

LAND ROVER



UNLOCKING TECHNOLOGY



**ADVANCED
DIAGNOSTICS**



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APPLICATIONS

A

LAND ROVER (ADS106)



				1234		PRO 		AD100 
CLASSIC RANGE ROVER (10AS)	2003 - 2006	x	✓	x	x	ADC151	A	ADC110-B
DEFENDER (10AS)	1997 - 2010	x	✓	x	x	ADC151	A	ADC110-B
DISCOVERY I (5AS)	1996	x	✓	x	x	ADC151	A	ADC110-B
DISCOVERY II (10AS)	1997 - 1999	x	✓	x	x	ADC151	A	ADC110-B
FREELANDER (10AS)	1997 - 2005	x	✓	x	x	ADC151	A	ADC110-B
MEMS 1.9		x	x	x	x	ADC151	A	ADC110-B
MEMS 2J		x	x	x	x	ADC151	A	ADC110-B

LAND ROVER 2008 (ADS164) *



				1234		PRO 		AD100 
DISCOVERY II (BARCODE)	1999 - 2005	x	✓	x	x	ADC151	A/D	x
DISCOVERY III (CAN TYPE 2)	2005 ⇒	✓	✓	x	x	ADC151	E	x
FREELANDER (SAWDOC)	2003 - 2006	✓	x	x	x	ADC151	A	x
FREELANDER 2 (CAN TYPE 1)	2006 ⇒	✓	✓	x	x	ADC151	A	x
RANGE ROVER (SAWDOC)	2005 - 2006	✓	x	x	x	ADC151	A	x
RANGE ROVER (CAN TYPE 3)	2006 ⇒	✓	✓	x	x	ADC151	E	x
RANGE ROVER SPORT (CAN TYPE 2)	2006 ⇒	✓	✓	x	x	ADC151	E	x
RANGE ROVER VOGUE	2006 ⇒	✓	✓	x	x	ADC151	E	x

* PRO ONLY

DIAGNOSTIC SOCKETS/PORTS

B

LANDROVER



DISCOVERY 1



RANGE ROVER



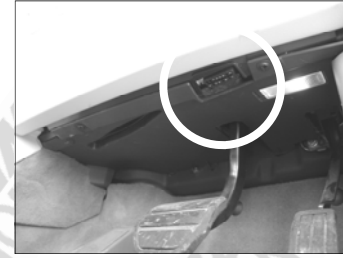
FREELANDER



DEFENDER



DISCOVERY 2



RANGE ROVER SPORT

WWW.ADVANCED-DIAGNOSTICS.CO.UK

WWW.ADUSA.US

GENERAL OPERATION

LANDROVER 10AS SYSTEM

The 10AS Alarm system was fitted as standard equipment on Model Year 96 onwards across a number of Land Rover vehicles. The system consists of a number of components as follows :-

- ECU Alarm Unit
- Plip Key
- Passive Immobiliser Coil (Optional)
- Alarm sensor (Optional)
- Central Door Locking Actuators
- Bonnet Switch (Optional)
- Driver's Door Key Switch
- Door Switches
- Boot Door Switch
- Hazard Lights
- Battery Backed up Alarm Sounder (Optional)
- Alarm Sounder and Relay (Optional)
- Alarm LED and Engine Immobiliser Lamp (Instrument Cluster)
- Engine Immobiliser ECU

The 10AS offers a number of protection functions including Perimetric protection, Engine immobilisation (Crank Inhibit), Engine Immobilisation (ECU Inhibit) and ultrasonic protection within the vehicle passenger compartment.

Central locking is also controlled by the 10AS Alarm system. The vehicle can be locked using the key, Door Locking button or Plip key. The vehicle can only be unlocked using the Plip key or the emergency access code (EKA).

PERIMETRIC PROTECTION

This part of the system is enabled whenever the vehicle is manually locked using the drivers door key.

