

HawkEye Pro

User Manual



Bearmach HawkEye Pro

User Manual

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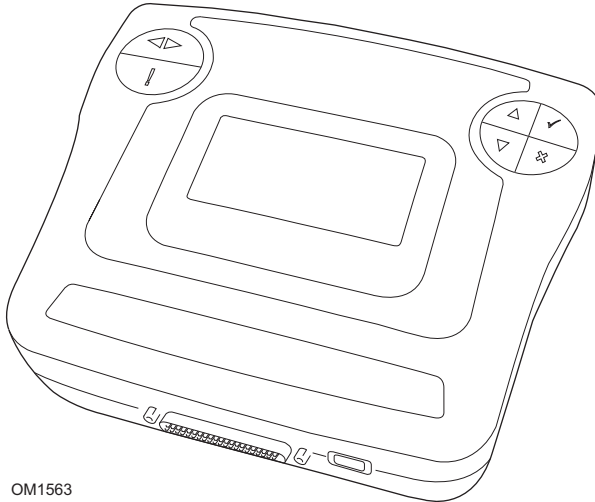
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Overview

Nearly every new road vehicle, and many older vehicles, have multiple control modules that monitor and control different aspects of the vehicle (e.g. Engine, Transmission, Body, Suspension). The HawkEye Pro service tool has been specifically designed to connect to, and communicate with, a number of these control modules and allow the user to extract information (e.g. Diagnostic Trouble Codes) which may aid in the diagnosis of system problems.



OM1563

The vehicle coverage available on the HawkEye Pro service tool is as follows.

Available vehicle coverage.

- Defender
- Defender (L326)
- Freelander 1
- Freelander 2 (L359)
- Discovery I
- Discovery 2
- Discovery 3
- Discovery 4
- Range Rover Classic
- Range Rover (P38a)
- Range Rover (L322)
- Range Rover Sport (L320)

Introduction

Getting Started

Connect the EOBD cable (BA5083) to the HawkEye Pro service tool and the vehicle's diagnostic connector. Once connected, the current software version number is displayed.

Unlocking New Manufacturers

A new or updated HawkEye Pro service tool requires a security key to unlock the Land Rover application and any other specific vehicle manufacturer. To register the HawkEye Pro service tool, email technical.support@omitec.com including the serial number of the unit, extra Vehicle Manufacturer required and contact details.

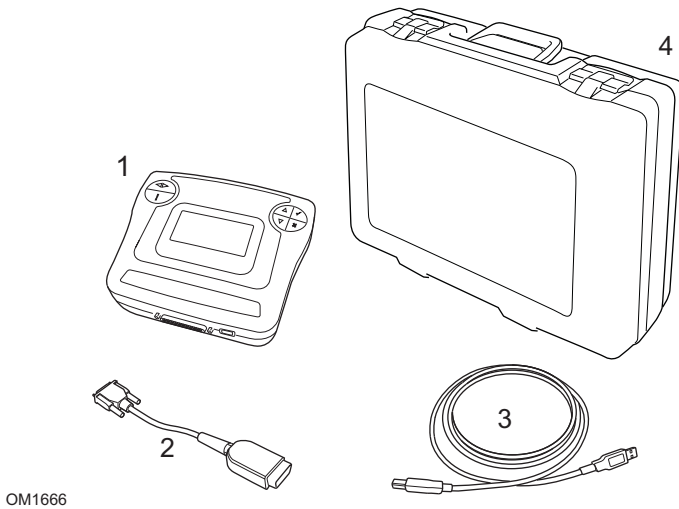
After obtaining your security key, follow this procedure to unlock the service tool.

1. Select 'User Menu' from the main menu.
2. Select 'Security' from the user menu.
3. Select 'Enter Security Key' from the security menu.
4. Using the ▲ and ▼ keys, scroll through the alpha/numeric character list.
5. Confirm each character by pressing the ✓ key.
If you make a mistake use the ◀▶ key and enter the correct character. To re-enter the code from the beginning, press the ✕ key.
6. When prompted to verify the security key, press ✓ to confirm.
7. Power down the HawkEye Pro service tool by disconnecting the USB cable from the tool.
8. Reconnect the USB cable to restart the HawkEye Pro service tool. The screen should now show a list of the applications included.

Additional Vehicle Manufacturers

To add vehicle manufacturers to the HawkEye Pro service tool, contact your local supplier.

Kit Contents



OM1666

HawkEye Pro kit

1. HawkEye Pro service tool
2. J1962 cable (BA5083)
3. USB cable
4. Carry case
5. Quick reference guide (not shown)

Introduction

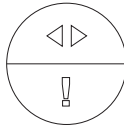
Display Screen

The HawkEye Pro service tool screen is a backlit LCD capable of displaying four rows of text containing up to twenty characters.



Keypads

The HawkEye Pro is operated via the two keypads.

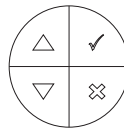
Left-hand keypad







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Key	Function
	Scrolls left and right.
	Provides context sensitive help (where available).

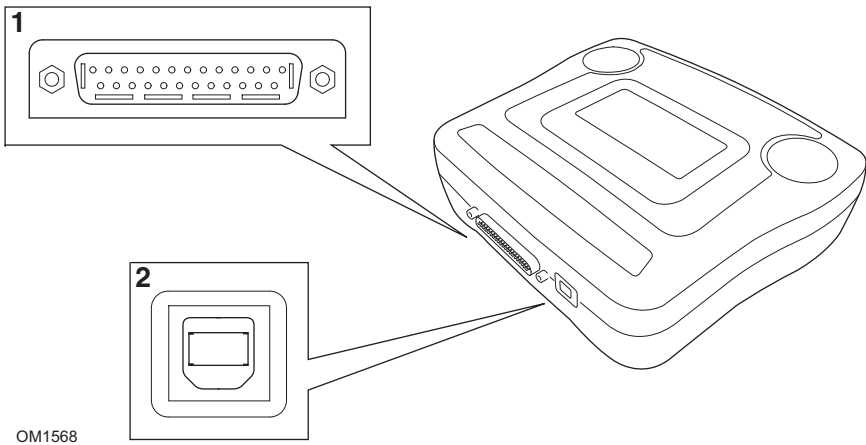
Right-hand keypad



OM1570

Key	Function
	Scrolls up within a menu or text.
	Scrolls down within a menu or text.
	Selects a menu option, Continue or Yes.
	Exits a menu or No.

Connection

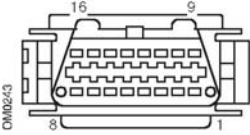
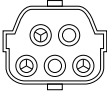


The HawkEye Pro service tool has a 25-way connector through which it can communicate to the vehicle via various interface cables. Connection to the specific system is via either the vehicle's EOBD (J1962) diagnostic socket or by a system specific connector. Refer to the 'Vehicle Application List' to determine the correct cable.

When connecting the cable to the HawkEye Pro service tool, always secure the cable with the fixing screws to prevent accidental disconnection during use.

Introduction

Diagnostic Connector Location

Connector	Connector Location	Connector Face View
J1962	In the driver / passenger footwell on: Defender (L316) Freelander Discovery I, 2, 3 and 4 Range Rover (P38a) Range Rover (L322) Range Rover Sport (L320)	
	Under the driver / passenger seat on: Defender	
14CUX	Behind the driver side kick panel on: Discovery I (V8)	
	Under driver / passenger seat on: Range Rover Classic	

Troubleshooting

If communications cannot be established with the vehicle, follow the procedure below.

1. Check the correct system was selected from the menu.
2. Check the correct cable was used against the application list.
3. Disconnect both ends of the cable and ensure that no pins are bent or snapped.
4. Reset the control module on the vehicle by turning the ignition OFF and ON, reconnect the service tool and try again.

If communications still cannot be established, contact the Product Support Team for further assistance.

Safety Precautions

The following guidelines are intended to ensure the safety of the operator whilst preventing damage to the electrical and electronic components fitted to the vehicle.

