Diagnostics Release Note– Range Rover 14

These Release Notes contain important information regarding Land Rover Diagnostic CD Releases.

Please ensure that all users of Land Rover Diagnostic hardware at the location are made aware of the content.

Applicable to:

T4	✓
T4 Mobile+	✓
T4 Hand Held Tester	✗

CD USE GUIDANCE

It is **IMPERATIVE NOT** to **USE** old Diagnostic / Configuration CDs unless agreed with Land Rover Technical Support Hotline or a Product Investigation Brief explaining the use of superseded T4 CDs.

A number of issues have been reported relating to the use of previously superseded T4 CDs. This has impacted on customer satisfaction.

Please ensure that **ALL** superseded CDs are collected from the workshop and stored in a secure area.

Request for use must be sanctioned by the Workshop Supervisor or Land Rover Technical Support or a supported Product Investigation Brief.

PLEASE ENSURE THAT ONLY THE LATEST ISSUE OF ANY T4 CDs ARE ISSUED TO THE WORKSHOP TECHNICIANS BY THE SERVICE MANAGER OR SUPERVISOR.

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN COMPROMISE OF WARRANTY CLAIMS AND CUSTOMER SATISFACTION

What's New On This CD?

This release is for New Range Rover and contains updates to 05MY Diagnostic Trouble Code reporting, changes to Interior Light personalisation features, support of Factory Fit 19" wheels on Diesel variants and new petrol and diesel tunes.

05MY Diagnostic Trouble Code Reporting

New fault codes have been included to support updated systems on 05 Model Year vehicles. There are new fault codes for the following systems:

- ME7.2 Petrol Engine Management
- Petrol Automatic Transmission Control Unit

Interior Light Personalisation

The personalisation for interior lights has changed for the revised Body Control Unit (BCU). The option enables the interior lights to illuminate when the tailgate is opened.

Diesel Factory Fit 19" Wheels

In order to support 19" Wheel option on diesel derivatives, there has been a new engine management calibration released. An LCS icon offers the option to switch between 18" and 19" wheels fitted for diesel variants. After changing the LCS icon to the correct setting a tune download needs to be performed to download the correct tune.

Engine Management Calibrations

There are new engine management calibrations included on this disc to support tune updates for ME7.2 Petrol Engine Management and DDE4 Diesel Engine Management.

Reference

Below is additional information on diagnostic changes included on previous discs and general guidance notes to aid in vehicle diagnostics.

ME7.2 Diagnostic Trouble Code Strategy

Changes have been made to how the diagnostic trouble codes are displayed. Previously the low level P-code was only displayed in the fault explorer window with a high level P-code displayed on the fault code read screen. This has now been changed to display the low level fault code on all fault code read screens. A consistent approach has been applied to ensure the information is easier to interpret.

Tune Download Strategy

The generic tune download strategy has been modified to remove a warning screen that was previously displayed when a 'virgin' ECU was fitted prior to attempting a tune download. The diagnostics will now allow 'virgin' ECUs to be fitted without any warning message being displayed.

Rain Sensor Diagnostics

New diagnostics and fault codes have been included to support the new 2nd Generation Rain Sensor ECU module.

Satellite Navigation Language Restore Setting

It is now possible to recover and restore a satellite navigation unit, which may have previously 'locked' up. It was common for the units to lock up during changing of the unit's language settings either due to a corrupt satellite navigation system disc or not inserting the system disc when requested within the allotted time. This would then require the complete unit to be returned and replaced. If the satellite navigation unit should lock up, there is now a new icon within 'Vehicle Maintenance' for the unit to be fully restored to its original language setting and returned to a working condition.

Basic Toolbox

The Basic toolbox feature on the T4 Welcome Screen has been fixed. It is now possible to use this feature for independent current readings, ohms and voltage measurements. This feature operates the same as on the Archive diagnostics disc.

Personalisation

There are now improved instructions and advice notes prior to entering the personalisation diagnostics. These instructions are intended to provide clear instructions and advice on how to use this diagnostic feature.

HEVAC Water Valves Real Time Displays

The real time display icons for the HEVAC water valves, which previously did not work, have now been fixed and the correct data should now be available to view.

ATCU Real Time Displays

The following real time displays have now been fixed and display the correct values:

- Engine coolant temperature
- Transmission oil temperature

New Petrol Engine Management Hardware

New diagnostics are implemented to support new hardware for the ME7.2. New hardware is introduced on all ME7.2 petrol variants and will be fully supported. The new hardware's part number format has changed and will be displayed accordingly.

Instrument Pack Diagnostic Changes

The diagnostics have been changed to ensure compatibility with the forthcoming changes to entertainment and information systems being implemented at 05MY.

Body Control Unit Alarm Trigger History Update

There was an issue in the reporting of the alarm trigger history where T4 reported an unknown code and exited out of the diagnostics. This has been corrected on this release. Only valid alarm trigger data is now displayed.

Electric Steering Lock Information Memory

The diagnostics have been updated to display the Electric Steering Lock Information Memory. To display the information memory, select 'System Diagnostics', 'Security', 'Vehicle Maintenance' and 'Steering Lock Information'.

If fault codes are cleared on the Steering Lock, or the reset option is selected this will reset ALL of the information memory.

Tune Download Procedure Enhancements

The tune download procedure enhancements did not allow reprogramming of a new tune when the configuration data did not match the currently programmed tune. The tune download procedure has been updated to allow reprogramming of the new tune.

Petrol Idle Speed Adjustment

The Petrol Idle Speed adjustment facility has been removed for North American specification vehicles only. The idle speed adjustment continues to be available for all other market specifications.

Personalisation Updates

The personalisation function has been improved. The previous version would determine which features had changed and which ECUs were affected and ONLY program those settings. Now the personalisation function displays the currently set options for each ECU. Each screen then has to be viewed and on the last page then the option is available to 'Continue'.

When the 'Continue' button is selected the settings displayed on screen are then coded to all ECUs.

Wallet key deletion

The wallet key has been deleted from the vehicle specification and the diagnostics have been updated to support this change.

Body Control Unit Alarm Trigger History

The alarm trigger history can now be displayed using T4. To display the alarm trigger history, select 'System Diagnostics', 'Security', 'Vehicle Maintenance' and 'Alarm Trigger History'

This option will then display the alarm trigger history.

For each alarm trigger the following data is displayed:

- Alarm trigger ID – this is the alarm trigger ID for the alarm displayed on the screen
- Alarm description –this describes which alarm sensor triggered this alarm
- Alarm code – this is the alarm trigger code.
- Alarm frequency – this is the number of times the relevant alarm has been triggered
- Alarm present – this displays whether it is an old trigger or the last alarm triggered

If fault codes are cleared on the BCU, or the reset option is selected this will reset ALL alarm trigger history.

LCS Configuration

The 'LCS Configuration' function within the 'Vehicle Configuration' menu allows the user to modify the diagnostic data for the vehicle. This data is used by T4 to determine the systems fitted to the vehicle. Note that changing these settings **DOES NOT** change the vehicle operation, but only the diagnostic data. For example, it is not possible to inhibit operation of SRS airbag(s) by de-selecting in LCS configuration. Changes to some options may result in the relevant diagnostic not being displayed.

In normal circumstances, it is not necessary for a user to modify any of these settings, and changes must only be made after consultation with Land Rover Technical Support.

Battery Voltage Warning

It is essential that the vehicle battery is providing sufficient voltage prior to any diagnostic procedure, as low voltage levels can cause vehicle systems to stop responding to diagnostic commands. In order to prevent such occurrences, a check has been added into the beginning of T4 diagnostics to perform an automatic measurement of battery voltage.

If the battery voltage is below 11.5 Volts a warning message is displayed on the screen recommending the battery be charged before any diagnostics are carried out.

If the battery voltage is below 8.5 Volts then T4 will not allow ANY diagnostics to be performed. Ensure the battery is recharged before attempting further diagnostics.

Satellite Navigation – Power-down precautions

In order to avoid permanent damage to the satellite navigation computer, always follow the guidelines below before disconnecting the vehicle battery:

- Ensure the satellite navigation computer access panel in the load area is open, and that either the tailgate is open or the luggage cover is folded away
- Ensure ignition is off and key removed from vehicle.
- Ensure that all four passenger doors are closed
- Observe the LED power indicator on the satellite navigation computer. After approximately 2 minutes, this LED should extinguish. During this time, DO NOT open or close any vehicle doors or the tailgate, as this will extend the power-down time.
- Once the LED has extinguished, close the tailgate if required. It is now safe to disconnect the vehicle battery.

'MIL' On Diagnostics

In the case where the 'MIL' (Malfunction Indicator Lamp) is activated, ensure that both the Engine Management ECU and Transmission ECU fault codes are checked as a fault in either system can cause MIL activation. There is no generic OBD Scan Tool functionality within T4. The T4 HHT includes a generic scan tool function, which can also be used.

Telephone Handset Registration/Deregistration

The telephone handset can now be registered and deregistered using T4. When registering/deregistering the handset ensure the Radio switch located by the handset cradle, is set to '1'.

To change the Telephone Handset language, follow the instructions below:

- Insert the SIM card in to the handset cradle and ensure that the handset is switched on.
- When the telecom service provider's name is displayed on the handset, select menu.
- Press number '7' on the handset keypad.
- When 'Sprache' (or language alternative see table below) is highlighted press 'OK'.
- Using the menu keys, scroll down to the appropriate language and press ‘OK’.
- Press higher menu level button to exit menu.

The procedure is now complete and the telephone is set to the correct language.

The handsets are supplied with German as the default language. The table below contains the available languages and the messages displayed during registration.

Language	**Description**				
German	Bitte Anmelden	Gerätecode	Anmeldung lauft	Bitte Setzen sie Ihre karte ein	Sprache
UK	Please register	Equipment code	Logging on in process	Please insert your card	Language
French	Connecter svp	Code appareil	Connexion en cours	Introduisez votre carte	Langue
Italian	Connettere prego	Codice telefono	Connessione in corso	Introdurre la scheda	Lingua
Dutch	Aub aanmelden	Toestelcode	Bezig met aanmelden	A.U.B uw kaart aanbrengen	Taal
Spanish	Inscribir	C digo aparato	Inscribiendo	Ponga su tarjeta	Idioma
Vlaams	Aanmelden	Toestelcode	Bezig met anmelden	Uw kaart inbrengen A.U.B	Taal

Rain Sensor Reset

If the Rain Sensor ECU is not functioning correctly then there is now an option to reset the values learnt. This means that the Rain Sensor ECU does not need to be replaced in the case of poor screen adaption.