VOLUMETRIC PROTECTION

This part of the system is only activated using the Plip Key, which enables protection for the bonnet, boot and ignition switch. Also the internal Alarm sensor is activated.

ALARM SOUNDER

If the vehicle is detected as having an unauthorized access, the alarm sounder and hazard lights will start for around 30 seconds. The alarm must be triggered again before the sounder and hazards will start. There are two sounders used, normal sounder and battery back up sounder.

The battery backed up sounder is charged via the ignition feed, and if disconnected or wires cut it will operate for approximately 3 minutes. To disconnect the battery backed up sounder follow the following procedure :-

1. Turn Ignition ON, Turn Ignition OFF
2. Disconnect Sounder within 15 seconds
3. If Triggered, Re-connect.
4. Disarm Alarm system
5. Turn Ignition on and repeat steps above.

INERTIA SWITCH

The inertia switch has been incorporated into the alarm system to activate the central locking mechanism's if the vehicle is involved in an accident.

ENGINE IMMOBILISER (Optional)

When the alarm system is armed, the Passive Immobilisation function is enabled. Two types of immobilisation are used :-

1. Electronic Engine Immobiliser (Used on MFI-T16 and 300TDi with EDC engines)

This system is controlled by the Engine Management ECU and the Alarm ECU. When the vehicle is immobilised, the alarm ECU sends a signal to the EMS ECU which prevents starting, and until it receives a de-immobilise signal it will not start.

2. Remote Smart Spider (Used on MFI-T16 and 300TDi without EDC engines)

This system is controlled by the alarm ECU and the Engine immobilisation ECU (Spider).

The alarm ECU sends a signal to the spider ECU to disable vehicle start, which then interrupts the starter circuit, fuel pump circuit and ignition coil (If fitted) or the fuel pump shut off solenoid in the case of the 300TDi engine (without EGR).

NOTE : The vehicle can only be started using the Plip key or the EKA code.

GENERAL OPERATION

LANDROVER 10AS SYSTEM

PASSIVE IMMOBILISER

The immobiliser system will be enabled when the following conditions apply :-

- 30 seconds after ignition is switch off and drivers door has been opened.
- 5 minutes after ignition is switched off.
- 5 minutes after disarming the alarm system.

PASSIVE IMMOBILISER COIL

A coil is mounted in the steering column which sends a magnetic field which is picked up by the plip key, and if received, it sends a signal to the alarm ECU to immobilise the vehicle.

VEHICLE STATUS INDICATION

The vehicle status is indicated by the Alarm LED as follows :-

- Slow flash - Immobilised or Armed and Immobilised
- Rapid Flash - Internal sensor system armed
- Intermittent Rapid Flash - Doors, Boot and Bonnet armed
- No flash for 10 seconds - Miss lock
- Continuous - Drivers door open or ignition on and system immobilised

PLIP KEY RESYNCHRONISATION

Procedure.

1. Unlock the drivers door using the key.
2. Ensure all doors, bonnet and boot are shut, and if Central Locking is fitted, make sure both front doors are unlocked.
3. Press the Plip key (Lock button) four times quickly, until the vehicle locks are enabled.

PLIP KEY LOW BATTERY WARNING

When the Plip key battery is low, the alarm unit will enter low battery mode. The alarm LED will flash to indicate low battery, and also the hazard lights will not flash when the alarm is disarmed.

POWER UP MODE

The alarm will always power back up in the mode it was disabled. So if the battery is disconnected and the alarm is activated, then it will remember and when e-connected will enter the same state.

EMERGENCY ACCESS CODE

If the Plip key is lost or does not function, the emergency access code can be used to override the system as follows :-

1. Using the code turn the key to the unlock the number of times of the first digit.
2. Now turn the key to the lock position the number of times of the second digit.
3. Repeat for the last two digits.

After the code has been entered, turn the key to the unlock position, and check to see whether the Alarm LED has stopped flashing, and the engine will start.

