 2004 (AHL) 1997 to 2004 (AKL)	AHL & AKL engines

Rectification

Generally, replacement of the Crankshaft position sensor rectifies the fault and the engine starts and runs normally. On one occasion a caller replaced the CPS but the engine still would not start. The caller eventually traced the fault to the CPS reluctor.

The CPS reluctor is fitted internally at the rear of the engine and is close to the rear main bearing journal. The caller reported that the reluctor teeth were found to be seriously worn causing an inadequate cranking voltage on the CPS due to the excessive air gap.

The caller reported that he thought that this was due to an incorrect CPS sensor having been previously fitted at some time. This sensor was too long, causing damage to the Reluctor teeth.

The CPS itself is in a fairly inaccessible position, being located under the inlet manifold. It has been reported that it may be easier to follow the wiring from the GREY harness connecting plug located on the bulkhead, and following the wiring from this harness plug down to the CPS.

Note. *The Crankshaft position sensor is also seated on an "O" ring and it is reported that care must be taken to ensure correct seating when bolting down the CPS to prevent damage to both the "O" ring and CPS.*

RENAULT MEGANE - STARTING PROBLEM

Fault

In conjunction with a poor starting problem on the vehicle, the helpline caller also reported a dim flashing of the SRS warning light (MIL), a half scale deflection of the temperature gauge, the rev counter reading 2000 rpm with engine stationary, all with no ignition HT spark, no fuel injector pulsing and no fuel pump operation.

Cause

Upon initial investigation using self diagnostic equipment, the caller was unable to communicate with the vehicle's engine management or SRS system control modules. Eventually the fault was traced to an under bonnet blown fuse contained within an electrical box attached to the N/S suspension turret, next to the engine man ECM and relay. All four fuses within this box are 7.5 amp fuses.

Vehicles

Model	Year	Engine code
Renault Megane	1997 / 98 on	All models

Rectification

Check and replace any blown fuses in engine compartment fuse box.

PEUGEOT 307 - ELECTRO HYDRAULIC POWER STEERING PROBLEM

Fault

Caller reported that the Electro Hydraulic Power Steering system (EHPS) was not operating after a low speed accident.

Cause

Peugeot dealer reported that if the vehicle is involved in an accident impact which is in excess of approx 1g of impact force, the EHPS control module (ECM) will default to an accident safe mode.

Vehicles

Model	Year	Engine code
Peugeot 307	2001 onwards	All models with electric power steering

Rectification

In the accident safe mode, the electro-hydraulic power steering system defaults to minimum power steering assistance and will not return to normal operation until the EHPS is interrogated with self diagnostic equipment to check for fault codes, and if no faults are found the EHPS, is reset.

FORD FIESTA - HIGH RPM PROBLEM

Fault

Idle would intermittently rev up to 4000 rpm. Car would also accelerate on its own up to around 3000 rpm when driven off. If clutch depressed during this time while driving, the engine would rev up to 4000 rpm.

Cause

The Ford EECV engine management system ECM requires reprogramming.

Vehicles

Model	Year	Engine code
Ford Fiesta 1.25 Zetec	1996 onwards	All 1.25 Zetec models

Rectification

At present the vehicle needs to be returned to a Ford dealer for the engine management ECM to be reprogrammed using dedicated equipment. It has been noted that affected Ford EECV engine management ECMs have a part no. 97FB-12A650-ASA.

Later Ford EECV engine management ECMs have a part no. 97-12A650-AFC.

After the original Ford EECV engine management ECM has been reprogrammed, the Ford dealer should tag the Ford EECV ECM with the new part number.

VAUXHALL ZAFIRA - MISFIRE PROBLEM

Fault

Caller reported to the helpline that the vehicle had developed a misfire under load, especially when the engine was hot. It was also mentioned that as the misfire occurred, the engine would suddenly appear to run on only 3 cylinders.

The engine running on 3 cylinders would continue until the ignition was switched OFF. If the engine was re-started the engine would run on all 4 cylinders again until the misfire reoccurred under load, and then the engine once again appeared to be running on only 3 cylinders.

Cause

The initial misfire fault under load was finally traced to cylinder no 1 on the engine. The fault was caused by a poor output from the DIS ignition coil pack fitted to the vehicle.

Upon testing the vehicle, it was discovered that when the misfire occurred on cylinder no 1, the Multec engine management ECM would switch OFF the fuel injector for the affected cylinder.

The caller reported that when the engine was switched OFF and then restarted the misfire would disappear, and the fuel injector for cylinder no 1 would operate normally again.

Vehicles

Model	Year	Engine code
Vauxhall Astra G 1.6 16v	2001 to 2004	Z16XE engines with Multec engine management system
Vauxhall Meriva 1.6 16v	2003 to 2004	Z16XE engines with Multec engine management system
Vauxhall Vectra B 1.6 16v	2001	Z16XE engines with Multec engine management system
Vauxhall Vectra C 1.6 16v	2002 to 2004	Z16XE engines with Multec engine management system
Vauxhall Signum 1.6 16v	2002 to 2004	Z16XE engines with Multec engine management system
Vauxhall Zafira 1.6 16v	2001 to 2004	Z16XE engines with Multec engine management system

Rectification

The misfire under load fault was corrected by the fitment of a new DIS ignition coil pack.

Note. *It appears that the later Vauxhall engines starting with the new prefix "Z" fitted from approximately 2001 onwards, are now fitted with later type Multec engine management system ECM's which can switch OFF one or more of the fuel injectors on the engine when a cylinder misfire fault is detected.*

If an ignition misfire is detected then the Multec ECM will switch OFF the injector for the affected cylinder until the ignition has been switched OFF for a period of 20 seconds. A new coil pack rectified the problem being discussed.



Copying or reproduction, in whole or in part of this publication by any means, is prohibited without the permission of the publishers.

Whilst every effort has been made to ensure that all the information in this publication is correct, the authors and publishers accept no liability in connection with the use of the contents