Fault Code Diagnostics

To aid in diagnosing faults present on the vehicle then it is useful to carry out a global fault code read due to the ECU interactions on New Range Rover. This can help pin point a particular area or help explain why some systems are behaving differently

Help Desk Forms

The 'T4 Contact Details' section in the Release Notes contains the latest copy of the Help Desk forms. It has been modified to allow you to type in the details so you can email them. Please print out and use when contacting either the Land Rover Technical Hotline or the Omitec T4 Help Desk.

Disc Care

Dirt, dust, condensation and heat can damage the discs. Always observe the following precautions:

NEVER touch the horizontal playing surface (the unlabelled side) of the disc. Handle discs by holding the outer edges, or the edge of the central hole the outer edge, between finger and thumb.

ALWAYS return discs to their supplied protective wallets after use and ensure that there is only ONE CD per wallet. Dirt and scratches can affect the ability of the disc to be read.

NEVER leave the disc or the box exposed to excessive heat or direct sunlight.
NEVER use a solvent or abrasive. Dust or dirt should be removed from the playing surface by wiping with a clean dry, lint free cloth always wipe in a straight line from the center to the edge of the disc.

If your T4 disc is damaged, replacements are available from Omitec at a charge of £15 per CD (including shipping).

Communication Data Bus Fault Finding

If there is a problem communicating with the vehicle and T4/TestBook indicates that there is a problem with the Communication Bus then the Bus needs to be diagnosed.

Faults with the CAN-Bus are picked up via fault codes in the individual ECUs that are on the CAN-Bus. Check the links between the specific ECU's highlighted with problems for connectivity.

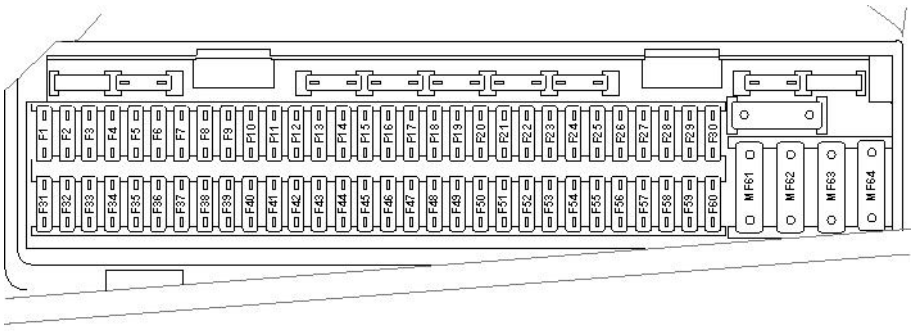
If the K Bus or the I Bus fails, it may not be possible to establish communications with ANY ECU on the relevant bus and the vehicle is exhibiting symptoms of either Bus being down (i.e. if the K bus is down the Electric Steering Lock will not "lock" or if the I Bus is down the Radio will not function correctly).

As a first check ensure the relevant fuses are fitted and have not blown. The fuses to check are:

The engine compartment fuse box is located in the environmental box (E box). The passenger fuse box is located behind the glove box.

The engine compartment fuse box contains blade type fuses only.

Engine Compartment Fuse Box			
Fuse	**Rating**	**Applicability**	**Description**
F1	30A	V8	Engine Management ECU, Electronic Automatic Transmission ECU
F1	30A	Td6	Engine Management ECU
F3	30A	Td6	Electronic Automatic Transmission ECU
F4	30A	V8	Engine Management ECU



M86 5908

The passenger compartment fuse box contains three different types of fuse:

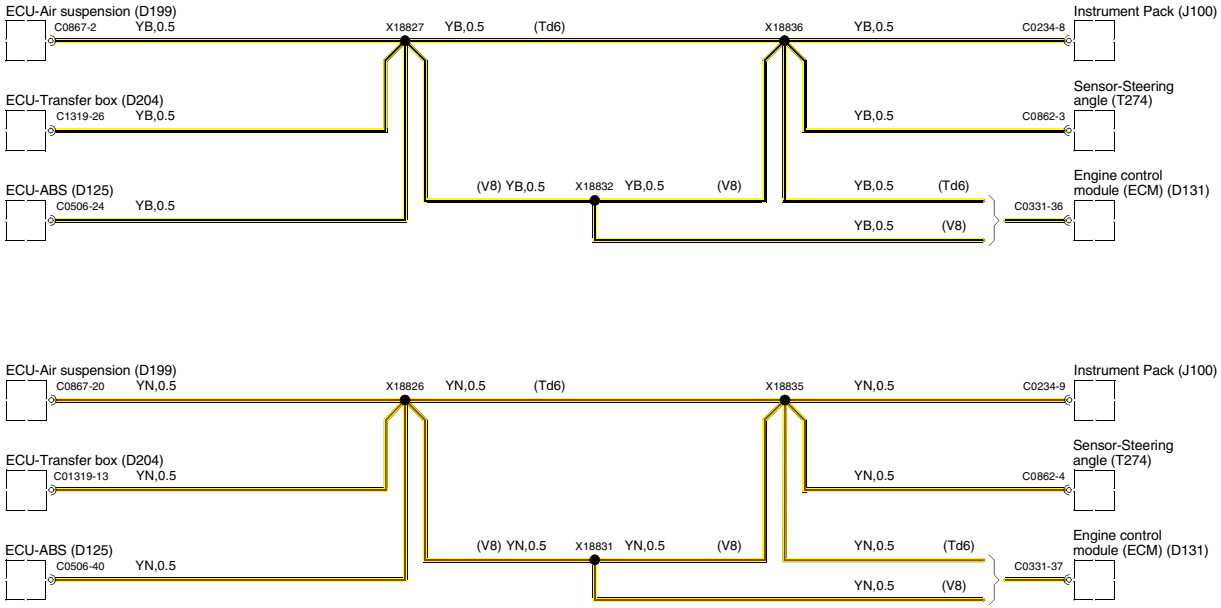
- Blade type fuse – small pull out male fuse used to protect circuits 5A to 30A. Blade type fuses are shown with a 'F' prefix
- Maxi-fuse – a larger version of the blade type fuse. Used to protect circuits at 50A. Maxi-fuses are shown with a 'MF' prefix.
- Bolt down fuse – also known as a fusible link, used to protect circuits from 50A to 100A. Bolt down fuses are shown with a 'FL' prefix.

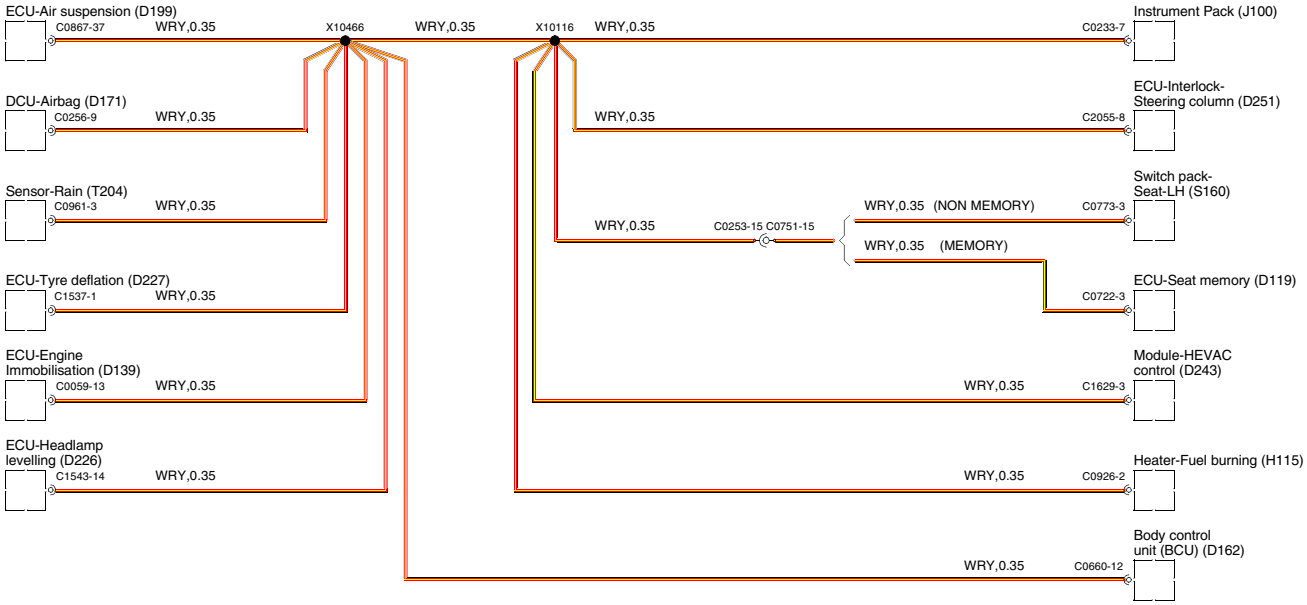
Passenger Compartment Fuse Box			
Fuse	**Rating**	**Applicability**	**Description**
FL2	60A	V8	Immobilisation ECU
FL3	50A	All	Light Check Module
FL4	50A	All	Light Check Module
F1	5A	All	Instrument Pack
F4	5A	All	Light Check Module, Door Lamp Module