Equipment - prior to commencing any test procedure on the vehicle, ensure that the HawkEye Pro service tool, its harnesses and connectors are in good condition.

Polarity - always observe the correct polarity when connecting the HawkEye Pro service tool to the vehicle battery

Before carrying out testing on a vehicle, the following procedure should always be observed.

- Check the handbrake/parking brake is on.
- Check that neutral or park is selected.
- Keep test equipment and harnesses away from HT leads.
- Be aware of moving parts.
- Do not run engine in a confined space without adequate ventilation.

HawkEye Pro Menus

User Menu

User Menu	
1.	OBD DTC Lookup
2.	Language Menu
3.	Tester Setup
4.	Self Test
5.	Software Version
6.	Security
7.	CAN converter
8.	iMux Harness

Use the ▲ and ▼ keys to select the required function and press ✓ to confirm the selection.

For more information, see 'HawkEye Pro Menu Structure', page 29.

Note: Press ✕ to return to the main menu.

DTC Lookup

This option is used to look up a DTC description.

Looking up a known DTC

1. Use the ◀▶ and ? keys to move the cursor under the required DTC character, then using the ▲ and ▼ keys, change the characters as required.
2. Press the ✓ key to confirm the DTC.
3. Press ✕ to return to the user menu.

If the unit recognises the DTC, the screen will display the full description (for example, P0100 - Mass or Volume Air Flow 'A' Circuit).

Where more than one description is available, a separate menu will appear for you to select the appropriate option.

If a code is not recognised, the message 'No Text Allocated for this Code' is displayed.

Language Menu

The language menu allows changing of the software language, if available.

Selecting an alternative language

1. Use the ▲ and ▼ keys to select the required language.
2. Press the ✓ key to confirm the selection.

Note: This menu is only enabled when more than one language is installed on the HawkEye service tool. If no additional languages are installed, the message 'Not Enabled' will be displayed and the display will return to the User Menu.

Self Test Menu

SELF TEST MENU	
1.	Full Self Test
2.	Flash Test
3.	Memory Test
4.	IIC Memory Test
5.	Vehicle Com Test
6.	PWM J1850 Test
7.	CAN Commis Test
8.	Key Pad Test
9.	Display Test
10.	Display All Clear

Selecting a test

1. Use the ▲ and ▼ keys to select the required test.
2. Press ✓ to confirm the selection.
3. Follow the on-screen instructions to carry out the specified test.
4. Press the ✓ or ✕ key to return to the Self Test menu.

HawkEye Pro Menus

Software Version Menu

This menu displays the HawkEye Pro service tool software version number before displaying a list of all software modules currently loaded onto the service tool, including their version numbers.

Checking the software version

1. Use the ▲ and ▼ keys to scroll through the software module list.
2. Press the ✓ or ✕ key to return to the Self Test menu.

Security Menu

All of the applications on the HawkEye Pro service tool are 'locked' by a security key. To unlock a particular application, the appropriate security key must be obtained from the Product Support team and entered into the HawkEye Pro service tool. If the expected applications are not displayed in the User Menu it could be that the security key has not been entered or that it has been entered incorrectly.

To examine or enter a security key, enter the 'Security' option. The following menu will be displayed.

```
                SECURITY
1.   Show SecurityKey
2.   Enter SecurityKey
3.   Unit Serial No.
```

Show SecurityKey

This option displays the SecurityKey on-screen.

1. Select 'Show SecurityKey' from the Security menu and press the ✓ key.
2. Press the ✓ or ✕ key to return to the Security menu.

If the security key is incorrect, 'Key is Invalid' will be displayed. Press the ? key for further information.

Enter SecurityKey

This option is used to enter the security key to unlock the functions on the HawkEye Pro service tool.

1. Select 'Enter SecurityKey' from the Security menu and press the ✓ key.
2. Using the ▲ and ▼ keys, scroll through the alpha / numeric character list.
3. Confirm each character by pressing the ✓ key.
In the event of a mistake, use the ◀▶ key and enter the correct character. To re-enter the code from the beginning, press the ✕ key.
4. When prompted to verify the security key, press the ✓ key.
5. Restart the HawkEye Pro service tool either by disconnecting and then reconnecting the power supply, or by holding down the ✓, ✕, ▲ and ▼ keys simultaneously.

Note: Pressing the ? key at any point will display the on-screen instructions.

Note: The ✕ key can be pressed at any point to cancel input of the security key. The original security key will be retained by the HawkEye Pro service tool.

Unit Serial No.

This option displays the serial number of the HawkEye Pro service tool on-screen.

The unit serial number will match the number on the back of the unit and should be quoted when calling Product Support to ensure efficient resolution of any technical issues. This number cannot be changed.

1. Select the 'Unit Serial No.' option from the Security menu and press the ✓ key.
2. Once the unit serial number has been noted, press the ✕ key to return to the Security menu.

HawkEye Pro Menus

iMUX Harness (Firmware update)

The iMux harness option allows you to check and update the firmware.



Get FW Version / Boot Mode

1. Select the 'Get FW Version' item to display the current version of the firmware within the Multiplex system.
2. Press **x** to return to the User Menu.
3. Press **✓** to return to continue to put the Multiplex system into boot mode ready to be updated. Follow the on screen instructions. The Multiplex system must be reprogrammed once the message to re-power the cable has been displayed. Disconnect the EOBD cable from the power and then reconnect. Now reprogram by selecting the 'Update FW version' option in the Multiplex menu.

Update Firmware

This process should only be performed after the Multiplex system has been placed into boot mode.

1. Select the 'Update FW Version' item the Multiplex system will now be updated.
2. A message will be displayed to show the firmware has been updated. Press **✓** to continue the update process

Note: The update process must be allowed to fully complete once started and the power must not be interrupted during the update process.

Anti-Lock Braking System (ABS)

- Land Rover vehicles

Longitudinal Acceleration Sensor Calibration

This routine is necessary in the following situations.

- The Longitudinal Acceleration Sensor has been replaced.
- The ABS / TC / ESP control module has been replaced.
- The ESP system is not behaving properly as it should. Resetting of this sensor can sometimes cure erroneous ESP behaviour.

Airbag

- Land Rover Freelander 2 (L359) (2007-)

Restraints Build Mode Entry / Exit

This function is used to place the Airbag / Restraint System in a 'build mode', to facilitate safe maintenance and repairs to be performed without risk of detonation of airbags or pretensioners. When work has been completed on the system, the Airbag / Restraints system must be taken out of 'build mode' to restore normal operation.

Crash Reset

This option is necessary on vehicles where airbags have been deployed following a crash. The routine clears the crash 'flag' in the Body Control Module to enable normal operation after repair of the vehicle and installation of a new airbag.

Land Rover Systems

Air Suspension System (Ride Level Module - RLM)

- **Discovery 3 (2005 - 2009)**
- **Range Rover Sport (L320) (2005 - 2009)**
- **Range Rover (L322) (2006 - 2009)**

There are several functions available via the HawkEye Pro service tool.

- Set Operating Mode.
- Set Tolerance Control Mode.
- Deflation Routines.

Set Operating Mode

This procedure is used to set the RLM to different modes. Modes can be set under the 'Configuration' option of the HawkEye Pro service tool. The current operating mode can be displayed under the 'Live Data' option of the HawkEye Pro service tool.

Pre-test conditions

- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.

Normal Mode

This is the normal operating mode for the RLM.

Manufacturing Mode

This mode is mainly used in the factory when assembling the vehicle. It can, however, also be used if the owner of the vehicle wishes to fit coil springs instead of the air springs. Placing the control module in this mode ensures that the control module continues to function in terms of processing information such as height information. This process will render the Air Suspension controls and instruments non-functional.

Note: If the vehicle is driven in any mode other than Normal Mode, the Air Suspension will NOT operate correctly.

Set Tolerance Control

This procedure is used to set the RLM tolerance control. Tolerance control can be set under the 'Configuration' option of the HawkEye Pro service tool. The current tolerance control state can be displayed under the 'Live Data' option of the HawkEye Pro service tool.