If the wrong code has been entered a warning sound will be heard. After 3 wrong attempts a period of 30 minutes must pass before the next attempt is made. If a mistake is made part way through, hold the key in the lock position for at least 5 seconds and then begin the code entry again.

GENERAL OPERATION

LANDROVER 27VT SYSTEM

The 27VT and BCM (Body Control Module) is a sophisticated alarm system and central locking control, which has a number of associated components that make up the system, which includes :-

- Remote Handset (Plip Key)
- RF Receiver
- Passive Coil
- Volumetric sensor
- Door Lock actuators
- Drivers door key barrel
- Central door key barrel
- Central Door Locking switch (CDL)
- Door switches
- Tail door switch
- Bonnet switch
- Horn
- Alarm LED
- Starter Relay
- Inertia switch
- Engine Immobilisation

CENTRAL LOCKING

The vehicle can be locked in three ways, Central Door locking switch (CDL), vehicle key or remote Plip key. The CDL switch is located inside the vehicle, normally in the centre console. This allows the locks to be operated without arming the alarm system. If the inertia switch is operated, then the CDL is overridden and the locks are opened automatically.

The vehicle can be CDL locked by using the key in the drivers door. Turning the key anti-clockwise will lock all the doors, turning the key a second time will super lock the doors (Note second turn must be within 1 second of the first turn).

If the vehicle has an alarm and is CDL locked or super locked, turning the key clockwise will only mechanically unlock the drivers door. The system then enters EKA access mode.

If the vehicle has no alarm system, then turning the key clockwise once will open all doors. If the vehicle is super locked then the drivers door will open, and a second turn of the key will open the other remaining doors. If the remote control unit is used to unlock the vehicle, pressing the unlock button once will unlock the drivers door only, pressing the button for the second time makes all other doors will unlock.

INERTIA SWITCH

The inertia switch is located within the engine bay, on the bulkhead. With the ignition ON and the alarm disarmed, if the switch is operated then all the doors will be unlocked. Further locking of all doors is disabled until the ignition is switched off and the drivers door opened and closed or the drivers door opened and closed and the switch is manually reset by pressing the button.

ALARM/IMMOBILISATION—KEY OPERATION

The alarm system can be armed and disarmed with an EKA code, which can be used if the Plip key is lost or becomes faulty. The system has a number of components which control different alarm functions. These include Volumetric which monitors movement within the passenger compartments, in case of possible intrusion. The second is perimetric sensing which uses switches on all doors, bonnet, roof and tail door.

Arming and disarming using the vehicle key will be ignored if the ignition is already in the ON state. In certain countries the alarm is programmed not to arm under any circumstance, and the key only unlocks the mechanical lock.

The alarm can be fully armed by turning the key anticlockwise once with all doors closed. The hazard warning lights should flash 3 times. The alarm LED will flash very fast for 10 seconds and then slowly. If the key is turned for a second time within 1 second of the first turn the system will be super locked, and the alarm LED will flash for 10 seconds and then flash slowly.

To disarm the system with the key, the EKA code must be entered using the sequence described later in this section.

ALARM/IMMOBILISATION—REMOTE PLIP KEY

The vehicle can be fully armed and disarmed using the plip key. If the vehicle is locked using the plip key lock button, the system is super locked and the alarm LED and hazard lights will flash as described above.

GENERAL OPERATION

LANDROVER 27VT SYSTEM

BATTERY BACKED UP SOUNDER (BBUS)

This system is not fitted to all vehicles, but when fitted is mounted above the wheel arch liner on the drivers side. If the system is tampered with the BBUS will sound, and will only stop if the power is re-connected and the system armed and disarmed. It also sounds when the system is miss-locked. The battery life of the unit is around 3 years.