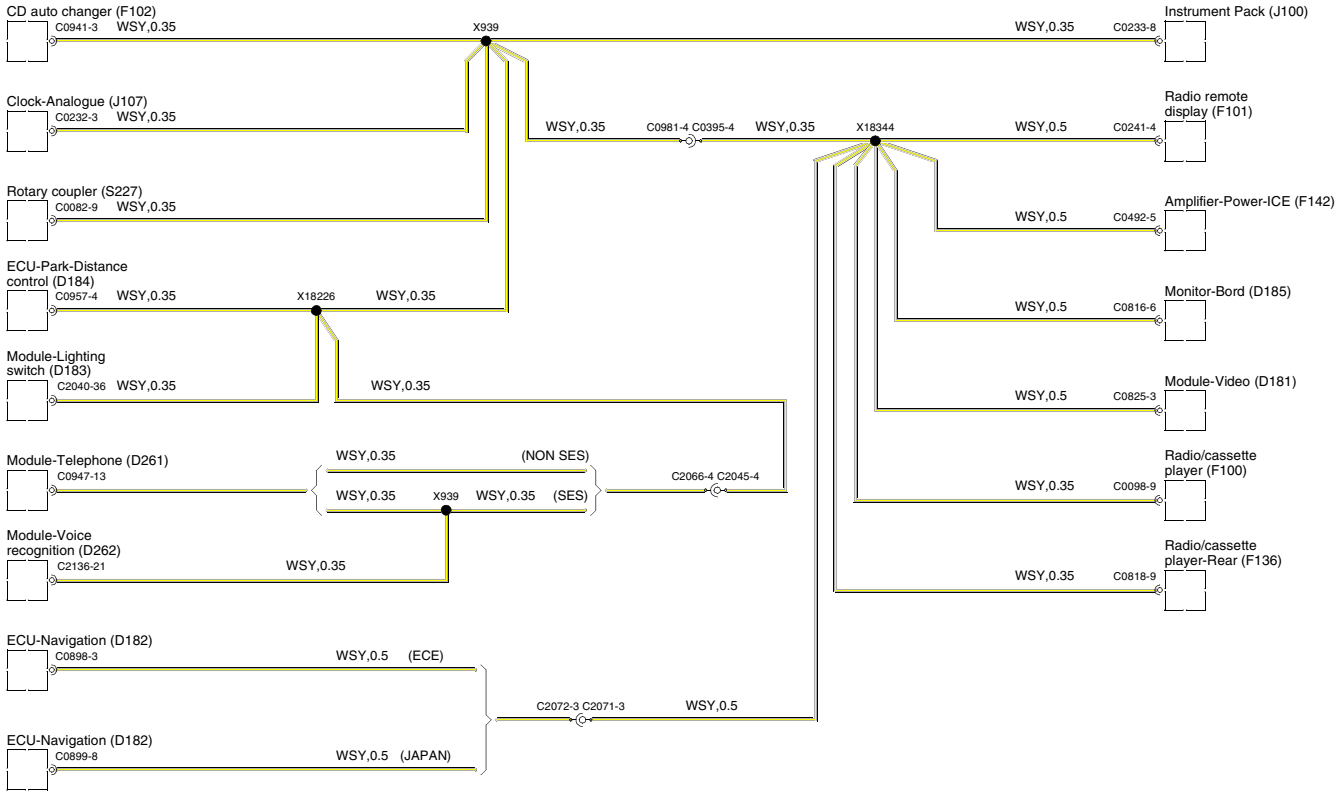
F5	7.5A	All	Diagnostics, Electronic Automatic Transmission ECU
F6	5A	All	Park Distance Control ECU
F8	5A	All	Audio System, Telephone
F9	5A	All	Light Check Module
F11	30A	All	Drivers Door Module
F12	10A	All	HeVAC Control Unit
F13	5A	All	Steering Angle Sensor
F15	5A	All	Diagnostics, Body Control Unit
F17	5A	All	Interior Lights/Body Control Unit
F18	10A	All	Engine Immobilisation ECU, Steering Column Lock ECU
F20	30A	All	LH seat switch pack
F21	30A	All	RH seat switch pack
F22	7.5A	All	Telephone
F24	30A	All	Passenger door module
F27	20A	All	Body Control Unit (removed for transit purposes)
F31	5A	All	Engine Management ECU, Steering Column Lock ECU
F32	5A	All	LH Xenon headlamp, RH Xenon headlamp
F33	5A	All	Transfer Box ECU
F34	7.5A	All	HeVAC Control Unit
F37	5A	All	Transfer Box ECU (only fitted for towing purposes)
F41	5A	All	BODY CONTROL UNIT, Rain Sensor ECU
F44	5A	All	**SRS DCU – DO NOT REMOVE**
F45	5A	All	Instrument Pack
F46	5A	All	Instrument Pack
F49	30A	All	Audio System (removed for transit purposes)
F51	10A	Td6	Steering Angle Sensor, ABS ECU
F51	10A	V8	Steering Angle Sensor, Secondary Air Injection, ABS ECU
F52	25A	All	HeVAC Control Unit
F54	15A	All	Electronic Automatic Transmission ECU
F55	30A	All	ABS ECU
F57	15A	All	Air Suspension ECU
F58	20A	All	Sunroof ECU
F59	20A	All	Fuel Burning Heater
F60	30A	All	Body Control Unit
MF63	50A	All	ABS ECU

If all the fuses are in order, then disconnect individual ECUs until the Bus wakes up again. This will highlight the individual ECU(s) or associated wiring which is causing the problem. To check the wiring for that ECU, disconnect another ECU on the BUS and check for continuity on the circuit.

The following pages include schematics of the communications data buses to aid with investigations.


ECU-Air suspension (D199)
C0867-2
YB,0.5
X18827
YB,0.5
(Td6)
X18836
YB,0.5
C0234-8
Instrument Pack (J100)
ECU-Transfer box (D204)
C1319-26
YB,0.5
YB,0.5
C0862-3
Sensor-Steering angle (T274)
ECU-ABS (D125)
C0506-24
YB,0.5
(V8) YB,0.5
X18832
YB,0.5
(V8)
YB,0.5
(Td6)
YB,0.5
(V8)
C0331-36
Engine control module (ECM) (D131)
ECU-Air suspension (D199)
C0867-20
YN,0.5
X18826
YN,0.5
(Td6)
X18835
YN,0.5
C0234-9
Instrument Pack (J100)
ECU-Transfer box (D204)
C01319-13
YN,0.5
YN,0.5
C0862-4
Sensor-Steering angle (T274)
ECU-ABS (D125)
C0506-40
YN,0.5
(V8) YN,0.5
X18831
YN,0.5
(V8)
YN,0.5
(Td6)
YN,0.5
(V8)
C0331-37
Engine control module (ECM) (D131)


ECU-Air suspension (D199)
C0867-37
WRY,0.35
X10466
WRY,0.35
X10116
WRY,0.35
C0233-7
Instrument Pack (J100)
DCU-Airbag (D171)
C0256-9
WRY,0.35
WRY,0.35
C2055-8
ECU-Interlock-
Steering column (D251)
Sensor-Rain (T204)
C0961-3
WRY,0.35
WRY,0.35
C0253-15 C0751-15
WRY,0.35 (NON MEMORY)
C0773-3
Switch pack-
Seat-LH (S160)
WRY,0.35 (MEMORY)
ECU-Tyre deflation (D227)
C1537-1
WRY,0.35
C0722-3
ECU-Seat memory (D119)
ECU-Engine
Immobilisation (D139)
C0059-13
WRY,0.35
WRY,0.35
C1629-3
Module-HEVAC
control (D243)
ECU-Headlamp
levelling (D226)
C1543-14
WRY,0.35
WRY,0.35
C0926-2
Heater-Fuel burning (H115)
WRY,0.35
C0660-12
Body control
unit (BCU) (D162)


CD auto changer (F102)
C0941-3
WSY,0.35
X939
WSY,0.35
C0233-8
Instrument Pack (J100)
Clock-Analogue (J107)
C0232-3
WSY,0.35
WSY,0.35
C0981-4 C0395-4
WSY,0.35
X18344
WSY,0.5
C0241-4
Radio remote display (F101)
Rotary coupler (S227)
C0082-9
WSY,0.35
WSY,0.5
C0492-5
Amplifier-Power-ICE (F142)
ECU-Park-Distance control (D184)
C0957-4
WSY,0.35
X18226
WSY,0.35
WSY,0.5
C0816-6
Monitor-Bord (D185)
Module-Lighting switch (D183)
C2040-36
WSY,0.35
WSY,0.35
WSY,0.5
C0825-3
Module-Video (D181)
Module-Telephone (D261)
C0947-13
WSY,0.35
(NON SES)
WSY,0.35
X939
WSY,0.35
(SES)
C2066-4 C2045-4
WSY,0.35
C0098-9
Radio/cassette player (F100)
Module-Voice recognition (D262)
C2136-21
WSY,0.35
WSY,0.35
C0818-9
Radio/cassette player-Rear (F136)
ECU-Navigation (D182)
C0898-3
WSY,0.5
(ECE)
C2072-3 C2071-3
WSY,0.5
ECU-Navigation (D182)
C0899-8
WSY,0.5
(JAPAN)