Pre-test conditions

- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.

Normal Tolerances

This state is the normal operating mode for the Air Suspension system.

Tighter Tolerances

This state is used when another part of the vehicle is being aligned or calibrated. The two main instances where this state is used are:

- Wheel alignment;
- Adaptive Headlamp calibration.

Deflation Routines

There are several routines available for this system.

- Deflate air springs
- Deflate reservoir
- Deflate all (air springs and reservoir)
- Exit deflate mode.

These routines are to be used when work must be carried out on the air suspension system; this will reduce the risk of personal injury caused by compressed air.

Pre-test conditions:

- The ignition must be ON;
- An approved battery charger must be connected to ensure consistent power supply.



Caution: The vehicle will lower during deflation of the air suspension. To avoid damage, ensure all doors are closed.



Warning: It is the responsibility of the technician to ensure that air has been fully expelled from the air suspension system even if the HawkEye Pro service tool indicates that the routine has completed successfully. The procedure may need to be run more than once to ensure all air is expelled from the system. Failure to do so may result in personal injury.

Exit Deflate Mode

After the work has been completed the technician **must** re-enable the system using the 'Exit Deflate Mode' option to restore normal operation of the air suspension system.

Land Rover Systems

Air Suspension System (EHC2)

- **Range Rover (L322) (2002 - 2006)**

There are four functions available via the HawkEye Pro service tool for the EHC2 air suspension system.

- Actuators
- Set Operating Mode
- Set Tolerance Control Mode
- Deflation Routines

Actuators

There are a number of actuators available on the HawkEye Pro service tool. These are split into two different sections.

Level Selection

The HawkEye Pro service tool can be used to force the air suspension system to any level as an alternative to using the ride height switch inside the vehicle.

- Access Level.
- Motorway Level.
- Standard Level.
- Off-road Level.

These are useful for the diagnosis of faults with the ride height switch and wiring.

Pre-test conditions:

- The engine must be RUNNING.

Drive Outputs

The following outputs can be driven individually using the HawkEye Pro service tool.

- Front right valve
- Front left valve
- Rear right valve
- Rear left valve
- Exhaust valve
- Reservoir valve
- Compressor valve
- High-pressure exhaust valve
- Front cross-link valve
- Rear cross-link valve
- Access LED
- Motorway LED

- Standard LED
- Off-road LED
- Hold LED

Pre-test conditions

- The ignition must be ON and the engine OFF.

Set Operating Mode

There are four functions available via the HawkEye Pro service tool for the EHC2 system.

- Transport mode
- Low Tolerance Mode (used during wheel alignment or headlamp levelling)
- Production Mode (used to disable all control circuits within the system)
- Normal Mode (to cancel all of the above).

These procedures are used to set the control module to different modes. Modes can be set under the 'Service Functions' option of the HawkEye Pro service tool. The current operating mode can be displayed under the 'Live Data' option of the HawkEye Pro service tool.

Pre-test conditions

- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.

Note: If the vehicle is driven in any mode other than 'Normal Mode', the air suspension will not operate correctly.

Land Rover Systems

Deflation Routines

There are seven routines available for this system.

- Deflate right front
- Deflate left front
- Deflate right rear
- Deflate left rear
- Deflate front
- Deflate rear
- Deflate all

These routines for use prior to servicing the air suspension system to reduce the risk of injury by compressed air.

Pre-test conditions

- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.



Caution: The vehicle will lower during deflation of the air suspension. To avoid damage, ensure all doors are closed.



Warning: It is the responsibility of the technician to ensure that air has been fully expelled from the air suspension system even if the HawkEye Pro service tool indicates that the routine has completed successfully. The procedure may need to be run more than once to ensure all air is expelled from the system. Failure to do so may result in personal injury.

Inflation

When work has been completed on the specified area the air suspension can be re-inflated either by selecting the corresponding 'Inflation' routine or by starting the engine. When the engine is running, the system will inflate the four corners to the correct height for the currently selected level.

Inflation Routines

There are seven routines available for this system.

- Inflate right front
- Inflate left front
- Inflate right rear
- Inflate left rear
- Inflate front
- Inflate rear
- Inflate all

These routines are to be used either when work has been completed on a section of the air suspension system or to try and level the vehicle in an emergency repair situation.



Caution: The vehicle will raise during inflation of the air suspension. To avoid damage, ensure all doors are closed.

Pre-test conditions

- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.

Note: These routines may need to be repeated more than once to completely inflate the specified area.

Land Rover Systems

Steering Angle Sensor (SAS)

- Land Rover vehicles

Steering Angle Sensor (SAS) Calibration

The SAS can be calibrated by using the 'SAS Calibration' option and following the on-screen instructions.

Note: The SAS should be calibrated after performing any wheel alignment, suspension adjustment or steering column replacement procedure.

Longitudinal Acceleration Sensor Calibration

This routine is necessary in the following situations.

- The longitudinal acceleration sensor has been replaced.
- The ABS / TC / ESP control module has been replaced.
- The ESP system is malfunctioning. Resetting of this sensor can sometimes cure ESP malfunction.

Service Reset

- Check application list for vehicles covered.

There are two service reset options available for Land Rover.

Service Interval Reset

This option resets the conventional service interval indicator. This function is to be used **after** a full service has been completed on the vehicle.

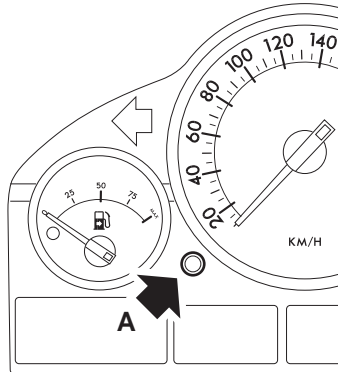
Oil Degradation Counter Reset

This option is necessary on vehicles which have Diesel Particulate Filters (DPF) fitted. This is not necessary on vehicles with petrol or LPG engines or for diesel engines where a DPF is not fitted. The counter should only be reset **after** the oil has been changed.

Manual Service Reset

- Range Rover (L322) (2002 - 2009) (except Japan and North America)

1. Switch ignition OFF.



OM1257

2. Press and hold button **A**.
3. Keep button depressed and switch the ignition to position I.
4. Keep button depressed for five seconds until 'SIA RESET' appears in the LCD display.
5. The display will now indicate the distance to service and the type of service required (OIL SERVICE or INSPECTION).
6. Check the distance to service has been reached. If it hasn't, please proceed to the next step. If it has, please proceed to step 9.
7. Press button **A** once. The display will show the date to service.
8. Check the service date has been reached. If it has not, please proceed to step 10. If it has, please proceed to step 11.
9. When the distance to service has been reached, press button **A** for 5 seconds. 'RESET' will flash on the display. Press button **A** again before 'RESET' has flashed 5 times to reset the service distance limit. The new distance to service will be displayed for 5 seconds before the service date is displayed.
10. Press button **A** once to end the service interval check and reset.
11. When the date for service limit has been reached, press and hold button **A** for 5 seconds. 'RESET' will flash on the display. Press button **A** again before 'RESET' has flashed 5 times to reset the service date limit. The new date to service will be displayed for 5 seconds before end service is displayed.
12. Switch ignition OFF.

Land Rover Systems

Electronic Parking Brake (EPB)

- Discovery 3 (2005 - 2009)
- Range Rover Sport (L320) (2005 - 2009)
- Range Rover (L322) (2006 - 2009)

There are four functions available under the 'Service Brakes' menu.

Unjam Electronic Parking Brake

This procedure should be used if one of the parking brake cables becomes detached or breaks whilst the vehicle is being driven.

Pre-test conditions

- The vehicle must be stationary.
- The engine must be RUNNING and at IDLE speed.

After performing the procedure it is necessary for the technician to carry out checks on the condition of the rear brake shoes and drums. If both are satisfactory, the technician should then refer to the Land Rover technical information.