EMERGENCY ACCESS CODE (EKA)

The EKA code allows arming and disarming of the alarm system when the remote key fob (Plip) is lost or broken. If the vehicle is opened without using the EKA code, then the alarm system enters the following states :-

- Drivers door is unlocked, other doors remain locked.
- Alarm LED flashes slowly
- Perimetric protection is de-activated
- Volumetric protection is de-activated
- Engine and crank functions remain disabled.

The EKA code is a four number code, and each number can be up to 15. This code is entered by turning the drivers door lock to the numbers of the code.

Procedure for 5-2-9-14

1. Turn the key to the unlock position and wait for 6 MINUTES before proceeding.
2. Turn the key to the unlock position 5 times.
3. Turn the key to the lock position 2 times.
4. Turn the key to the unlock position 9 times.
5. Turn the key to the lock position 14 times.
6. Finally turn the key to the unlock position once only.

If entered correctly the alarm system will unlock all the doors, fully disarm all systems and allow the vehicle to be started.

If the code is entered incorrect 3 times the system will lock out any further attempts for 30 minutes. If a code is entered incorrectly, then the system can be reset by opening and closing the drivers door, or turning the ignition on and off.

REMOTE HANDSET (PLIP KEY)

Two plip keys are supplied with the vehicle from new, and if the battery is replaced or the vehicle battery is removed the plip keys will require synchronisation. This is achieved by switching on the ignition, which enables the alarm system to send a re-synchronisation code to the handset automatically. Alternatively it can also be achieved by pressing either handset button 5 times quickly with the ignition OFF.

If the plip key battery is low, then when the signal is sent from the plip key the alarm will send a signal which sounds a buzzer for 10 seconds and the alarm LED flashes for 10 seconds to notify the owner.

ENGINE IMMOBILISATION

The engine immobiliser feature disables the starter relay and also the enable code sent to the MEMS engine management ECU. The passive immobilisation occurs 5 seconds after the ignition is turned off and the drivers door opened. If the ignition is just turned off then it will immobilise after 5 minutes. Re-immobilisation will occur if the plip key unlock button is pressed or the key is inserted and ignition turned on with the Plip key within 70 mm of the ignition lock. If 2 hand sets are in close proximity it will not re-immobilise because of interference.

SPECIAL FUNCTIONS

LANDROVER - SAWDOC

PROGRAM KEYS

VEHICLE SELECTION

- + HYUNDAI
- + ISUZU
- + JEEP
- + KIA
- + LANDROVER
- + MITSUBISHI

PROGRAM KEYS

ECU IDENTIFICATION
LANDROVER SAWDOC

PRESS ENTER KEY

PROGRAM KEYS

ERASE KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

VEHICLE SELECTION

- + IMMOBILISER
- + REMOTE

DIAGNOSTIC MENU

- ECU IDENTIFICATION
- SPECIAL FUNCTIONS

DIAGNOSTIC MENU

- KEY INFORMATION
- PROGRAM KEYS
- ERASE KEYS
- ECU LEARN/RESET

VEHICLE SELECTION

- + FREELANDER
- + FREELANDER 2
- + RANGE ROVER
- + DISCOVERY 3
- + RANGE ROVER SPORT

PRESS ENTER KEY

DIAGNOSTIC MENU

- KEY INFORMATION
- PROGRAM KEYS
- ERASE KEYS
- ECU LEARN/RESET

PROGRAM KEYS

INSERT PROGRAMMED
KEY

PRESS ENTER KEY

VEHICLE SELECTION

- + FREELANDER
- + FREELANDER 2
- + RANGE ROVER
- + DISCOVERY 3
- + RANGE ROVER SPORT

PRESS ENTER KEY

KEY INFORMATION

KEY 2 : KEY ENABLED

KEY 1 : ENABLED
KEY 2 : ENABLED
KEY 3 : ENABLED
KEY 4 : ENABLED

PROGRAM KEYS

REMOVE KEY FROM IGN.