Petrol EMS Fault Codes versus Drive Cycle

Description	CDK	Plausibility	Signal	Minimum	Maximum	Test Drive Cycle to invoke diagnostic
ACC (adaptive Cruise Control) Intervention Plausibility	225	x	x		x	
Adaptive Cruise Control signal data implausible		P1518				n/a
Adaptive Cruise Control activity monitor error			P1519			n/a
Adaptive Cruise Control "OFF" reaction error					P1520	n/a
Exhaust valve output drive	142					n/a
Manifold valve output drive	236		x	x	x	
Intake Manifold Tuning Valve Control Circuit			P0660			n/a
Intake Manifold Tuning Valve Control Circuit				P0661		n/a
Intake Manifold Tuning Valve Control Circuit					P0662	n/a
Plausibility MSR Intervention	224	x				
no activity ("alive")		P1522				A
Catalyst damaging multiple cylinder mis-fire	75					n/a
Catalyst deamaging misfire 1 cylinder 1	63					n/a
Catalyst deamaging misfire 2 cylinder 8	64					n/a
Catalyst deamaging misfire 3 cylinder 6	65					n/a
Catalyst deamaging misfire 4 cylinder 3	66					n/a
Catalyst deamaging misfire 5 cylinder 2	67					n/a
Catalyst deamaging misfire 6 cylinder 5	68					n/a
Catalyst deamaging misfire 7 cylinder 7	69					n/a
Catalyst deamaging misfire 8 cylinder 4	70					n/a
Reference mark detection	112	x				
Timing Reference High Resolution Signal "A"		P0370				A
Brake lights switch fault	106	x				
Cruise Control/Brake Switch A Circuit		P0571				A + press brake pedal 3 times for > 5 secs with engine running
CAN-Timeout ACC	223		x			
Engine Control Module - CAN bus missing node - Adaptive Cruise Control module			P1650			n/a
CAN-Timeout ASC	221		x			
Engine Control Module - CAN bus missing node - brake control module			P1645			A
CAN-Timeout EGS	220		x			
Engine Control Module - CAN bus missing node - transmission control module			P1646			A
CAN-Timeout Instr	222		x			
Engine Control Module - CAN bus missing node - instrument pack			P1647			A
CAN-Timeout TXU	219		x			
Engine Control Module - CAN bus missing node - transfer box control module			P1651			A
DM-TL heater output drive	201		x	x	x	
DMTL heater intermittent			P1481			A
DMTL heater signal Low				P1482		A
DMTL heater signal High					P1483	A
Throttle position sensor	117	x				
Throttle/Pedal Position Sensor/Switch A Circuit		P0120				B
Throttle position sensor 1	118	x		x	x	
Throttle/Pedal Position Sensor /Switch "A" Circuit Range/Performance Problem		P0121				A
Throttle/Pedal Position Sensor/Switch A Circuit Low Input				P0122		A
Throttle/Pedal Position Sensor/Switch A Circuit High Input					P0123	A
Throttle position sensor 2	119	x		x	x	
Throttle/Pedal Position Sensor /Switch "B" Circuit Range/Performance Problem		P0221				A
Throttle/Pedal Position Sensor/Switch B Circuit Low Input				P0222		A
Throttle/Pedal Position Sensor/Switch B Circuit High Input					P0223	A
DM-TL solenoid valve output drive	2		x	x	x	
DMTL solenoid intermittent			P1456			A
DMTL solenoid signal Low				P1455		A
DMTL solenoid signal High					P1454	A
DM-TL pump motor output drive	186		x	x	x	
Evaporative emission control system leakage pump motor circuit open			P1488			A
Evaporative emission control system leakage pump motor circuit low				P1489		A
Evaporative emission control system leakage pump motor circuit high					P1490	A
DM-TL small leak (1,0 mm)	188			x	x	
Evaporative Emission Control System Leak Detected (small leak)				P0442		DM-TL force test via Testbook
Evaporative Emission Control System Leak Detected (gross leak)					P0455	DM-TL force test via Testbook
DM-TL very small leak (0,5 mm)	187			x		
Evaporative Emission Control System Leak Detected (very small leak)				P0456		DM-TL force test via Testbook

Petrol EMS Fault Codes versus Drive Cycle

Description	CDK	Plausibility	Signal	Minimum	Maximum	Test Drive Cycle to invoke diagnostic
DM-TL module	189	x	x	x	x	
DM-TL pump current vs. valve check too big		P1450				DM-TL force test via Testbook
DM-TL module humidity error			P1451			DM-TL force test via Testbook
DM-TL reference current too small				P1452		DM-TL force test via Testbook
DM-TL reference current too large					P1453	DM-TL force test via Testbook
Ambient pressure sensor	164	x		x	x	
Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance Problem		P0106				B
Manifold Absolute Pressure/Barometric Pressure Circuit Low Input				P0107		B
Manifold Absolute Pressure/Barometric Pressure Circuit High Input					P0108	B
Throttle output drive	132	x				
Throttle output drive		P1631				A
Throttle test failure	133				x	
Throttle adaption, spring test failed					P1639	A
Throttle position control error	130	x				
Throttle position control error		P1630				C
Throttle "limp home" position test	136	x				
ECM electronic throttle monitoring/self-test - "limp home" position not adapted		P1632				C
Throttle position control band	131			x	x	
ECM electronic throttle monitoring/self-test - stuck short				P1633		C
ECM electronic throttle monitoring/self-test - stuck long					P1634	C
Throttle control range learning	134	x				
Throttle control range not learnt		P1638				A
Throttle control amplifier gain	135	x				
ECM electronic throttle monitoring/self-test - control gain adaption error		P1635				C
EWS interface	148	x	x	x		
EWS message fault		P1674				A
EWS message time-out			P1621			A
EWS message parity bit fault				P1666		A
Throttle to air flow plausibility not active	163			x	x	
Air mass to load adaption too small				P1102		C
Air mass to load adaption too large					P1103	C
Electric thermostat (KFK) output drive	140		x	x	x	
Electric thermostat circuit open			P1614			A
Electric thermostat circuit low				P1615		A
Electric thermostat circuit high					P1616	A
Injector output drive EV1 Cyl.1	150		x	x	x	
Injector Circuit - Cylinder 1			P0201			A
Cylinder 1 Injector Circuit Low				P0261		A
Cylinder 1 Injector Circuit High					P0262	A
Injector output drive EV2 Cyl.5	151		x	x	x	
Injector Circuit - Cylinder 5			P0205			A
Cylinder 5 Injector Circuit Low				P0273		A
Cylinder 5 Injector Circuit High					P0274	A
Injector output drive EV3 Cyl.4	152		x	x	x	
Injector Circuit - Cylinder 4			P0204			A
Cylinder 4 Injector Circuit Low				P0270		A
Cylinder 4 Injector Circuit High					P0271	A
Injector output drive EV4 Cyl.8	153		x	x	x	
Injector Circuit - Cylinder 8			P0208			A
Cylinder 8 Injector Circuit Low				P0282		A
Cylinder 8 Injector Circuit High					P0283	A
Injector output drive EV5 Cyl.6	154		x	x	x	
Injector Circuit - Cylinder 6			P0206			A
Cylinder 6 Injector Circuit Low				P0276		A
Cylinder 6 Injector Circuit High					P0277	A
Injector output drive EV6 Cyl.3	155		x	x	x	
Injector Circuit - Cylinder 3			P0203			A
Cylinder 3 Injector Circuit Low				P0267		A
Cylinder 3 Injector Circuit High					P0268	A
Injector output drive EV7 Cyl.7	156		x	x	x	
Injector Circuit - Cylinder 7			P0207			A
Cylinder 7 Injector Circuit Low				P0279		A
Cylinder 7 Injector Circuit High					P0280	A
Injector output drive EV8 Cyl.2	157		x	x	x	

Petrol EMS Fault Codes versus Drive Cycle

Description	CDK	Plausibility	Signal	Minimum	Maximum	Test Drive Cycle to invoke diagnostic
Injector Circuit - Cylinder 2			P0202			A
Cylinder 2 Injector Circuit Low				P0264		A
Cylinder 2 Injector Circuit High					P0265	A
Pedal position sensor 1	231	x		x	x	
Pedal position sensor range/Performance Problem		P1121				B
Pedal Position Sensor Low Input				P1122		A
Pedal Position Sensor High Input					P1123	A
Pedal position sensor 2	232	x		x	x	
Pedal position sensor range/Performance Problem		P1221				B
Pedal Position Sensor Low Input				P1222		A
Pedal Position Sensor High Input					P1223	A
Pedal position sensor	230	x				
Pedal Position Sensor circuit		P1120				B
Lambda control adaption B1 exceeds upper adaption range thresholds	24			x	x	
System too Rich				P0172		C
System too Lean					P0171	C
Lambda control adaption B2 exceeds upper adaption range thresholds	25			x	x	
System too Rich Bank2				P0175		C
System too Lean Bank2					P0174	C
Lambda control adaption B1 exceeds lower adaption range thresholds	26			x	x	
System too Rich				P0172		C
System too Lean					P0171	C
Lambda control adaption B2 exceeds lower adaption range thresholds	27			x	x	
System too Rich Bank2				P0175		C
System too Lean Bank2					P0174	C
Lambda control shorttest						
Lambda control shorttest B2						
Fuel tank level plausibility	226	x	x	x	x	
Fuel Level Sensor Circuit Range/Performance		P0461				C
Fuel Level Sensor Circuit Intermittent			P0464			A
Fuel Level Sensor Circuit Low Input				P0462		n/a
Fuel Level Sensor Circuit High Input					P0463	n/a
TXU Signal Plausibility	127	x				
Signal implausible (CAN vs. calculated)		P1700				F
Engine control module - CAN message information error - transfer box control module			P1709			F
Lambda sensor heater post-cat B1	14	x	x	x	x	
O2 Sensor Heater Circuit Bank1 Sensor2		P0141				C
O2 Sensor Heater Circuit intermittent (Bank 1 Sensor 2)			P0036			C
O2 Sensor Heater Circuit Low Voltage (Bank 1 Sensor 2)				P0037		C
O2 Sensor Heater Circuit High Voltage (Bank 1 Sensor 2)					P0038	C
Lambda sensor heater post-cat B2	4	x	x	x	x	
O2 Sensor Heater Circuit Bank2 Sensor2		P0161				C
O2 Sensor Heater Circuit intermittent (Bank 2 Sensor 2)			P0056			C
O2 Sensor Heater Circuit Low Voltage (Bank 2 Sensor 2)				P0057		C
O2 Sensor Heater Circuit High Voltage (Bank 2 Sensor 2)					P0058	C
Lambda sensor heater pre-cat B1	13	x	x	x	x	
O2 Sensor Heater Circuit Bank1Sensor1		P0135				C
O2 Sensor Heater Circuit intermittent (Bank 1 Sensor 1)			P0030			C
O2 Sensor Heater Circuit Low Voltage (Bank 1 Sensor 1)				P0031		C
O2 Sensor Heater Circuit High Voltage (Bank 1 Sensor 1)					P0032	C
Lambda sensor heater pre-cat B2	5	x	x	x	x	
O2 Sensor Heater Circuit Bank2 Sensor1		P0155				C
O2 Sensor Heater Circuit intermittent (Bank 2 Sensor 1)			P0050			C
O2 Sensor Heater Circuit Low Voltage (Bank 2 Sensor 1)				P0051		C
O2 Sensor Heater Circuit High Voltage (Bank 2 Sensor 1)					P0052	C
Catalyst efficiency Bank 1	40				x	
Catalyst System Efficiency Below Threshold (Bank 1)					P0420	C
Catalyst efficiency Bank 2	45				x	
Catalyst System Efficiency Below Threshold (Bank2)					P0430	C
A/C compressor output drive	170		x	x	x	
A/C Refrigerant Pressure Sensor Circuit			P0530			A + air conditioning system must be ON
A/C Refrigerant Pressure Sensor Circuit Low Input				P0532		A + air conditioning system must be ON
A/C Refrigerant Pressure Sensor Circuit High Input					P0533	A + air conditioning system must be ON
Fuel pump output drive	167		x	x	x	
Fuel Pump Secondary Circuit Intermittent			P0233			A