Note: *Part of this procedure places the parking brake into 'Mounting Position'. In 'Mounting Position' a red flashing light will appear in the instrument cluster. It does not indicate a vehicle fault.*

Mounting Position

The parking brake must be driven into the 'Mounting Position' if any of the following procedures are to be performed.

- Parking brake shoes removal or installation
- Parking brake shoe and lining adjustment

Note: *This procedure must be carried out if new parking brake shoes are fitted, new rear brake discs are fitted or if the vehicle has been mud wading for more than 50 miles.*

- Changing parking brake cables
- Parking brake actuator removal or installation (to ensure parking brake cables can be connected and disconnected)

Pre-test conditions

- The vehicle must be stationary.
- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.

Ensure the on-screen instructions are followed precisely.

To exit the 'Mounting Position' mode, switch the parking brake on and then off, twice.

Note: This procedure places the parking brake into 'Mounting Position'. In 'Mounting Position' a red flashing light will appear in the instrument cluster. It does not indicate a vehicle fault.

Latching Position

This procedure may be required after use of the parking brake emergency release in order to relatch the parking brake.

Pre-test conditions

- The vehicle must be stationary.
- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.

Ensure the on screen instructions on the service tool are followed precisely and in the correct order.

Longitudinal Accelerometer Calibration

This procedure may be necessary if the longitudinal accelerometer has been replaced.

Pre-test conditions

- The ignition must be ON.
- An approved battery charger must be connected to ensure consistent power supply.
- Ensure the vehicle is placed on a level surface and remains stationary throughout the calibration procedure.
- Ensure the parking brake module is secured to the vehicle and that the parking brake is applied.

Ensure the on-screen instructions are followed precisely.

Land Rover Systems

Electronic Parking Brake (EPB) - Disabling Manually

This procedure is necessary before carrying out work on the rear brake discs. When performed correctly, the brake caliper pistons are retracted by the control module.

1. Switch the ignition ON.
2. Apply and hold the footbrake.
3. Apply and hold the parking brake switch in the RELEASE position.
4. Turn the ignition OFF and remove the key (where applicable).
5. Release the footbrake.
6. Release the parking brake switch.
7. Remove fuse number 8 from the fuse box to isolate the parking brake electrical circuit.

Electronic Parking Brake (EPB) - Enabling Manually

1. Install fuse number 8 into the fuse box to re-enable the parking brake electrical circuit.

Electronic Parking Brake (EPB) Shoes - Bedding In

This procedure must be carried out if new parking brake shoes are fitted, new rear brake discs are fitted or if the vehicle has been mud wading for more than 50 miles.

1. Switch engine ON.
2. Apply the footbrake 3 times within 10 seconds and hold applied after the third application.
3. Apply the parking brake 4 times and release it 3 times within 10 seconds to enter 'Service Bedding In Procedure Mode'.

Note: The 'Service Bedding In Procedure Mode' will remain active until the next ignition cycle or until the vehicle speed exceeds 31mph (50km/h). If it deactivates, repeat steps 1-3 to re-activate 'Service Bedding In Procedure Mode'.

4. Conduct 10 stops from 19 - 22mph (30 - 35km/h) to bed-in the parking brake linings.

Note: The parking brake force will be increased to the dynamic maximum as long as the switch is held in the applied position. If the switch is released then the parking brake will be released.



Caution: The EPB must be allowed to cool between each application. The EPB can be cooled either by driving for 500 yards (500 metres) at 19 - 22mph (30 - 35 kmh) or by remaining stationary for 1 minute without activating the parking brake switch.

Cleaning

To maintain the condition and serviceability of the service tool, it is advisable to follow the cleaning procedures below.



Caution: Never use solvents or other harsh cleaning fluids to clean the HawkEye Pro service tool. Harsh solvents may seriously damage the plastic casing.



Caution: The HawkEye Pro service tool is not waterproof. Always dry the unit thoroughly after cleaning or if it has been subject to accidental spillage.

It is recommended that the following parts of the HawkEye Pro service tool are periodically inspected and cleaned as required.

- The case
- The display screen
- The keypad
- Adapter cables and connectors

To clean the HawkEye Pro service tool, or any of its cables or connectors, apply a mild detergent solution to a soft clean cloth.



Caution: Before cleaning, disconnect the service tool from the vehicle or any other power source.

Display Screen

During normal everyday use, the screen may become dusty or covered in grime. To clean the screen, always use a soft, clean, antistatic cloth. If any stubborn stains or marks remain, use a non-abrasive glass cleaner applied to a soft, clean cloth. Gently wipe the cloth across the display until the marks have been removed.

Software Updates

Software updates can be loaded onto the service tool by connecting it to a PC. The cable to connect the service tool to the PC will be supplied along with the upgrade CD or via the internet. Full instructions for loading the software updates to the service tool will also be supplied with the upgrade.

Specification

HawkEye Pro complies with ISO/DIS 15031 Part 4 as an EOBD service tool.

Voltage Requirements - 8.0 volts to 16.0 volts DC.

Current requirement - 750mA maximum.

Display - 20 characters by 4 lines LCD with LED back light.

Operating temperature range - 0°C to 50°C

General Information

Declaration of Conformity

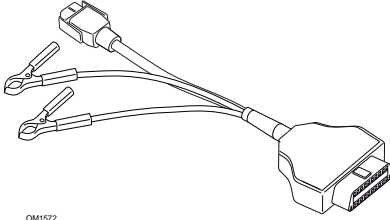
The HawkEye Pro tool is CE marked and complies with the following directives.

- EN55022:1998 - ITE Emissions (Class A)
- EN50082-1:1998 - Generic EMC Immunity
- EN60950:1992 - Safety Requirements
- FCC47 Part 15 - Radio Frequency Devices (Class A)

A copy of the Declaration of Conformity certificate is available on request from the manufacturer or your supplier.

Cable Identification

Optional cables



OM1572

BA5804

HawkEye Pro Menu Structure

The table below details the HawkEye service tool main menu structure.

Defender	EMS	CUX14	See 'Petrol Engine - 14CUX', page 44
		GEMS	See 'Petrol Engine - GEMS', page 45
		TD5	See 'Diesel Engine - TD5', page 41
	ABS	WABCO 'D'	See 'ABS - WABCO 'D'', page 54
	Security	10AS	'Security - 10AS', page 65
Defender (L316)	EMS	See 'Diesel Engine - Diesel EMS', page 42	
	ABS	WABCO 'D'	See 'ABS - WABCO 'D'', page 54
	Security	10AS	See 'Security - 10AS', page 65
Discovery I	EMS	CUX14	See 'Petrol Engine - 14CUX', page 44
		GEMS	See 'Petrol Engine - GEMS', page 45
		MEMS 1.9	See 'Petrol Engine - MEMS 1.9', page 46
		EDC 1.3.1	See 'Diesel Engine - EDC 1.3.1', page 42
	ABS	WABCO 'C'	See 'ABS - WABCO 'C'', page 56
	Airbag	TRW SPS	See 'Airbag - TRW SPS', page 57
	Security	10AS	See 'Security - 10AS', page 65

Appendix A: Menus

Discovery II	EMS	M 5.2.1	See 'Petrol Engine - M 5.2.1', page 48
		TD5	See 'Diesel Engine - TD5', page 41
	Transmission	GS8.87.0/1	See 'Transmission - GS 8.87.0/1', page 50
	ABS	WABCO 'D'	See 'ABS - WABCO 'D'', page 54
	Airbag	TRW Gen 4	See 'Airbag - TRW Gen 4', page 57
	Security	BCU	See 'Security - BCU', page 67
	Chassis	ACE (ROCK / ARC)	See 'Chassis - ACE', page 63
Discovery 3	EMS	Petrol	See 'Petrol Engine - Petrol EMS', page 49
		Diesel	See 'Diesel Engine - Diesel EMS', page 43
	Transmission	See 'Transmission', page 53	
	ABS	See 'ABS', page 56	
	Airbag	See 'Airbag', page 58	
	EPB	See 'EPB', page 75	
	Service Reset	See 'Service Reset', page 74	
	Steering Angle	See 'SAS', page 73	
	Security	See 'Security - Body', page 72	
	Chassis	See 'Chassis', page 63	
	Fuel-Burning Heater	See 'Fuel-Burning Heater', page 76	