PRESS ENTER KEY

VEHICLE SELECTION

2003 > 2005

DIAGNOSTIC MENU

- KEY INFORMATION
- PROGRAM KEYS
- ERASE KEYS
- ECU LEARN/RESET

PROGRAM KEYS

INSERT NEW KEY
SWITCH IGNITION ON

PRESS ENTER KEY

PLEASE WAIT
TRYING TO COMMUNICATE

ERASE KEYS

WARNING
ALL KEYS WILL
BE CLEARED
CONTINUE

OK = ENTER BACK = EXIT

ERASE KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

SPECIAL FUNCTIONS

LANDROVER - 27VT & 10AS

PROGRAM REMOTES

VEHICLE SELECTION

+ HYUNDAI
 + ISUZU
 + JEEP
 + KIA
 + LANDROVER
 + MITSUBISHI

VEHICLE SELECTION

+ IMMOBILISER
 + REMOTE

VEHICLE SELECTION

+ FREELANDER
 + FREELANDER 2
 + RANGE ROVER
 + DISCOVERY 3
 + RANGE ROVER SPORT

PRESS ENTER KEY

SWITCH IGNITION ON

PRESS ENTER KEY

ECU IDENTIFICATION

PRODUCT CODE : 11
 DIAG VERS : 1270
 S/W VERSION : 00
 HARDW VERS : 00
 ECU NO : 000

PRESS ENTER KEY

DIAGNOSTIC MENU

ECU IDENTIFICATION
 SPECIAL FUNCTIONS

PROGRAM REMOTES

DIAGNOSTIC MENU

PROGRAM REMOTE
 READ EKA CODE

READ EKA CODE

UNLOCK 2 TURNS
 LOCK 4 TURNS
 UNLOCK 6 TURNS
 LOCK 3 TURNS

PRESS ENTER KEY

DIAGNOSTIC MENU

PROGRAM REMOTE
 READ EKA CODE

PROGRAM REMOTE

PRESS REMOTE UNLOCK
 AT LEAST 8 TIMES
 UNTIL THE HORN SOUNDS
 OR LIGHTS FLASH

KEYS PROGRAMMED : 1
 PRESS BACK TO EXIT
 ENTER-PROG. MORE KEYS

SPECIAL FUNCTIONS

LANDROVER - DISCOVERY 2 BARCODE

PROGRAM REMOTES

VEHICLE SELECTION

- + HYUNDAI
- + ISUZU
- + JEEP
- + KIA
- + LANDROVER
- + MITSUBISHI

PROGRAM REMOTES

ECU IDENTIFICATION

SW VERSION : 34.325
HARDW VERS. : 1.1

PRESS ENTER KEY

PROGRAM REMOTES

PROGRAM REMOTE

REMOVE KEY FROM IGN.

PRESS ENTER KEY

VEHICLE SELECTION

- + IMMOBILISER
- + REMOTE

DIAGNOSTIC MENU

- ECU IDENTIFICATION
- SPECIAL FUNCTIONS

PROGRAM REMOTE

SELECT REMOTE SLOT

1	2	3	4	5
6	7	8	9	0

VEHICLE SELECTION

- + DEFENDER
- + DISCOVERY I
- + DISCOVERY II
- + FREELANDER
- + RANGE ROVER CLASSIC

PRESS ENTER KEY

DIAGNOSTIC MENU

- PROGRAM REMOTE
- REMOTE INFORMATION

PROGRAM REMOTE

1	2	3	4	5
6	7	8	9	0

VEHICLE SELECTION

- 99
- 97-99
- 99-01

PRESS ENTER KEY

REMOTE INFORMATION

PRESS REMOTE TO ID

PRESS ENTER KEY

SECURITY CODE

G4074C34074C2FFJ

X

✓

SWITCH IGNITION ON

PRESS ENTER KEY

REMOTE INFORMATION

REMOTE NO 1

PRESS ENTER KEY



PLEASE WAIT
TRYING TO COMMUNICATE

DIAGNOSTIC MENU

- PROGRAM REMOTE
- REMOTE INFORMATION

NOTE : FIRST INSERT THE TOP BARCODE.
THEN PUT THE BOTTOM BAR CODE IN AS FOLLOWS.