Petrol EMS Fault Codes versus Drive Cycle

Description	CDK	Plausibility	Signal	Minimum	Maximum	Test Drive Cycle to invoke diagnostic
Fuel Pump Secondary Circuit Low				P0231		A
Fuel Pump Secondary Circuit High					P0232	A
Knock control Nulltest	214	x				
Knock Control System Error		P0324				C
Knock control offset	215	x				
Knock Control System Error		P0324				C
Knock control test impulse	216	x				
Knock Control System Error		P0324				C
Knock sensor 1	210			x	x	
Knock Sensor 1 Circuit Low Input				P0327		C
Knock Sensor 1 Circuit High Input					P0328	C
Knock sensor 2	211			x	x	
Knock Sensor 2 Circuit Low Input				P1327		C
Knock Sensor 2 Circuit High Input					P1328	C
Knock sensor 3	212			x	x	
Knock Sensor 3 Circuit Low Input (Bank2)				P0332		C
Knock Sensor 3 Circuit High Input (Bank2)					P0333	C
Knock sensor 4	213			x	x	
Knock Sensor 4 Circuit Low Input (Bank 2)				P1332		C
Knock Sensor 4 Circuit High Input (Bank 2)					P1333	C
Clutch switch fault	104		x			
Clutch Switch Input Circuit Malfunction			P0704			n/a
Lambda sensor ageing post-cat B1	17	x		x	x	
O2 Sensor Circuit Slow Response (Bank 1 Sensor 2)		P0139				C
O2 Sensor Circuit Slow Response (Bank 1 Sensor 2)				P0139		C
O2 Sensor Circuit Slow Response (Bank 1 Sensor 2)					P0139	C
Lambda sensor ageing post-cat B2	23	x		x	x	
O2 Sensor Circuit Slow Response (Bank 2 Sensor 2)		P0159				C
O2 Sensor Circuit Slow Response (Bank 2 Sensor 2)				P0159		C
O2 Sensor Circuit Slow Response (Bank 2 Sensor 2)					P0159	C
Lambda sensor ageing pre-cat B1 (TP)	15			x	x	
O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)				P0133		C
O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)					P0133	C
Lambda sensor ageing pre-cat B2 (TP)	21			x	x	
O2 Sensor Circuit Slow Response (Bank 2 Sensor 1)				P0153		C
O2 Sensor Circuit Slow Response (Bank 2 Sensor 1)					P0153	C
Lambda sensor ageing pre-cat B1 (TV)	16			x	x	
Upstream Fuel Trim Malfunction (Bank 1)				P1170		C
Upstream Fuel Trim Malfunction (Bank 1)					P1170	C
Lambda sensor ageing pre-cat B2 (TV)	22			x	x	
Upstream Fuel Trim Malfunction (Bank 2)				P1173		C
Upstream Fuel Trim Malfunction (Bank 2)					P1173	C
LDP reed-switch	185	x	x	x	x	
Evaporative Emission Control System Pressure Sensor		P0450				n/a
Evaporative Emission Control System Pressure Sensor Low Input				P0452		n/a
Evaporative Emission Control System Pressure Sensor High Input					P0453	n/a
LDP output drive	1		x	x	x	
Leackage Diagnostic Pump intermittent			P1000			n/a
Leackage Diagnostic Pump Low				P1000		n/a
Leackage Diagnostic Pump High					P1000	n/a
Idle control monitor	32			x	x	
Control System RPM Lower Than Expected				P0506		C
Control System RPM Higher Than Expected					P0507	C
Air mass measurement	115			x	x	
Mass or Volume Air Flow Circuit Low Input				P0102		C
Mass or Volume Air Flow Circuit High Input					P0103	C
Lambda sensor voltage post-cat B1	12	x	x	x	x	
O2 Sensor Circuit Malfunktion (Bank 1 Sensor 2)		P0136				C
O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2)			P0140			C
O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2)				P0137		C
O2 Sensor Circuit High Voltage (Bank 1 Sensor 2)					P0138	C
Lambda sensor voltage post-cat B2	20	x	x	x	x	
O2 Sensor Circuit Malfunktion (Bank 2 Sensor 2)		P0156				C
O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 2)			P0160			C
O2 Sensor Circuit Low Voltage (Bank 2 Sensor 2)				P0157		C

Petrol EMS Fault Codes versus Drive Cycle

Description	CDK	Plausibility	Signal	Minimum	Maximum	Test Drive Cycle to invoke diagnostic
O2 Sensor Circuit High Voltage (Bank 2 Sensor 2)					P0158	C
Lambda sensor voltage pre-cat B1	10	x	x	x	x	
O2 Sensor Circuit (Bank 1 Sensor 1)		P0130				C
O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 1)			P0134			C
O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)				P0131		C
O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)					P0132	C
Lambda sensor voltage pre-cat B2	18	x	x	x	x	
O2 Sensor Circuit (Bank 2 Sensor 1)		P0150				C
O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 1)			P0154			C
O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1)				P0151		C
O2 Sensor Circuit High Voltage (Bank 2 Sensor 1)					P0152	C
Swapped lambda sensors (B1 to B2)	3	x				
Swapped lambda sensors (B1 to B2)		P1129				C
Engine cooling fan control	141		x	x	x	
Cooling Fan 1 Control Circuit			P0693			Fan force test via Testbook
Cooling Fan 1 Control Circuit Low				P0691		Fan force test via Testbook
Cooling Fan 1 Control Circuit High					P0692	Fan force test via Testbook
Emissions relevent multiple cylinder misfire	62	x		x	x	
Misfire detected during engine start		P1301				C
Random/Multiple Cylinder Misfire Detected				P0300		C
Calalyst damaging mis-fire					P1300	C
Emissions relevent misfire 1 cylinder 1	50	x		x	x	
Misfire during start cylinder 1		P0301				C
Cylinder 1 Misfire Detected				P0301		C
Catalyst damaging misfire cylinder 1					P0301	C
Emissions relevent misfire 2 cylinder 5	51	x		x	x	
Misfire during start cylinder 5		P0305				C
Cylinder 5 Misfire Detected				P0305		C
Catalyst damaging misfire cylinder 5					P0305	C
Emissions relevent misfire 3 cylinder 4	52	x		x	x	
Misfire during start cylinder 4		P0304				C
Cylinder 4 Misfire Detected				P0304		C
Catalyst damaging misfire cylinder 4					P0304	C
Emissions relevent misfire 4 cylinder 8	53	x		x	x	
Misfire during start cylinder 8		P0308				C
Cylinder 8 Misfire Detected				P0308		C
Catalyst damaging misfire cylinder 8					P0308	C
Emissions relevent misfire 5 cylinder 6	54	x		x	x	
Misfire during start cylinder 6		P0306				C
Cylinder 6 Misfire Detected				P0306		C
Catalyst damaging misfire cylinder 6					P0306	C
Emissions relevent misfire 6 cylinder 3	55	x		x	x	
Misfire during start cylinder 3		P0303				C
Cylinder 3 Misfire Detected				P0303		C
Catalyst damaging misfire cylinder 3					P0303	C
Emissions relevent misfire 7 cylinder 7	56	x		x	x	
Misfire during start cylinder 7		P0307				C
Cylinder 7 Misfire Detected				P0307		C
Catalyst damaging misfire cylinder 7					P0307	C
Emissions relevent misfire 8 cylinder 2	57	x		x	x	
Misfire during start cylinder 2		P0302				C
Cylinder 2 Misfire Detected				P0302		C
Catalyst damaging misfire cylinder 2					P0302	C
Torque threshold level 1	110				x	
Engine Torque control timeout execked					P1626	C
MFL Interface (cruise control switches)	102	x	x	x	x	
Bit fault or "+" and "-" buttons pressed		P1564				A + all cruise control switches must be pressed (On -> "Set+" -> "Set -" -> Off -> Resume -> Off -> Off)
Cruise control multiplex signal (MFL) - signal time-out			P1569			A + all cruise control switches must be pressed (On -> "Set+" -> "Set -" -> Off -> Resume -> Off -> Off)
Message frequency error				P1568		A + all cruise control switches must be pressed (On -> "Set+" -> "Set -" -> Off -> Resume -> Off -> Off)
Cruise control multiplex signal (MFL) - toggle bit error					P1570	A + all cruise control switches must be pressed (On -> "Set+" -> "Set -" -> Off -> Resume -> Off -> Off)
MIL output drive	168		x	x	x	
Mailfunktion Indicator Lamp (MIL) Control Circuit			P0650			n/a
MIL Signal Low				P0650		n/a
MIL Signal High					P0650	n/a
Crankshaft Position Sensor A Circuit	111		x			