Appendix A: Menus

Discovery 4	EMS	Petrol	See 'Petrol Engine - Petrol EMS', page 49
		Diesel	See 'Diesel Engine - Diesel EMS', page 43
	Transmission	ZF HP26 ZF HP28	See 'Transmission', page 53
	ABS	See 'ABS', page 56	
	Airbag	See 'Airbag', page 58	
	Climate control	See 'Climate Control', page 59	
	EPB	See 'EPB', page 75	
	Body electrics	See 'Security - Body', page 72	
	Service Reset	See 'Service Reset', page 74	
	Immob. (Steer.Lock)	See 'Security - VIM', page 72	
	Chassis	See 'Chassis', page 63	
	Fuel-Burning Heater	See 'Fuel-Burning Heater', page 76	
	HSCAN Clear DTCs	See 'Global DTCs', page 77	
	MSCAN Clear DTCs	See 'Global DTCs', page 77	

Appendix A: Menus

Freelander 1	EMS	MEMS 1.9	See 'Petrol Engine - MEMS 1.9', page 46
		MEMS 3	See 'Petrol Engine - MEMS 3', page 47
		EMS 2000	See 'Petrol Engine - EMS 2000', page 45
		MS43	See 'Petrol Engine - MS43', page 48
		EDC 1.3.1	See 'Diesel Engine - EDC 1.3.1', page 42
		DDE 4.0	See 'Diesel Engine - DDE 4.0', page 42
	Transmission	JATCO	See 'Transmission - JATCO', page 50
	ABS	WABCO 'D'	See 'ABS - WABCO 'D'', page 54
		ABS MK20	See 'ABS - MK20 / MK25', page 55
		ABS MK25	
	Airbag	Autoliv AC4	See 'Airbag - Autoliv AC4', page 57
		Siemens SRE Smart	See 'Airbag - Siemens SRE Smart', page 57
	Security	CCU	See 'Security - CCU', page 66
		EWS 3D	See 'Security - EWS 3D', page 66

Appendix A: Menus

Freelander 2	EMS	Petrol	See <i>'Petrol Engine - Petrol EMS'</i> , page 48
		Diesel	See <i>'Diesel Engine'</i> , page 43
	Transmission	See <i>'Transmission'</i> , page 50	
	ABS	See <i>'ABS'</i> , page 55	
	Airbag	See <i>'Airbag'</i> , page 57	
	Climate control	See <i>'Climate Control'</i> , page 59	
	Service Reset	See <i>'Service Reset'</i> , page 74	
	SASM	See <i>'SAS'</i> , page 73	
	Security	See <i>'Security'</i> , page 67	
	Fuel-Burning Heater	See <i>'Fuel-Burning Heater'</i> , page 76	

Appendix A: Menu

Range Rover (L322) 02MY - 05MY	EMS	Petrol	See 'Petrol Engine - ME 7.2', page 49
		Diesel	See 'Diesel Engine - DDE 4.0', page 43
	Transmission	Petrol	See 'Transmission - ZF / EGS 8602', page 51
		Diesel	See 'Transmission - GM5 / EGS20', page 52
	ABS	See 'ABS - Bosch 5.7', page 56	
	Airbag	See 'Airbag - TRW MRS 4', page 58	
	Climate control	See 'Climate Control', page 59	
	Body Electrics	See 'Security - GM3 Body Electrics', page 69	
	Service Reset	See 'Service Reset', page 74	
	Steering Angle Sensor	See 'SAS', page 73	
	Security	See 'Security - EWS 3D', page 66	
	Air Suspension	See 'Air Suspension - EHC2', page 61	
	Fuel-Burning Heater	See 'Fuel-Burning Heater', page 76	

Appendix A: Menus

Range Rover (L322) 06MY	EMS	Petrol	See 'Petrol Engine - Petrol EMS', page 49
		Diesel	See 'Diesel Engine - DDE 4.0', page 43
	Transmission	Petrol	See 'Transmission', page 53
		Diesel	See 'Transmission', page 53
	ABS	Petrol	See 'ABS', page 56
		Diesel	See 'ABS - Bosch 5.7', page 56
	Airbag	See 'Airbag - TRW MRS 4', page 58	
	Climate control	See 'Climate Control', page 59	
	Service Reset	See 'Service Reset', page 74	
	Body Electrics	See 'Security - GM3 Body Electrics', page 69	
	Steering Angle Sensor	Petrol	See 'SAS', page 73
		Diesel	See 'SAS', page 73
	Security	See 'Security - GM3 Body Electrics', page 69	
	Air Suspension	See 'Chassis', page 63	
Fuel-Burning Heater	See 'Fuel-Burning Heater', page 76		

Appendix A: Menu

Range Rover (L322) 07- 09 MY	EMS	Petrol	See ' <i>Petrol Engine - Petrol EMS</i> ', page 49
		Diesel	See ' <i>Diesel Engine - Diesel EMS</i> ', page 43
	Transmission	See ' <i>Transmission</i> ', page 53	
	ABS	See ' <i>ABS</i> ', page 56	
	Airbag	See ' <i>Airbag</i> ', page 58	
	EPB	See ' <i>EPB</i> ', page 75	
	Service Reset	See ' <i>Service Reset</i> ', page 74	
	Steering Angle Sensor	'SAS', page 73	
	Body Electrics	See ' <i>Security - GM3 Body Electrics</i> ', page 69	
	Chassis	See ' <i>Chassis</i> ', page 63	
	Fuel-Burning Heater	See ' <i>Fuel-Burning Heater</i> ', page 76	

Appendix A: Menus

Range Rover (L322) 10 MY	EMS	Petrol	See 'Petrol Engine - Petrol EMS', page 49
		Diesel	See 'Diesel Engine - Diesel EMS', page 43
	Transmission	See 'Transmission', page 53	
	ABS	See 'ABS', page 56	
	Airbag	See 'Airbag', page 58	
	Climate control	See 'Climate Control', page 59	
	EPB	See 'EPB', page 75	
	Steering angle	See 'SAS', page 73	
	Body electrics	See 'Security - Body', page 72	
	Service Reset	See 'Service Reset', page 74	
	Immob. (Steer.Lock)	See 'Security - VIM', page 72	
	Chassis	See 'Chassis', page 64	
	Fuel-Burning Heater	See 'Fuel-Burning Heater', page 76	
	HSCAN Clear DTCs	See 'Global DTCs', page 77	
	MSCAN Clear DTCs	See 'Global DTCs', page 77	

Appendix A: Menus

Range Rover (P38a)	EMS	M 5.2.1	See 'Petrol Engine - M 5.2.1', page 48
		GEMS	See 'Petrol Engine - GEMS', page 45
		EDC 1.3.1	See 'Diesel Engine - EDC 1.3.1', page 42
	Transmission	GS8.87.0/1	See 'Transmission - GS 8.87.0/1', page 50
		GS2-38	See 'Transmission - GS 2-38', page 50
	ABS	WABCO 'C'	See 'ABS - WABCO 'C'', page 56
		WABCO 'D'	See 'ABS - WABCO 'D'', page 54
	Airbag	TRW SPS	See 'Airbag - TRW SPS', page 57
		TRW Gen 4	See 'Airbag - TRW Gen 4', page 57
	Climate control	See 'Climate Control', page 59	
	Chassis	Air Suspension	See 'Climate Control', page 59
	Body electrics - BeCM	See 'Security - BeCM Body Electronics', page 70	
	Range Rover Classic	EMS	14CUX
Chassis		Air Suspension	See 'Climate Control', page 59