SPECIAL FUNCTIONS

LANDROVER - DISCOVERY 2 BARCODE

PROGRAM REMOTES

PROGRAM REMOTE

1	2	3	4	5
6	7	8	9	0

SECURITY CODE

FFFFFFFFBF8B3CB

✘

✔

ERASE KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

NOTE : THE BAR CODE CAN BE
MADE UP OF ANY CHARACTERS
INCLUDING %, \$, : , ; AS AN
EXAMPLE.

SPECIAL FUNCTIONS

LANDROVER - DISCOVERY 3 CAN 2

PROGRAM KEYS

VEHICLE SELECTION

- + IMMOBILISER
- + REMOTE

PROGRAM KEYS

DIAGNOSTIC MENU

PROGRAM KEYS

PROGRAM KEYS

PROGRAM KEYS

INSERT NEXT KEY
TO BE PROGRAMMED
IGNITION OFF

VEHICLE SELECTION

- + FREELANDER
- + FREELANDER 2
- + RANGE ROVER
- + DISCOVERY 3
- + RANGE ROVER SPORT

PRESS ENTER KEY

PROGRAM KEYS

IGNITION OFF

PRESS ENTER KEY

PROGRAM KEYS

BACK TO EXIT
ENTER TO PROGRAM
NEXT KEY

SWITCH IGNITION ON

PRESS ENTER KEY

PROGRAM KEYS

REMOVE KEY

PRESS ENTER KEY

ERASE KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

PLEASE WAIT
TRYING TO COMMUNICATE

PROGRAM KEYS

INSERT SAME KEY
IGNITION OFF

PRESS ENTER KEY

ECU IDENTIFICATION

LANDROVER TYPE 2

PRESS ENTER KEY

PROGRAM KEYS

BACK TO EXIT
ENTER TO PROGRAM
NEXT KEY

DIAGNOSTIC MENU

- ECU IDENTIFICATION
- SPECIAL FUNCTIONS

PROGRAM KEYS

REMOVE KEY

PRESS ENTER KEY

SPECIAL FUNCTIONS

RANGE ROVER SPORT CAN TYPE 3

PROGRAM KEYS

VEHICLE SELECTION

- + IMMOBILISER
- + REMOTE

PROGRAM KEYS

DIAGNOSTIC MENU

PROGRAM KEYS

PROGRAM KEYS

PROGRAM KEYS

INSERT NEXT KEY
TO BE PROGRAMMED
IGNITION OFF

VEHICLE SELECTION

- + FREELANDER
- + FREELANDER 2
- + RANGE ROVER
- + DISCOVERY 3
- + RANGE ROVER SPORT

PRESS ENTER KEY

PROGRAM KEYS

IGNITION OFF

PRESS ENTER KEY

PROGRAM KEYS

BACK TO EXIT
ENTER TO PROGRAM
NEXT KEY

SWITCH IGNITION ON

PRESS ENTER KEY

PROGRAM KEYS

REMOVE KEY

PRESS ENTER KEY

ERASE KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

PLEASE WAIT
TRYING TO COMMUNICATE

PROGRAM KEYS

INSERT SAME KEY
IGNITION OFF

PRESS ENTER KEY

ECU IDENTIFICATION

LANDROVER TYPE 2

PRESS ENTER KEY

PROGRAM KEYS

BACK TO EXIT
ENTER TO PROGRAM
NEXT KEY

DIAGNOSTIC MENU

- ECU IDENTIFICATION
- SPECIAL FUNCTIONS

PROGRAM KEYS

REMOVE KEY

PRESS ENTER KEY

SPECIAL FUNCTIONS

LANDROVER FREELANDER2 CAN TYPE 1

PROGRAM KEYS

VEHICLE SELECTION

- + IMMOBILISER
- + REMOTE

PROGRAM KEYS

DIAGNOSTIC MENU

- PROGRAM KEYS
- RESET ECU

PROGRAM KEYS

PROGRAM KEYS

- BACK TO EXIT
- ENTER TO PROGRAM
- NEXT KEY

VEHICLE SELECTION

- + FREELANDER
- + FREELANDER 2
- + RANGE ROVER
- + DISCOVERY 3
- + RANGE ROVER SPORT

PRESS ENTER KEY

RESET ECU

THIS FUNCTION IS USED WHEN ALL KEYS ARE LOST

PRESS ENTER KEY

ERASE KEYS

PROCEDURE COMPLETE

PRESS ENTER KEY

SWITCH IGNITION ON

PRESS ENTER KEY

RESET ECU

WARNING ALL EYS WILL BE CLEARED CONTINUE

OK=ENTER CLEAR=BACK

PLEASE WAIT TRYING TO COMMUNICATE

RESET ECU

REMOVE KEY

PRESS ENTER KEY

ECU IDENTIFICATION

FREELANDER 2