Petrol EMS Fault Codes versus Drive Cycle

Description	CDK	Plausibility	Signal	Minimum	Maximum	Test Drive Cycle to invoke diagnostic
Crankshaft Position Sensor A Circuit			P0335			A
Camshaft control Bank 1	33	x	x	x		
"A" Camshaft Position - Timing Over-Retarded (Bank 1)		P0012				C
"A" Camshaft Position Actuator Circuit (Bank 1)			P0010			C
"A" Camshaft Position - Timing Over-Advanced or System Performance (Bank 1)				P0011		C
Camshaft control Bank 2	34	x	x	x		
"A" Camshaft Position - Timing Over-Retarded (Bank 2)		P0022				C
"A" Camshaft Position Actuator Circuit (Bank 2)			P0020			C
"A" Camshaft Position - Timing Over-Advanced or System Performance (Bank 2)				P0021		C
VANOS 1 output drive	165		x	x	x	
"A" Camshaft Position Actuator Circuit 1			P1525			A
"A" Camshaft Position Actuator Circuit 1 Signal Low				P1523		A
"A" Camshaft Position Actuator Circuit 1 Signal High					P1524	A
VANOS 2 output drive	166		x	x	x	
"A" Camshaft Position Actuator Circuit 2			P1526			A
"A" Camshaft Position Actuator Circuit 1 Signal Low				P1527		A
"A" Camshaft Position Actuator Circuit 1 Signal High					P1528	A
Camshaft position sensor bank 1	113	x		x	x	
Camshaft Position Sensor "A" Circuit		P0340				A
Camshaft Position Sensor "A" Circuit Low Input (Bank 1 or Single Sensor)				P0342		A
Camshaft Position Sensor "A" Circuit High Input (Bank 1 or Single Sensor)					P0343	A
Camshaft position sensor bank 2	114	x		x	x	
Camshaft Position Sensor "A" Circuit		P0345				A
Camshaft Position Sensor "A" Circuit Low Input (Bank 2)				P0347		A
Camshaft Position Sensor "A" Circuit High Input (Bank 2)					P0348	A
Lambda control adaption over time Bank 1	28			x	x	
to small				P1172		C
to large					P1171	C
Lambda control adaption over time Bank 2	29			x	x	
to small				P1175		C
to large					P1174	C
Lambda control adaption per ignition Bank 1	30			x	x	
to small				P1161		C
to large					P1162	C
Lambda control adaption per ignition Bank 2	31			x	x	
to small				P1163		C
to large					P1164	C
Secondary air pump output drive	84		x	x	x	
Secondary Air System Relay "A" Circuit			P0418			SAI Force Test via Testbook
Secondary Air Injection Pump Signal Low				P1413		SAI Force Test via Testbook
Secondary Air Injection Pump Signal High					P1414	SAI Force Test via Testbook
Secondary air system Bank 1	80			x		
Secondary Air Injection System (Bank 1)				P0491		SAI Force Test via Testbook
Secondary air system Bank 2	81			x		
Secondary Air Injection System (Bank 2)				P0492		SAI Force Test via Testbook
Secondary air valve	82				x	
Scondary Air Injection System Incorrect Flow Detected					P0411	SAI Force Test via Testbook
Secondary air valve output drive	85		x	x	x	
Secondary Air Injection System Switching Vave "A" Circuit			P0412			SAI Force Test via Testbook
Secondary Air Injection System Switching Vave "A" Circuit Shorted				P0414		SAI Force Test via Testbook
Secondary Air Injection System Switching Vave "A" Circuit Open					P0413	SAI Force Test via Testbook
Comfort start Starter Request Circuit	237	P0512	P0512	P0512	P0512	A
Comfort start output drive	233		x	x	x	
Starter Relay Circuit			P0615			A
Starter Relay Circuit Low				P0616		A
Starter Relay Circuit High					P0617	A
Comfort start input	234		x			
Engine start (crank) signal error - request while engine running			P1620			A
Rough road detection	121		x		x	
Vehicle Speed Sensor Intermittent/Erratic/High			P0503			A
Vehicle Speed Sensor Range/Performance					P0501	C
Inlet air temperature sensor	124			x	x	
Intake Air Temperature Circuit Low Input				P0112		B
Intake Air Temperature Circuit High Input					P0113	B

Petrol EMS Fault Codes versus Drive Cycle

Description	CDK	Plausibility	Signal	Minimum	Maximum	Test Drive Cycle to invoke diagnostic
Fuel tank breathing functional check	93			x		
Evaporative Emission Control System				P0440		C
LDP clamped tube	184	x				
Evaporative Emission Control System Incorrect Purge Flow		P0441				C
LDP small leak	182					n/a
LDP leak detection	183			x	x	
Evaporative Emission Control System Leak Detected (small leak)				P0442		n/a
Evaporative Emission Control System Leak Detected (gross leak)					P0455	n/a
Purge valve output drive	98		x	x	x	
Evaporative Emission Control System Purge Control Valve Circuit			P0443			C
Evaporative Emission Control System Purge Control Valve Circuit Shorted				P0445		C
Evaporative Emission Control System Purge Control Valve Circuit Open					P0444	C
Stuck thermostat	139	x				
Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature		P0128				D
Radiator outlet coolant temperature	125			x	x	
Temperature Sensor radiator outlet Signal Low				P1117		D
Temperature Sensor radiator outlet Signal High					P1118	D
Engine coolant temperature	123	x	x	x	x	
Engine Coolant Temperature Circuit Range/Performance Problem		P0116				D
Insufficient coolant temp for closed loop control			P0125			D
Engine Coolant Temperature Circuit Low Input				P0117		D
Engine Coolant Temperature Circuit High Input					P0118	D
Vehicle Ambient Temperature	122	x				
Engine control module - ambient temperature fault data received		P1114				A
ECU Internal Temperature	35				x	
ECU Temperature High					P0634	C
5V reference voltage error	229			x		
Engine control module - internal reference voltage error				P1619		A
Battery voltage monitor	109	x		x	x	
System Voltage Unstable		P0561				A
System Voltage Low				P0562		A
System Voltage High					P0563	A
Safety monitoring concept level 2	101	x				
ECU self test, torque monitor		P1659				C
Safety monitoring concept, limp home monitoring	103	x				
ECU self test, limp home monitor error		P1660				C
Safety monitoring concept RAM test	105	x				
Internal Control Module Random Access Memory (RAM) Error		P0604				A
Safety monitoring concept ROM test	107	x				
Internal Control Module Read Only Memory (ROM) Error		P0605				A
Safety monitoring concept, reset	108	x				
ECM/PCM Processor		P0606				C
Vehicle speed sensor	120		x			
Vehicle Speed Sensor			P0500			C
EWS storage	204		x	x		
EWS exchange code in EEPROM failure			P1623			A
EEPROM read/write failure				P1624		A
EWS-Code	39	x	x	x	x	
WC (exchange code) input false manipulation		P1672				A
Engine anti-theft signal - false manipulation of EWS code by tester interface			P1694			A
No start code programmed				P1673		A
Engine anti-theft signal - EWS start code corrupted					P1693	A

Personalisation Checklist

NEW RANGE ROVER

Customer: _____

Vehicle VIN / Registration No.: _____

SIGN WHEN PERSONALISATION COMPLETED

Technician Signature: _____

Date: _____

HOW TO USE THIS FORM

Select the most suitable option for each feature in the sections below. For guidance, the recommended options are denoted by the ® symbol.

NOTE: Performing personalisation will result in the loss of trip computer data and will require the clock and radio presets to be reset.

Wiper Options

	Active	Inactive	
Wiper Speed Stepdown	®		Specify whether wiper speed steps down when vehicle stationary.

Not applicable to vehicles fitted with rain sensor.

Locking options

	Tick required key(s)		
Single Point Entry	Key 1	®	Specify by key whether single point entry is required. Single Point Entry unlocks the driver's door on the first press of the remote handset unlock button, and all other doors on the second press.
	Key 2	®	
	Key 3	®	
	Key 4	®	
Speed Related Locking	Key 1	®	Specify by key whether speed related locking is required. This feature locks the doors when the vehicle exceeds 10mph (16km/h).
	Key 2	®	
	Key 3	®	
	Key 4	®	

	Active	Inactive	
Speed Locking Repeat	®		Specify whether speed related locking operates more than once during an ignition cycle.
Automatic Relock	®		Specify whether vehicle relocks after two minutes if unlocked via remote handset and no doors are opened.
Panic Alarm	®		Specify whether panic alarm operates via remote handset tailgate unlock button.
Key-in Warning	®		Specify whether key-in warning tone sounds when key left in ignition and driver's door opened.

Ventilation Options

	Active	Inactive	
Lazy Lock from door key		®	Specify whether global window / sunroof closing via key is required
Lazy Lock from remote	®		Specify whether global window / sunroof closing via remote handset is required. **Not applicable to North America / Canada.**
Lazy Unlock from door key		®	Specify whether global window / sunroof opening via key is required
Lazy Unlock from remote	®		Specify whether global window / sunroof opening via remote handset is required

Lighting Options

Follow Me Home Delay

		Tick ONE box only	
On		40 sec	®
Off		90 sec	
		150 sec	
		240 sec	

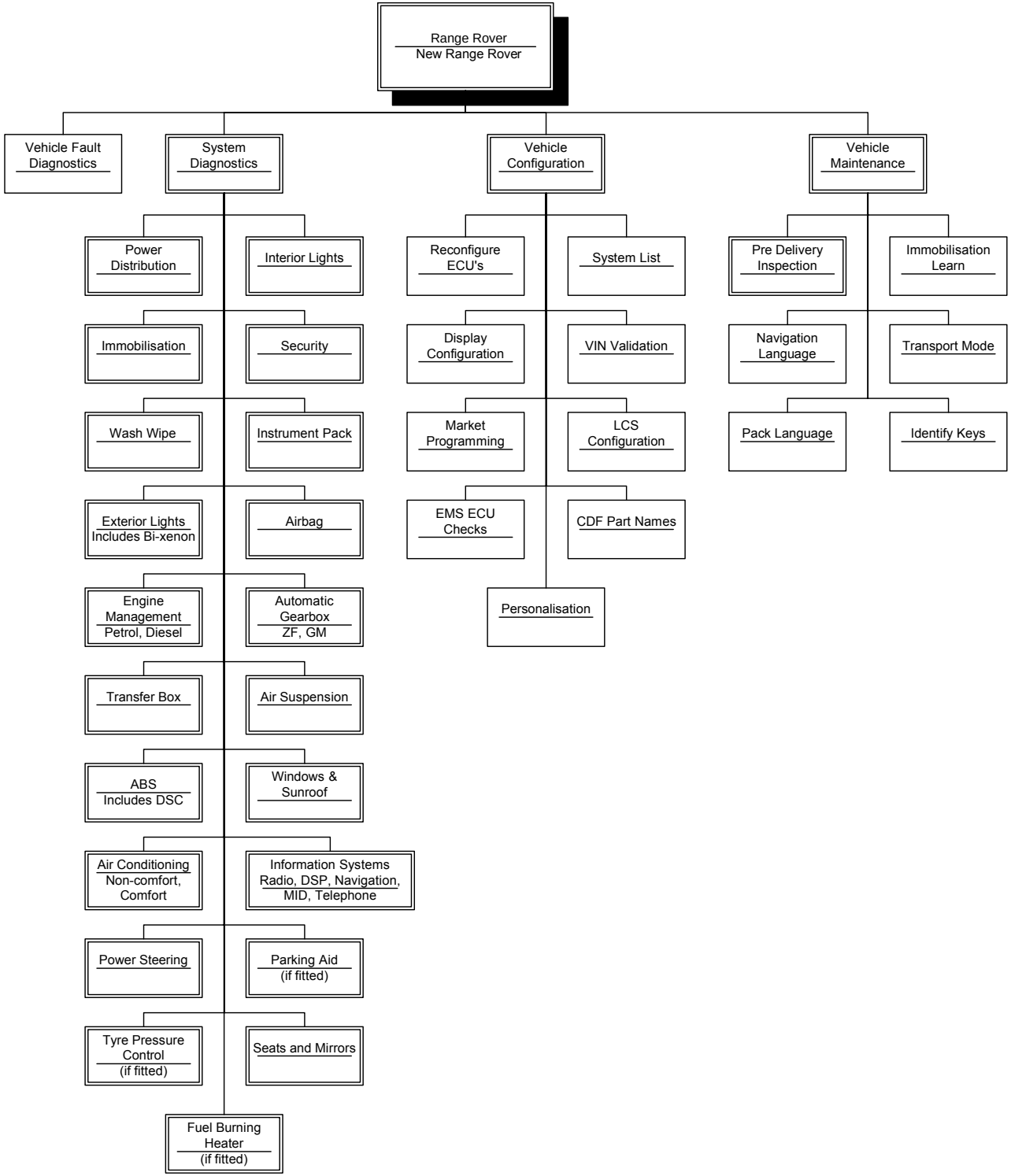
Specify delay timer for Follow Me Home lights. This feature is activated by turning ignition off before headlights are turned off.

