Abritus 72 Ltd

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VAG K2 device

User Manual

Version:

4.0

issued by:

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List of Revisions			
Date	**Chapter**	**Description**	**Revision**
11-01-2002		Initial edition (VAG device)	1.0
14-03-2003		Added function for bypass of immobilizer of EDC15	2.0
20-09-2005		Functionality adjusted to the new edition VAG K device	3.0
07-01-2008		VAG K2 device and its functionality	4.0

1 INTRODUCTION

THANK YOU FOR CHOICING OUR PRODUCTS! YOU REALLY HAVE A TOOL WHICH WILL HELP IN YOUR WORK. USING OUR EQUIPMENT YOU WILL NOT NEED ANYMORE TO LOOKING FOR DIFFERENT TOOLS AND TO INVEST MONEY.

1.1   Your VAG-K2 device

Your VAG-K2 device is equipped DIP switches numbered from 1 to 8 from where can be defined functionality of device.

Three LEDs – green, yellow and red indicates working of device.

Red led indicates that device is supplied with power from OBDII connector.

Green and yellow indicates that device working.

1.2   Features of VAG-K2 device

1. Programming of keys/transponders – 1,2,3 or 4 keys
2. Emergency start of the vehicles (without matched transponder/key) – applicable for vehicles before year 2002
3. Device can perform bypass of the immobilizer for vehicles equipped with engine control units from BOSCH:
- EDC15x – diesel engines - 1.9 TDI, 2.5 TDI
- ME7.x – petrol engines - 1.8, 2.0, 2.4, 2.6, 3.0, 3.5, 4.2

1.3   Application of VAG-K2 device

This device intended for locksmith workshops, auto services, racing teams.
Device can help us in many cases when some electronic control units in the vehicle not working proper and as result of its behavior disturbing starting of the engine. VAG-K2 device with its function to bypass immobilizer system will allow engine control unit to stop communication with remaining electronic control units in the vehicle and to allow start of engine in case of disturbance in CAN bus.

2   LIST OF COVERED VEHICLES FROM VAG-K2 DEVICE

2.1   *Function programming of new key/transponder*

Model	Year
Audi A2	all years
Audi A3/S3	All up to 2003
Audi A4/S4/RS4	All up to 2007 (except 1997 UK-NSI)
Audi A6/S6/RS6	All up to 2004
Audi A8/S8 immobox	-1999/ 2002-2.5TDI
Audi Allroad	All up to 2004
Audi TT	All up to 2005
Seat Alhambra	all years
Seat Arosa	all years
Seat Cordoba	
Seat Ibiza VDO	up to 2007
Seat Leon	All up to 2004
Seat Toledo	All up to 2004
Skoda Octavia	all years
Skoda Praktik	all years
Skoda Roomster	all years
Skoda Fabia - A	all years
Skoda Superb	Up to 2007
VW Bora	all years
VW Golf 4	all years
VW Jetta	All up to 2004
VW Multivan/T5	all years
VW Passat B4	all years
VW Passat B5	all years
VW Polo A	2001 to 2007
VW Sharan	2000+
VW T4	NOT WORKING !!!
VW LT	2000+
VW Beetle	All up to 2005

2.2   Function emergency start of engine without programmed key/transponder

Model	Year
Audi A2	Up to 2001
Audi A3/S3	Up to 2001
Audi A4/S4/RS4	1997 to 2001 (except 1997 UK-NSI)
Audi A6/S6/RS6	1997 to 2001
Audi Allroad	1997 to 2001
Audi TT	1997 to 2001
Seat Toledo	up to 2002
Skoda Octavia	up to 2002
Skoda Praktik	all years
Skoda Roomster	all years
Skoda Superb	up to 2002
VW Bora	up to 2002
VW Golf 4	up to 2002
VW Jetta	up to 2002
VW Passat B4	up to 2002
VW Passat B5	up to 2002
VW Beetle	up to 2000

2.3 Function bypass of immobilizer

Applicable for vehicles with engine control units from BOSCH – 1.4TDI/SDI, 1.9TDI/SDI, 2.5TDI, 1.8, 2.0, 2.4,……

Model	Year
Audi A2	2000 and up
Audi A3/S3	2000…2003
Audi A4/S4/RS4	2000…2004
Audi A6/S6/RS6	2000…2004
Audi A8/S8 immobox	2001..2003
Audi Allroad	2000…2005
Audi TT	2001…2007
Seat Alhambra	2000+
Seat Ibiza VDO	2000+
Seat Leon	2000+
Seat Toledo	2000+
Skoda Octavia I	2000+
Skoda Praktik	2000+
Skoda Roomster	2000+
Skoda Fabia	2000+
Skoda Superb	2000+
VW Bora	2001+
VW Golf 4	2001+
VW Jetta	2001+
VW Passat B4	2000+
VW Passat B5	2000+
VW Polo A	2000 to 2007
VW Sharan	2000+
VW T4	2000+
VW LT	2000+
VW Beetle	2001+

3   IMMOBILIZER SYSTEMS DESCRIPTION

Here in short are described different conceptions for operating of immobilizer module assembled in vehicles from VAG. Need from this short description is because of proper understanding functionality of VAG-K2 device.