Appendix A: Menus

Range Rover Sport (L320) - 06 - 09 MY	EMS	Petrol	See <i>'Petrol Engine - Petrol EMS'</i> , page 49
		Diesel	See <i>'Diesel Engine - Diesel EMS'</i> , page 43
	Transmission	See <i>'Transmission'</i> , page 53	
	ABS	See <i>'ABS'</i> , page 56	
	Airbag	See <i>'Airbag'</i> , page 58	
	Climate control	See <i>'Climate Control'</i> , page 59	
	EPB	See <i>'EPB'</i> , page 75	
	Service Reset	See <i>'Service Reset'</i> , page 74	
	Steering Angle Sensor	See <i>'SAS'</i> , page 73	
	Security	See <i>'Security - Body'</i> , page 72	
	Chassis	See <i>'Chassis'</i> , page 63	
	Fuel-Burning Heater	See <i>'Fuel-Burning Heater'</i> , page 76	

Appendix A: Menu

Range Rover Sport (L320) 10 MY	EMS	Petrol	See 'Petrol Engine - Petrol EMS', page 49
		Diesel	See 'Diesel Engine - Diesel EMS', page 43
	Transmission	See 'Transmission', page 53	
	ABS	See 'ABS', page 56	
	Airbag	See 'Airbag', page 58	
	Climate control	See 'Climate Control', page 59	
	EPB	See 'EPB', page 75	
	Body electrics	See 'Security - Body', page 72	
	Service Reset	See 'Service Reset', page 74	
	Immob. (Steer.Lock)	See 'Security - VIM', page 72	
	Chassis	See 'Chassis', page 63	
	Fuel-Burning Heater	See 'Fuel-Burning Heater', page 76	
	HSCAN Clear DTCs	See 'Global DTCs', page 77	
	MSCAN Clear DTCs	See 'Global DTCs', page 77	

Menus - Diesel Engine

Diesel Engine - TD5

- Defender
- Discovery II

Read Faults / DTCs		
Clear Faults / DTCs		
Live Data		
Circuit Tests	Injector 1 Test	
	Injector 2 Test	
	Injector 3 Test	
	Injector 4 Test	
	Injector 5 Test	
	CM Check	
	EGR Vacuum Mod	
	EGR Inlet Thrott.	
	Turbo Wastegate	
	MI Lamp	
	Glow Plug Lamp	
	Glow Plug Relay	
	Tachometer	
	Temperature Gauge	
	Fuel Pump	
	A/C Clutch Drive	
Fan(s) Test		
Programming	Immobilisation	Immob. NOT Fitted
		Immob. Fitted
	Read Injector	
	Set Injector	Injector 1
		Injector 2
		Injector 3
		Injector 4
		Injector 5
Set Throttle	Throttle 2 Track	
	Throttle 3 Track	

Appendix A: Menus

Diesel Engine - Diesel EMS

- Defender (L316) (2007 -)

Read Faults / DTCs
Clear Faults / DTCs
Live Data
Circuit Tests

Diesel Engine - EDC 1.3.1

- Freelander 1
- Discovery I
- Range Rover (P38a)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Circuit Tests	Engine Stop
	Boost Pres Wasteg
	A/Con. Comp. Relay
	EGR Valve
	Pre-Heater Relay
	Pre-Heater W/Lamp
	Diagnostic Lamp
Fuel Pump	
Read CM Details	
Security code	

Diesel Engine - DDE 4.0

- Freelander 1

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Aircon Clutch
	Glow Plug Relay
	EGR Vacuum Mod
	Cooling Fan

Diesel Engine

- **Freelander 2 (L359)**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
Oil Change
ECM Data

Diesel Engine - DDE 4.0

- **Range Rover (L322) (2002 - 2006)**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
ECM Data	
Actuators	EGR Control
	Pre-Supply Pump
	Glow Time Relay
	Charge Air Control
	Cooling Fan

Diesel Engine - Diesel EMS

- **Discovery 3**
- **Range Rover (L322) (2007 - 2009)**
- **Range Rover Sport (L320)**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Appendix A: Menu

Diesel Engine - Diesel EMS

- **Discovery 4 (L319) 2010 MY**
- **Range Rover (L322) 2010MY**
- **Range Rover Sport (L320)2010 MY**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Menus - Petrol Engine

Petrol Engine - 14CUX

- **Defender**
- **Discovery I**
- **Range Rover Classic**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Injectors
	Fuel Pump
Learn security	
Configuration	Reset adaption

Petrol Engine - GEMS

- Defender
- Discovery I
- Range Rover (P38a)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	MI Lamp
	Fuel Pump
	Purge Valve

Petrol Engine - EMS 2000

- Freelander 1

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Main Relay
	Injector 1
	Injector 2
	Injector 3
	Injector 4
	Injector 5
	Injector 6
	Fuel Pump Relay
	A/C Clutch
	Cooling Fan Relay
	Purge Canister
	Over Speed Relay
	Stepper Motor
	Prime Fuel Line
VIS Balance	
VIS Butterfly	
ECM Data	

Appendix A: Menus

Petrol Engine - MEMS 1.9

- Freelander 1
- Discovery I

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Temperature Gauge
	Fuel Pump
	PTC Heater
	Air Conditioning
	Idle Solenoid
	ORFCO Solenoid
	Pulse Air Valve
	EGR Valve
	Purge Valve
	O2 Sensor Heater
	Emiss. Fail Lamp
	Turbo Boost Cont
	Fuel Used
	Fan Control 1
	Fan Control 2
	VVT - Inc Period
	Back Pres. Valve
	Var. Geom. Inlet
	Anti RunOn Valve
	Tachometer
	Boost Gauge
	SW Throttle Sw
	VVT - Dec Period
	Fan Control 3
	Test Ign. Coils
	Injectors
	Ambient Air Lamp
Cruis Dis Relay	
Hill Desc Relay	
RevLite-Caterham	

Petrol Engine - MEMS 3

- Freelander 1

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
ECM Data	
Actuators	Main Relay
	Fuel Pump Relay
	MI Lamp
	A/C Clutch
	Radiator Fan
	Auxiliary Fan
	US O2 Heater
	DS O2 Heater
	Engine Bay Fan
	Warning Lamp
	Tachometer
	Injector 1
	Injector 2
	Injector 3
Injector 4	

Appendix A: Menu

Petrol Engine - MS43

- **Freelander 1**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
ECM Data	
Actuators	Cooling Fan
	Fuel Pump
	DMTL Pump
	DMTL Valve
	DMTL Heater
	Purge Valve
	A/C Clutch
	MI Lamp

Petrol Engine - Petrol EMS

- **Freelander 2 (L359)**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Petrol Engine - M 5.2.1

- **Discovery II**
- **Range Rover (P38a)**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
ECM Data	
Actuators	Fuel Pump
	Condenser Fan
	CVS Valve
	E Box Fan

Petrol Engine - ME 7.2

- Range Rover (L322)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Fuel Injector 1
	Fuel Injector 2
	Fuel Injector 3
	Fuel Injector 4
	Fuel Injector 5
	Fuel Injector 6
	Fuel Injector 7
	Fuel Injector 8
	Map Thermostat
	Tank Vent. Valve
A/C Compressor	
ECM Data	

Petrol Engine - Petrol EMS

- Discovery 3 (L319)
- Range Rover (L322) (2006)
- Range Rover (L322) 2007-2009
- Range Rover (L322) 2010
- Range Rover Sport (L320) 2006 - 2009
- Range Rover Sport (L320) 2010
- Discovery 4 (L319) 2010

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Appendix A: Menus

Menus - Transmission

Transmission - JATCO

- **Freelander 1**

Read Faults / DTCs
Clear Faults / DTCs
Live Data

Transmission

- **Freelander 2 (L359)**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Transmission - GS 8.87.0/1

- **Discovery II**
- **Range Rover (P38a)**

Faults Codes / DTCs	Read Faults / DTCs
	Clear Faults / DTCs
Live Data	
ECM Data	

Transmission - GS 2-38

- **Range Rover (P38a)**

Faults Codes / DTCs	Read Faults / DTCs
	Clear Faults / DTCs
Live Data	
ECM Data	

Transmission - ZF / EGS 8602

- Range Rover (L322) (2002 - 2005)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Solenoid Valve 1
	Solenoid Valve 2
	Solenoid Valve 3
	Pressure Act. 1
	Pressure Act. 2
	Pressure Act. 3
	Pressure Act. 4
	Pressure Act. 5
	Shiftlock
Instruments	
ECM Data	