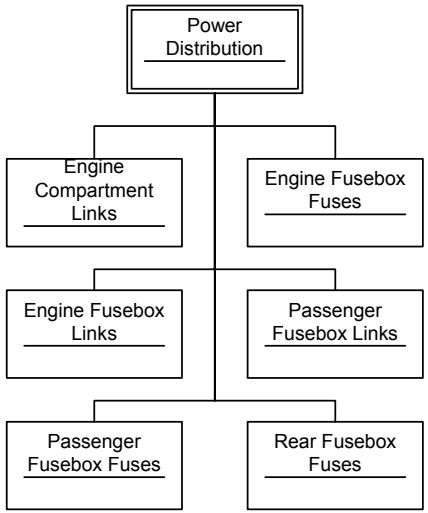
	Active	Inactive	
Daytime Running Lights		®	Select whether Daytime Running Lights operate. In markets where Daytime Running Lights are a mandatory requirement they cannot be deselected.
Multi Function Display (BordComputer)		®	Specify whether Multi-Function Display operates when door opened / key placed in ignition.

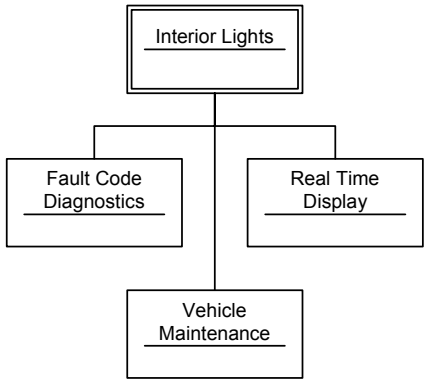
Warning Options

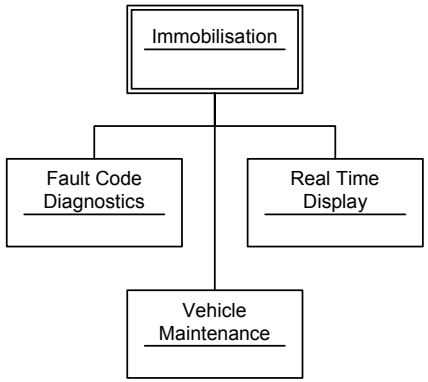
	Active	Inactive	
External temperature	®		Specify whether low ambient temperature (frost) warning sounds.
PDC Audible Warning	®		Specify whether Park Distance Control audible warning sounds briefly when reverse gear selected.

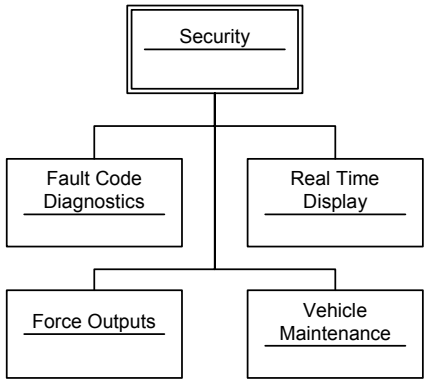
	Circle Required Level	
PDC Rear Volume Level	1 2 3 4 5 6 ®	Select volume level: 1-Quiet - 6-Loud

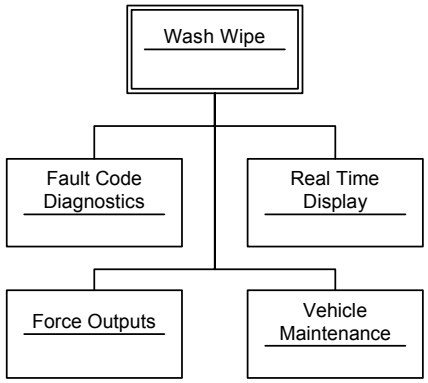

Range Rover
New Range Rover
Vehicle Fault Diagnostics
System Diagnostics
Vehicle Configuration
Vehicle Maintenance
Power Distribution
Interior Lights
Reconfigure ECU's
System List
Pre Delivery Inspection
Immobilisation Learn
Immobilisation
Security
Display Configuration
VIN Validation
Navigation Language
Transport Mode
Wash Wipe
Instrument Pack
Market Programming
LCS Configuration
Pack Language
Identify Keys
Exterior Lights Includes Bi-xenon
Airbag
EMS ECU Checks
CDF Part Names
Engine Management Petrol, Diesel
Automatic Gearbox ZF, GM
Personalisation
Transfer Box
Air Suspension
ABS Includes DSC
Windows & Sunroof
Air Conditioning Non-comfort, Comfort
Information Systems Radio, DSP, Navigation, MID, Telephone
Power Steering
Parking Aid (if fitted)
Tyre Pressure Control (if fitted)
Seats and Mirrors
Fuel Burning Heater (if fitted)

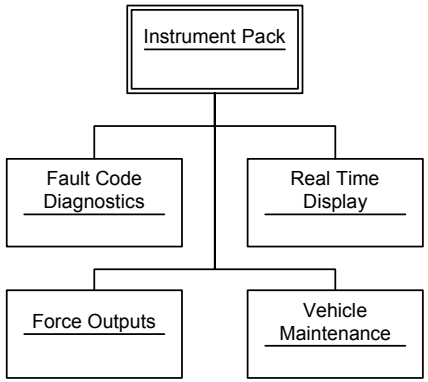

Power Distribution
Engine Compartment Links
Engine Fusebox Fuses
Engine Fusebox Links
Passenger Fusebox Links
Passenger Fusebox Fuses
Rear Fusebox Fuses

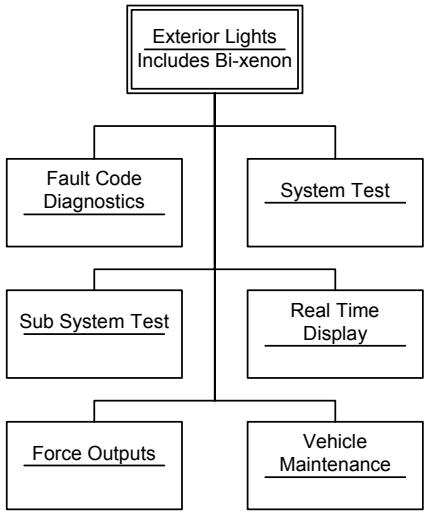

Interior Lights
Fault Code Diagnostics
Real Time Display
Vehicle Maintenance

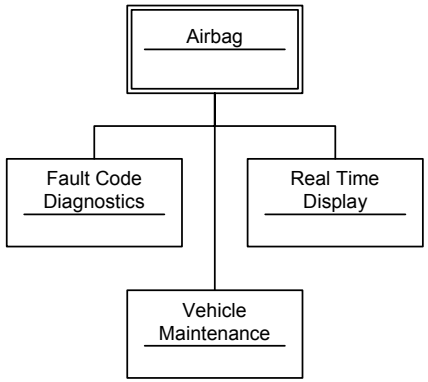

Immobilisation
Fault Code Diagnostics
Real Time Display
Vehicle Maintenance

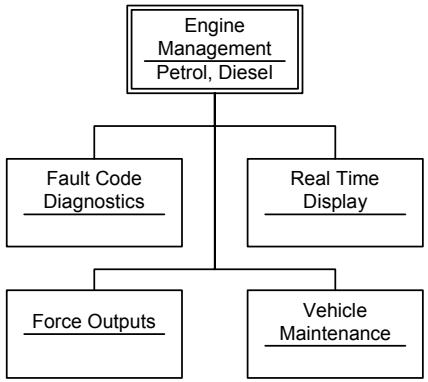

Security
Fault Code Diagnostics
Real Time Display
Force Outputs
Vehicle Maintenance

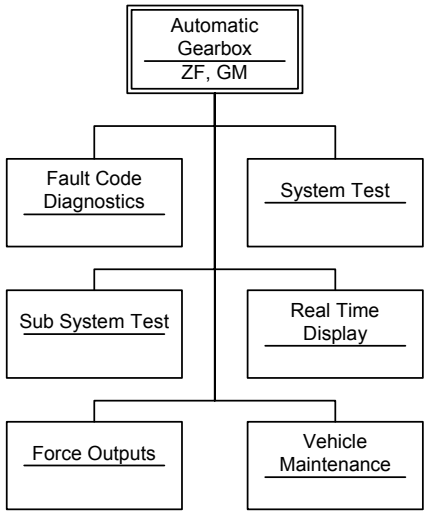

Wash Wipe
Fault Code Diagnostics
Real Time Display
Force Outputs
Vehicle Maintenance