3.1   Immobilizer system 1

Vehicles with immobilizer system one can meet between years 1995 to 1997. Typical for these vehicles is that immobilizer control units are separate electronic control units. In most cases these units are known like "white immobox", "black immobox" and s.o.
Immobilizer system 1 using simple transponders with fixed identification programmed inside.

3.2   Immobilizer system 2

System 2 is similar to system one but with higher security level in the communication between immobilizer and engine control units.
System 2 we can meet in years 1997 to 2001. In many cases in vehicles from system 2 group immobilizer module is integrated in instrument panel cluster (dashboard). But we can meet also vehicles with external immobilizer control unit (VW Polo, VW Sharan and s.o.)

3.3   Immobilizer system 3

Next security step is Immobilizer system 3. Main feature of this system is usage of "crypto" transponders. "Crypto" transponders using encrypted communication between transponder and immobilizer unit. System 3 we can meet in years 2000 and up.

3.4   Immobilizer system 4 and higher

With small exceptions immobilizer system 4 using transponders/keys which are preliminary programmed for concrete vehicle. By this reason for these vehicles must be used transponders ordered from dealer of vehicle or from our company. System 4 immobilizers are present from year 2003.

4   LITTLE BIT ABOUT ENGINE CONTROL UNITS EDC15, EDC16, ME7 AND VEHICLES EQUIPPED WITH THESE ELECTRONIC CONTROL UNIS

With introducing of immobilizer system 3 vehicles becomes equipped with engine control units EDC15, EDC16, ME7. All of these engine control units storing in its internal memory security access code (PIN) for programming of keys. In automatic mode your VAG-K2 device extract security access code (PIN) from the memory of these units. Using configuration of switches you can suppress extracting from engine control unit and to redirect device to extract code for programming of keys from instrument cluster or immobilizer.
Usually all diesel vehicles after 2000 year are equipped with engine control units type EDC15 or EDC16.
EDC15 type is in vehicles 1.4TDI/SDI, 1.9TDI/SDI, 2.5 TDI/SDI. Please take care that 3.3TDI engine used in Audi A8 is not EDC15 type!
ME7 type is in gasoline vehicles usually 1.8, 2.0, 2.4, 2.6, …, 4.2

5   USAGE OF VAG-K2 DEVICE

As was mentioned above VAG-K2 device have following main functionalities:
- bypass of immobilizer
- programming of keys
- emergency start of vehicle

Before usage of VAG K2 device you must set device in the working mode needed for you.
For setting of working mode are intended switches number 4 and 5.

5.1   Programming of keys/transponders

To activate functions for programming of keys switch number 5 should be ON and SW4 should be OFF.
In this mode from DIP switches 1 and 2 can be adjusted amount of keys which will be programmed.
From switches 3,6 and 7 can be additionally defined working mode of device (when these switches are OFF device working in automatic mode).
Amount of keys for programming you can define like is described in the table bellow:

SW1	SW2	Function
OFF	OFF	Device will program 1 key.
ON	OFF	Device will program 2 key.
OFF	ON	Device will program 3 key.
ON	ON	Device will program 4 key.

Additionally if you need from special functionality can be defined working mode from here:

SW3	SW6	SW7	Function
OFF	OFF	OFF	Device will work in automatic mode.
ON	OFF	OFF	Device will connect and extract security access code from instrument cluster. Extracting of security access code from the ECU will be skipped.
ON	ON	OFF	Device will connect and extract security access code from immobilizer box.

Procedure for usage of device in this mode is following:
1. Adjust switches depends your needs.
2. Turn ignition of the vehicle to ON
3. Put device in OBDII socket and wait until green and yellow LEDs becomes to blink simultaneously. If vehicle is diesel engine control unit turn ignition off for 2 seconds and then ON and wait until next simultaneously blinking of the LEDs.
4. Remove device from OBDII socket and turn ignition ON with all of the keys which you want to be programmed.

Note: VAG-K2 device always prefer extracting security access code for programming of keys from engine control unit. This can be suppressed by corresponding configuration of DIP switches – numbers 3,6 and 7.

5.2 Bypass of the immobilizer

To activate bypass functionality of device switch number 5 should be OFF and SW4 should be OFF.