PRESS ENTER KEY

RESET ECU

INSERT KEY TO BE PROGRAMMED

PRESS ENTER KEY

DIAGNOSTIC MENU

- ECU IDENTIFICATION
- SPECIAL FUNCTIONS

PROGRAM KEYS

IGNITION ON

PRESS ENTER KEY

REMOTE PROGRAMMING



Land Rover 1996 (single Button oval shape)

1. Ensure ignition is OFF, doors unlocked, bonnet switch closed.
2. Ensure procedure from 3 to 9 is completed within 8 seconds.
3. Switch Ignition ON
4. Switch Ignition OFF
5. Lock Doors and Unlock Doors
6. Release Bonnet Switch
7. Switch Ignition ON
8. Switch Ignition OFF

If alarm is set, horn will sound and LED light. Now programming of plips can be completed.

10. Press and hold down button on Plip until LED flashes.
11. Repeat for additional plips.
12. The Dash LED will extinguish if both plips have been programmed successfully.

Range Rover (03 to 06)

1. Ensure all doors are unlocked & front doors are closed.
2. Turn ignition to position 1 and back in less than 5 secs.
3. Program first key within 30 sec.
 - Remove key from ignition switch.
 - Press & hold Unlock button for max of 15 secs
 - During this time, press Lock button 3 times.
 - release both Lock & unlock buttons
 - If programming the doors will lock then unlock.
4. Repeat steps 2-3 for all remotes.

- Notes:
- a. All remotes must be programmed at the same time.
 - b. A maximum of 4 remotes can be programmed

Procedure for 2002 models (BMW remote in key)

1. With the doors shut and from inside the vehicle.
2. Turn ignition to position 1 and back to off within 5 seconds
3. Remove key from ignition and press and hold the unlock button (has an arrow on it) for 15 seconds during this time press the key lock button (has Land Rover logo) 3 times within 5 seconds
4. Release both buttons
5. Doors will lock and unlock to show correct programming has occurred

Range Rover 2003 MY

Unlock vehicle, close all doors.

Turn ignition from 0 to I and back to 0 in less than 5 seconds - this puts the GEM module into initialization mode. You now have 30 secs to program the remote.

Remove key from ignition switch.

Press and hold the unlock button and within 15 seconds briefly press the lock button 3 times.

Release both buttons.

If this procedure works the GEM will lock and unlock the doors.

Repeat the button pressing procedure for each additional remote.

Max remote number is 4.

Range Rover P38

Make sure the doors, windows and bonnet are closed, get out and lock the car with the key. Now insert the EKA code

1. To enter the first digit, turn the key the required number of times to the unlock position.
2. To enter the second digit, turn the key the required number of times to the lock position.
3. To enter the third digit, turn the key the required number of times to the unlock position.
4. To enter the fourth digit, turn the key the required number of times to the lock position.