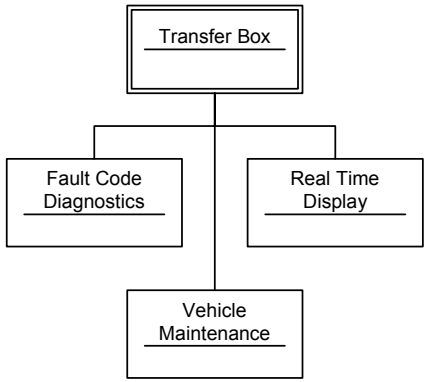

Instrument Pack
Fault Code Diagnostics
Real Time Display
Force Outputs
Vehicle Maintenance

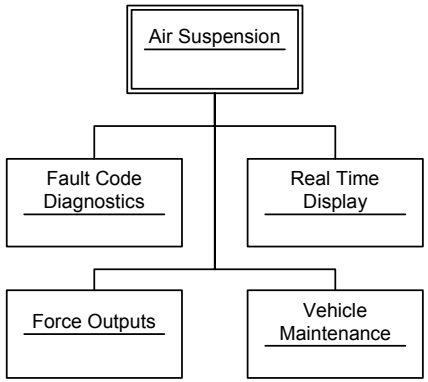

Exterior Lights
Includes Bi-xenon
Fault Code
Diagnostics
System Test
Sub System Test
Real Time
Display
Force Outputs
Vehicle
Maintenance

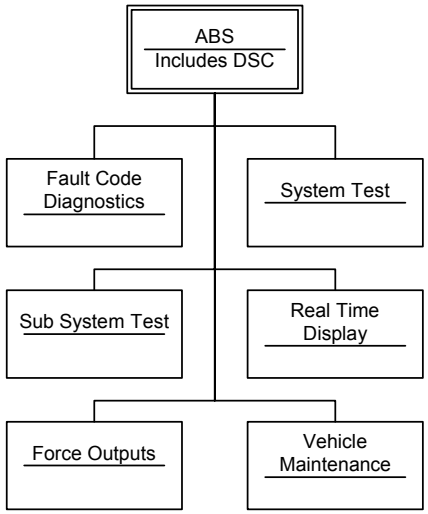

Airbag
Fault Code Diagnostics
Real Time Display
Vehicle Maintenance

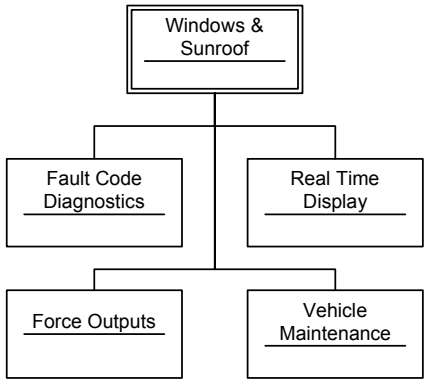

Engine
Management
Petrol, Diesel
Fault Code
Diagnostics
Real Time
Display
Force Outputs
Vehicle
Maintenance

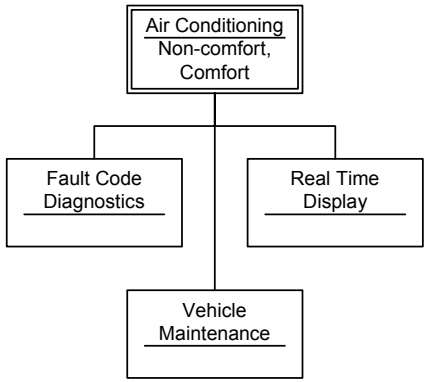

Automatic
Gearbox
ZF, GM
Fault Code
Diagnostics
System Test
Sub System Test
Real Time
Display
Force Outputs
Vehicle
Maintenance

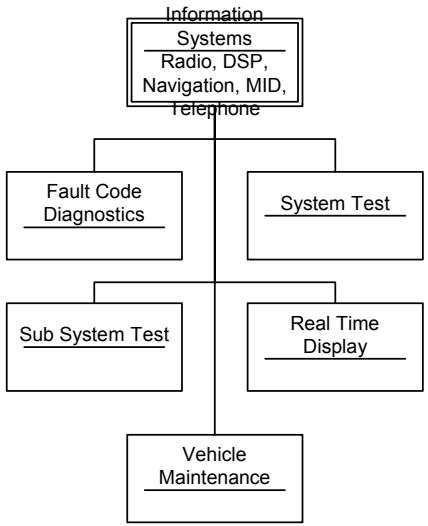

Transfer Box
Fault Code Diagnostics
Real Time Display
Vehicle Maintenance

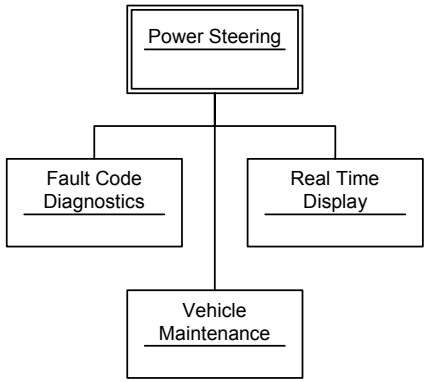

Air Suspension
Fault Code Diagnostics
Real Time Display
Force Outputs
Vehicle Maintenance

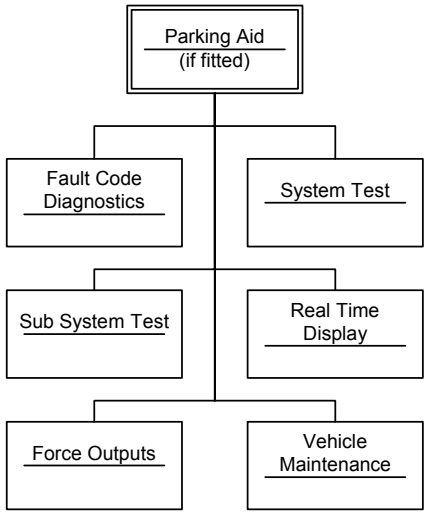

ABS
Includes DSC
Fault Code
Diagnostics
System Test
Sub System Test
Real Time
Display
Force Outputs
Vehicle
Maintenance

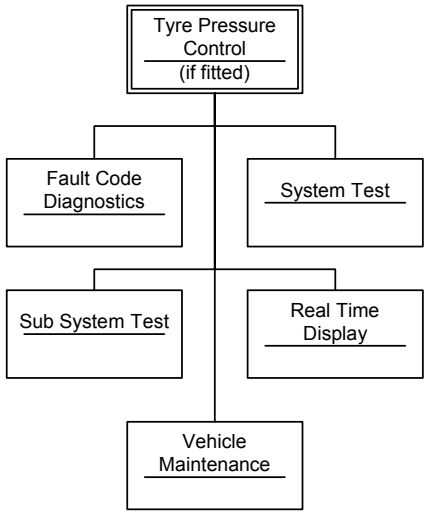

Windows &
Sunroof
Fault Code
Diagnostics
Real Time
Display
Force Outputs
Vehicle
Maintenance

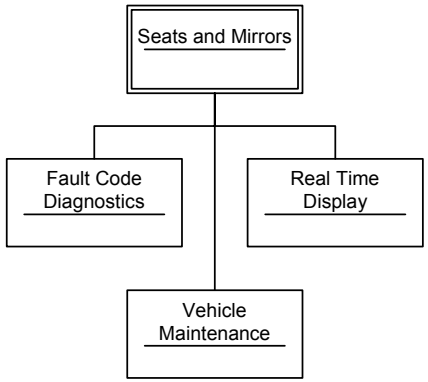

Air Conditioning
Non-comfort,
Comfort
Fault Code
Diagnostics
Real Time
Display
Vehicle
Maintenance

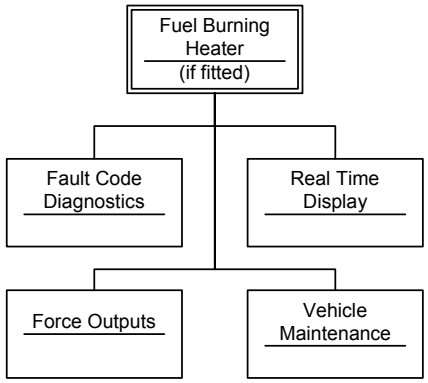

Information Systems
Radio, DSP, Navigation, MID, Telephone
Fault Code Diagnostics
System Test
Sub System Test
Real Time Display
Vehicle Maintenance

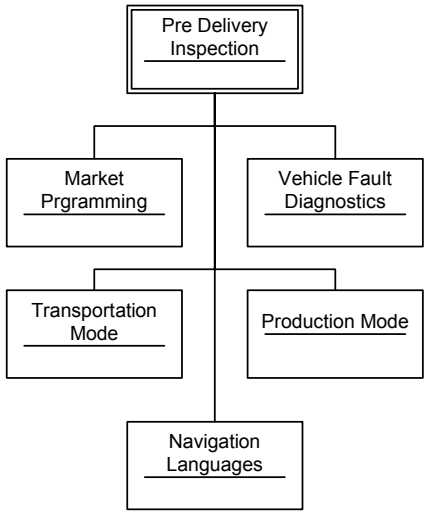

Power Steering
Fault Code Diagnostics
Real Time Display
Vehicle Maintenance


Parking Aid
(if fitted)
Fault Code
Diagnostics
System Test
Sub System Test
Real Time
Display
Force Outputs
Vehicle
Maintenance


Tyre Pressure Control
(if fitted)
Fault Code Diagnostics
System Test
Sub System Test
Real Time Display
Vehicle Maintenance


Seats and Mirrors
Fault Code Diagnostics
Real Time Display
Vehicle Maintenance


Fuel Burning Heater
(if fitted)
Fault Code Diagnostics
Real Time Display
Force Outputs
Vehicle Maintenance


Pre Delivery Inspection
Market Prgramming
Vehicle Fault Diagnostics
Transportation Mode
Production Mode
Navigation Languages