In this mode if SW8 is ON device will perform bypass of the immobilizer otherwise will enable immobilizer.

DIP switches 6 and 7 in this mode also are applicable. Functionality of these switches is following:

SW6	SW7	Function
OFF	OFF	Device will work in automatic mode.
OFF	ON	Not applicable for VAG-K2 device.
ON	ON	Device will try directly connection with EDC15 engine control unit.
ON	OFF	Device will try directly connection with ME7x engine control unit.

Procedure for usage of device in this mode is following:

1. Adjust switches depends your needs. If for you is not quite clear type of engine control unit better is to put SW6 and SW7 to OFF – by this way device will try different type engine control units
2. Turn ignition of the vehicle to ON
3. Put device in OBDII socket and wait until green and yellow LEDs becomes to blink simultaneously
4. Remove device from OBDII socket. Turn ignition off for 3 sec.

Note:
Programming of keys/transponders is possible if immobilizer is enabled!

5.3   Emergency start of vehicle without learned key/transponder

To activate functions emergency start of vehicles you should put switch 5 to ON and SW4 to ON.
In this mode like in the key programming mode can be additionally defined working way of device:

SW3	SW6	SW7	Function
OFF	OFF	OFF	Device will work in automatic mode.
ON	OFF	OFF	Device will connect and extract security access code from instrument cluster. Extracting of security access code from the ECU will be skipped.
ON	ON	OFF	Device will connect and extract security access code from immobilizer box.

In this mode device extracting security access code (PIN) and enter it in immobilizer unit. As result many of the vehicles up to 2002 allowing start of the engine.

Procedure for usage of device in this mode is following:

1. Adjust switches depends your needs. If for you is not quite clear type of engine control unit better is to put SW6 and SW7 to OFF – by this way device will try different type engine control units
2. Turn ignition of the vehicle to ON
3. Put device in OBDII socket and wait until green and yellow LEDs becomes to blink simultaneously
4. Indication on instrument cluster about missing key stop blinking -> engine is ready for starting.

6 TABLES FOR FUNCTIONS OF VAG-K2 DEVICE DEPENDS SWITCHES CONFIGURATION

SW3	SW4	SW5	SW6	SW7	SW8	Mode	Function	Picture
OFF	OFF	OFF	OFF	OFF	**ON**	Bypass	Automatic detection of engine control unit and bypass of the immobilizer.	
OFF	OFF	OFF	OFF	OFF	OFF	Enable Immo	Automatic detection of engine control unit and enabling of the immobilizer.	
OFF	OFF	OFF	**ON**	**ON**	**ON**	Bypass	Connection with EDC15 engine control unit and bypass of the immobilizer.	
OFF	OFF	OFF	**ON**	**ON**	OFF	Enable Immo	Connection with EDC15 engine control unit and enabling of the immobilizer.	
OFF	OFF	OFF	**ON**	OFF	**ON**	Bypass	Connection with ME7 engine control unit and bypass of the immobilizer.	

SW3	SW4	SW5	SW6	SW7	SW8	Mode	Function	Picture
OFF	OFF	OFF	**ON**	OFF	OFF	Enable Immo	Connection with ME7 engine control unit and enabling of the immobilizer.	
OFF	OFF	**ON**	OFF	OFF	OFF	Key progr.	Automatic extracting of security access code (PIN) and key program. Amount of keys is defined from switches 1 and 2.	
ON	OFF	**ON**	OFF	OFF	OFF	Key progr.	Connection with instrument cluster, extracting of security access code (PIN) and key program. Amount of keys is defined from switches 1 and 2.	
ON	OFF	**ON**	**ON**	OFF	OFF	Key progr.	Connection with immobilizer, extracting of security access code (PIN) and key program. Amount of keys is defined from switches 1 and 2.	
OFF	**ON**	**ON**	OFF	OFF	OFF	Emergency mode	Automatic extracting of security access code (PIN).	

SW3	SW4	SW5	SW6	SW7	SW8	Mode	Function	Picture
ON	**ON**	**ON**	OFF	OFF	OFF	Emergency mode	Connection with instrument cluster, extracting of security access code (PIN).	
ON	**ON**	**ON**	**ON**	OFF	OFF	Emergency mode	Connection with immobilizer, extracting of security access code (PIN).	

7. ABBREVIATIONS AND TERMINOLOGY

ECU – Engine Control Unit
IMMO1 – Immobilizer system 1
IMMO2 – Immobilizer system 2
IMMO3 – Immobilizer system 3
IMMO4 – Immobilizer system 4
OBDII – diagnostic connector inside of the vehicle

Transponder
Electronic Control Unit
EDC15
ME7