Once the EKA code has been accepted press and hold either of the remote control buttons to code the remote – the door locks should cycle to confirm this.

TIPS & HINTS



FREELANDER

Lost Key Situation

- 1) Insert the key (even though it gets rejected) Press the start button. This will wake up the vehicle enough to establish communication.
- 2) Connect the AD100 PRO and select Freelander 2.
- 3) Use the PROGRAM VIRGIN KEYS to add all the new keys.

Adding New Keys

- 1) Use working Key to switch ignition on.
- 2) Connect the AD100 PRO and select Freelander 2.
- 3) Use the PROGRAM VIRGIN KEYS function to get the vehicle to recognise the new keys. These keys will now be retained in the ignition slot.
- 4) Use the PROGRAM KEYS function to program all the keys (new & existing) required for this vehicle. Any keys not programmed during this sequence will be erased.

Erase Lost Keys

- 1) Use working Key to switch ignition on.
- 2) Connect the AD100 PRO and select Freelander 2.
- 4) Use the PROGRAM KEYS function to program all the keys required for this vehicle. Any keys not programmed during this sequence will be erased.

DISCOVERY 2 EKA ENTRY.

There are three configurations for emergency key access:
 EKA not active (no immobiliser fitted).
 EKA active.
 EKA with super locking on receiving good passive remobilisation exciter coil signal.

The code is recorded on the security information card and is entered as follows:

- 1 Using the key, turn the driver's door lock to the UNLOCK position and hold in this position for at least 5 seconds. An audible warning is then emitted to indicate that the body control unit is ready to accept the code. Return the key to the centre position. It is now possible to use the key to enter the separate numerical values of the four digits that make up the EKA code.
- 2 Enter the first digit of the code. If the first digit is 4, turn the key to the UNLOCK position 4 times. Ensure the key is fully returned to the centre position after each turn of the key.
- 3 Enter the second digit of the code. If the second digit is 3, turn the key to the LOCK position 3 times. Ensure the key is fully returned to the centre position after each turn of the key.
- 4 Enter the third digit of the code. If the third digit is 2, turn the key to the UNLOCK position twice. Ensure the key is fully returned to the centre position after each turn of the key.
- 5 Enter the fourth digit of the code. If the fourth digit is 1, turn the key to the LOCK position once. Ensure the key is fully returned to the centre position after each turn of the key.
- 6 Finally, turn the key to the UNLOCK position and back to the centre position, a double bleep will indicate that the code has been entered correctly. A single bleep indicates that the code has been entered incorrectly. Then, before opening the door, wait 5 minutes for the alarm and immobiliser to be de-activated. During the 5 minute wait for the alarm and immobiliser to be de-activated, the alarm indicator LED in the instrument pack continues to flash (one flash every 2 seconds). DO NOT OPEN THE DOOR OR ATTEMPT TO ENTER THE CAR until the full delay period has elapsed.
- 7 When the 5 minute wait has elapsed, the alarm indicator LED stops flashing. Immediately open the door, insert the key in the ignition switch and turn the switch to position II. If the ignition switch is not turned to position II within 30 seconds of the end of the 5 minute wait, the engine is automatically immobilised again.
- 8 The EKA code will not be recognised if there is an interval of 10 seconds or more between key turns or if the key is held turned for 5 seconds or more during the procedure.
 In some system configurations a successful EKA code entry is indicated by the audible warning device pulsing twice for a period of 50 ms on, 200 ms off. The theft deterrent LED is switched on for 1 second, all doors unlock, the alarm disarms and the vehicle is remobilised allowing the engine to start.
 If an incorrect code is entered, an audible warning is emitted and the procedure must be repeated. Up to a maximum of 10 attempts to enter the code is possible. After 10 attempts, the BCU will not allow any further codes to be entered for a period of 10 minutes



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