Appendix A: Menu

Transmission - GM5 / EGS20

- Range Rover (L322) (2002 - 2006)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Pressure Act. 1
	Pressure Act. 4
	Solenoid Valve 1
	Solenoid Valve 2
	Solenoid Valve 3
	Shiftlock
	Reversing Light
	Eng. Intervention
	Park (P) Lamp
	Reverse (R) Lamp
	Neutral (N) Lamp
	Drive (D) Lamp
	1st Gear (1) Lamp
	2nd Gear (2) Lamp
	3rd Gear (3) Lamp
	4th Gear (4) Lamp
	5th Gear (5) Lamp
	Sport (S) Lamp
	Economy (E) Lamp
	Manual (M) Lamp
Economy (A) Lamp	
Fault Indication	
ECM Data	

Transmission

- Discovery 3 (L319)
- Discovery 4 (L319) 2010 ZF HP26 / ZF HP28
- Range Rover Petrol (L322) 2006
- Range Rover (L322) 2007 - 2009
- Range Rover (L322) 2010
- Range Rover Sport (L320) 2006 - 2009
- Range Rover Sport (L320) 2010

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Appendix A: Menu

Menu - Anti-lock Braking System (ABS)

ABS - WABCO 'D'

- Defender
- Defender (L316) (2007 -)
- Freelander 1
- Discovery II
- Range Rover (P38a)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Circuit Tests	Inlet Valve RF
	Outlet Valve RF
	Wheel Test RF
	Hydraulics RF
	Inlet Valve LF
	Outlet Valve LF
	Wheel Test LF
	Hydraulics LF
	Inlet Valve RR
	Outlet Valve RR
	Wheel Test RR
	Hydraulics RR
	Inlet Valve LR
	Outlet Valve LR
	Wheel Test LR
	Hydraulics LR
	Supplies / Grounds
	ABS Warning Lamp
	TC Warning Light
	Brake Warn. Lamp
Shuttle Valve Sw.	
Valve Relay	
Pump Relay	
HDC Info. Light	

Circuits Tests (continued)	HDC Fault Light
	Brake Light Relay
	Speedometer
	SLS RR Valve
	SLS LR Valve
	SLS Exhaust Valve
	SLS Cmpress Relay
	SLS RR Height
	SLS LR Height
	SLS Audible Warn
	SLS Warning Light
	OFF Road Light
	TC Valve NC
	TC Valve NO
	Isolation Inlet
Rough Road Signal	
Programming	Configuration
	Transportation

ABS - MK20 / MK25

- **Freelander 1**

Read Faults / DTCs
Clear Faults / DTCs
Live Data

ABS

- **Freelander 2 (L359)**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Configuration	SAS Calibration
	Long. Accel. Calib.
ECM Data	

Appendix A: Menu

ABS - WABCO 'C'

- Discovery I
- Range Rover (P38a)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Circuit Tests	ABS Warning Lamp
	ETC Info Lamp
	Wheel Test LF
	Wheel Test LR
	Wheel Test RF
	Wheel Test RR
	Ignition Valves
	ETC Valves

ABS - Bosch 5.7

- Range Rover (L322) (2002 - 2006)

Read Faults / DTCs
Clear Faults / DTCs
SAS Calibration

ABS

- Discovery 3 (L319)
- Discovery 4 (L319) 2010
- Range Rover (L322) 2006 - 2010
- Range Rover Sport (L320) 2006 - 2010

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Menus - Airbag

Airbag - Autoliv AC4

- Freelandr 1

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Airbag - Siemens SRE Smart

- Freelandr 1

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Airbag

- Freelandr 2 (L359)

Read Faults / DTCs		
Clear Faults / DTCs		
ECM Data		
Configuration	Airbag Build Mode	Entry
		Exit
	Crash Reset	

Airbag - TRW SPS

- Discovery I
- Range Rover (P38a)

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Airbag - TRW Gen 4

- Discovery II
- Range Rover (P38a)

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Appendix A: Menus

Airbag - TRW MRS 4

- Range Rover (L322) (2002 - 2006)

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Airbag

- Discovery 3 (L319)
- Discovery 4 (L319) 2010
- Range Rover (L322) 2007 - 2010
- Range Rover Sport (L320) 2006 - 2010

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Menus - Climate control

Climate Control

- Range Rover (P38a)
- Range Rover (L322) 2002 - 2006
- Range Rover (L322) 2006 - 2009

Read Faults / DTCs
Clear Faults / DTCs

Climate Control

- Freelander 2 (L359)
- Discovery 4 (L319) 2010
- Range Rover (L322) 2006 - 2010
- Range Rover Sport (L320) 2006 - 2010

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Appendix A: Menu

Menus - Air Suspension

Air Suspension - Airsus

- Range Rover Classic
- Range Rover (P38a)

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Circuit Tests	Compressor
	Left Front Valve
	Right Front Valve
	Left Rear Valve
	Right Rear Valve
	Inlet Valve
	Exhaust Valve
	EAS Manual
	EAS Fault
	SLOW 35 MPH MAX
	SLOW 20 MPH MAX
	Inhibit Lamp
	High Profile Lamp
	Standard Lamp
Low Profile Lamp	
Access Lamp	
Maintenance	Transportation
	High Lock Mode
Calibration	

Air Suspension - EHC2

- Range Rover (L322) (2002 - 2005)

Read Faults / DTCs		
Clear Faults / DTCs		
Live Data		
Actuators	Access Level	
	Motorway Level	
	Standard Level	
	Offroad Level	
	FR Corner Valve	
	FL Corner Valve	
	RR Corner Valve	
	RL Corner Valve	
	Reservoir Valve	
	Exhaust Valve	
	Compressor Relay	
	Hi. Pres. Exhst. Val	
	Rear Cross-Link	
	Front Cross-Link	
	Access Indict. LED	
	Motorway LED	
	Standard LED	
Off-Road LED		
Hold LED		
Service Functions	Operational Mode	Transport Mode
		Production Mode
		Wheel Alignm. Mode
		Normal Mode
	Deflate	Deflate All
		Deflate Front
		Deflate Rear
		Deflate FL Corner
		Deflate FR Corner
		Deflate RL Corner
Deflate RR Corner		

Appendix A: Menus

Service Functions (continued)	Inflate	Inflate All
		Inflate Front
		Inflate Rear
		Inflate FL Corner
		Inflate FR Corner
		Inflate RL Corner
		Inflate RR Corner
ECM Data		

Menus - Chassis

Chassis - ACE

- **Discovery II**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Warning Lamp
	Main Relay
	Direct. Ctl. Valve 1
	Direct. Ctl. Valve 2
Calibration	Upper Lateral Acc
	Lower Lateral Acc
	Both Lateral Acc
Bleeding	Front Axle
	Rear Axle
	Full Bleed
System Test	

Chassis

- **Discovery 3 (L319)**
- **Range Rover (L322) 2006 - 2009**
- **Range Rover Sport (L320) 2006 - 2009**

Read Faults / DTCs		
Clear Faults / DTCs		
Live Data		
Configuration	Operational Mode	Production Mode
		Normal Mode
	Tolerance Control	Normal / Standard
		Tight/Wheel-Align
	Deflate	Deflate Springs
		Deflate Reservoir
		Deflate All
Exit Deflate Mode		
ECM Data		

Appendix A: Menus

Chassis

- **Discovery 4 (L319) 2010**
- **Range Rover (L322) 2010**
- **Range Rover Sport (L320) 2010**

Read Faults / DTCs
Clear Faults / DTCs
ECM Data
Live Data

Menus - Security

Security - 10AS

- Defender
- Defender (L316) (2007 -)
- Discovery I

Live Data	
Programming	GEMS Immobilisation
	Spider Immobilisation
	EDC Immobilisation
	DDS Immobilisation
	Catalyst Overheat Warning
	Land Rover Defender
	Discovery Interior Lights
	Defender Interior Lights
	Pulsed Horn
	Hazards ON Alarm Triggered
	Hazards ON Alarm Arm / Disarm
	Passive Immobilisation
	CDL Operative With Alarm Armed
	Immobiliser Off With Ignition
	Disarm Alarm / Immob. With Key
	Disarm Alarm Only with Key
	Unlock Vehicle - No Disarm
Mislock Sounder	
LED Indication of Alarm Trigger	
Transmitters	

Appendix A: Menuus

Security - CCU

- Frelander 1

Live Data	
Circuit Tests	CCU Int Buzzer
	Horn
	Alarm LED
	Door Open W/Lamp
	Seat Belt W/Lamp
	H/Brake Warn Lamp
	Courtesy Light
	Tail Fog Lamps
	Hazard Relay
	Driver Door Motor
	D'able Lock Motors
	Unlock Motors
	Tail Window Down
	Tail Window Up
	Front Wiper Slow
	Wiper F'ward Rel
	Wiper Reverse Rel
	Tail Door Act
	Win Heater Relay
	Crank Enable

Security - EWS 3D

- Frelander 1
- Range Rover (L322) (2002 - 2005)

Fault Codes / DTCs	Read Faults / DTCs
	Clear Faults / DTCs
Live Data	
ECM Data	

Security

- **Freelander 2 (L359)**

Read Faults / DTCs	
Clear Faults / DTCs	
ECM Data	
Live Data	
Configuration	Crash Reset

Security - BCU

- **Discovery II**

Live Data	
Circuit Tests	Horn
	Fuel Flap
	Alarm LED
	Ign Interlock
	Crank Enable
	Lock Doors
	Unlock Doors
	Superlock Doors
	Single Pt. Entry
	Front LH Window
	Front RH Window
	Rr Window Enable
	Sunroof Enable
	Front Wipe Enable
	Rear Wiper Enable
	H/Lamp Power Wash
	Front Fogs Relay
	LH Ind. Enable
	RH Ind. Enable
	Shift Interlock
Transfer Neutral	
Sounder	
Check Engine Lamp	
LH Ind Warn Lamp	

Appendix A: Menu

Circuit Tests (continued)	RH Ind Warn Lamp
	Check ACE Lamp
	Manual Lamp
	Diff. Lock Lamp
	Oil Pressure Lamp
	H/Temp Warn. Lamp
	Sport Warn Lamp
	Trans. Temp Lamp
	Alternator W/Lamp
	Trailer Indicator
	HDC Select W/Lamp
	ABS Warning Lamp
	Traction W/Lamp
	Check HDC W/Lamp
	Brake Warn. Lamp
	Seat Belt W/Lamp
	Glow Plug W/Lamp
	Check SLS W/Lamp
	Heated Rr Window
	Heat Rr Win Lamp
Heated Front Lamp	
Transmitters	
Programming	Gearbox
	Front FOG
	Shift Interlock
	DRL
	Wash Wipe
	Key In Warning
	Electric Seat
	Electric Windows
	Heated Fr Screen
	Rear Win / Sun Roof
	Autographics
	HDC/SLABS
	Courtesy Lamps
	Error Warning

Programming (continued)	Seat Belt W/Lamp
	Seatbelt Sound
	Bulb Failure
	Superlock
	Unlocking
	Alarm Disarm
	Inertia Switch
	Speed Locking
	Volumetric
	Alarm
	Passive
	Hazards
	Mislock
	Alarm Sound
	Bath Robe Lock
	Alarm Tampered
	Eng. Immobilised
	Low Battery Warn
EKA	

Security - GM3 Body Electrics

- Range Rover (L322)

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Appendix A: Menus

Security - BeCM Body Electronics

- Range Rover (P38a)

BeCM

Read Faults / DTCs		
Clear Faults / DTCs		
Live Data		
Vehicle params	Security	
	Other	
Actuators	Warning Lamps	Alternator Charge
		Cruise Active
		EFI
		Traction Control
		Low Oil Pressure
		Service Engine
		Low Fuel Gauge
		Brake Failure
		ABS Warning Lamp
		Trailer DI
		Air Susp Warning
		Eng Temp Gauge
		Lights On
		Seat Belt W/Lamp
	LH Indicator	
	RH Indicator	
	Main beam	
	Fuel Gauge Calib	
	Temperature Gauge	
	Warning Buzzer	
	Instrument Illum.	

Appendix A: Menus

Actuators - continued	Lights	Main beam
		Dipped beam
		Driving Lights
		Left Side Lamp
		Right Side Lamp
		Left indicator
		Right indicator
		Fog lights
		Rear fog lights
		Reversing lights
		Num plate light
		Courtesy Lamps
		Electric Windows
	FR Window	
	RL Window	
	RR Window	
	Sunroof	
	Horn	
	Wash Wipe	Front Wiper Fast
		Front Wiper slow
		Front Washer Spray
		Rear Wiper
		Rear Washer
	Headlamp WashWipe	
	Locking	LHF Door Lock
		RHF Door Lock
		Rear Doors Lock
Fuel Filler Cap		

Appendix A: Menus

Security - GM3 Body Electrics

- **Range Rover (L322) 2006 - 2009**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Security - Body

- **Discovery 3 (L319)**
- Discovery 4 (L319) 2010
- Range Rover (L322) 2010
- **Range Rover Sport (L320) 2006 - 2010**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Security - VIM

- Discovery 4 (L319) 2010
- Range Rover (L322) 2006 - 2010
- **Range Rover Sport (L320) 2010**

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Menus - Steering Angle Sensor (SAS)

SAS

- Range Rover (L322) 2002 - 2005
- Range Rover (L322 - Diesel Only) 2006

Read Faults / DTCs
Clear Faults / DTCs
SAS Calibration

SAS

- Discovery 3 (L319)
- Range Rover (L322 - Petrol Only) 2006
- Range Rover (L322) 2007 - 2009
- Range Rover Sport (L320) 2006 - 2009

Read Faults / DTCs	
Clear Faults / DTCs	
Configuration	SAS Calibration
ECM Data	

SAS

- Freelander 2 (L359)
- Range Rover (L322) 2010

Read Faults / DTCs
Clear Faults / DTCs
ECM Data

Appendix A: Menus

Menus - Service Reset

Service Reset

- **Freelander 2 (L359)**
- **Range Rover (L322) 2006 - 2010**
- **Discovery 3 (L319)**
- **Discovery 4 (L319)**
- **Range Rover Sport (L320) 2006 - 2010**

Service Reset

Service Reset

- **Range Rover (L322) (2002 - 2005)**

Oil Reset
Distance Reset
Time Reset

Menus - Electronic Parking Brake (EPB)

EPB

- **Discovery 3 (L319)**
- **Discovery 4 (L319)**
- **Range Rover (L322) 2007 - 2010**
- **Range Rover Sport (L320) 2006 - 2010**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Service Brakes	Unjam EPB
	Mounting Position
	Latching Position
	Long. Accel. Calib.
ECM Data	

Appendix A: Menus

Menus - Fuel-Burning Heater

Fuel-Burning Heater

- **Range Rover (L322) 2002 - 2009**

Read Faults / DTCs	
Clear Faults / DTCs	
Live Data	
Actuators	Everything Off
	Water Pump On
	Air Fan Full Load
	Glow Plug On
	Dosing Pump On
	Aircon Fan On
FBH On	
ECM Data	

Fuel-Burning Heater

- **Freelander 2 (L359)**
- **Discovery 3 (L319)**
- **Discovery 4 (L319)**
- **Range Rover (L322) 2010**
- **Range Rover Sport (L320) 2006 - 2010**

Read Faults / DTCs
Clear Faults / DTCs
Live Data
ECM Data

Menus - Global DTC Clear

Global DTCs

- **Discovery 4 (L319)**
- **Range Rover (L322) 2010**
- **Range Rover Sport (L320) 2010**

Global DTCs clear

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