VOLVO Immobilizer Manual

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- 2 Toothless knob anti-theft system
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- 3 <u>Semi intelligent/smart key anti-theft system</u>
 - 3.1<u>Model Coverage</u>
 - 3.2<u>Requirements</u>
 - 3.3<u>Procedure</u>

1. Introduction to VOLVO Immobilizer

You can add semi-intelligent or intelligent keys and lose all of them. You can replace CEM and KVM modules for some models

At present, Volvo mainly has three kinds of systems: knob with or without gear, semi-intelligent and intelligent key. The anti-theft difference between semi-intelligent and intelligent key is that the intelligent key system has a KVM module system to participate in anti-theft matching. At present, most Volvo models need to open and read the CEM/KVM module to read anti-theft data to obtain the password

2. Toothless knob anti-theft system

Brand	Model	Year	Key type
VOLVO	C30	2007-2013	Toothless Knob Key
VOLVO	C70	2007-2013	Toothless Knob Key
VOLVO	S40	2004-2012	Toothless Knob Key
VOLVO	V50	2006-2012	Toothless Knob Key

2.1Model Coverage:

2.2 Requirements

1.Launch IMMO PRO/IMMO PAD (professional version).

2. The toothless knob key used for anti-theft matching is divided into 16-digit and 24-digit remote control data. Before purchasing the key, please confirm whether the key used by the current vehicle is a 16-digit remote control data key or a 24-digit one. Please refer to Step 4 of anti-theft operation.

2.3 Procedure

The operation process demonstration takes Volvo S40 2008 toothless knob key as an example

Vehicle series entry

Select [Volvo] -> [Anti-theft Key Matching] -> [S40] -> [2004-2012] -> [Toothless Knob Key] (See Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6 for the process steps)

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Vehicle Version Information	A 🖶 🗗
Software ID	Version #
VOLVO	V10.01

Volvo Anti-theft Diagnostic Software V10.01

Software Introduction

Software Summary

The Software Supports The Functions Such As Anti-theft Adaptation, Key Unlock, And Module Reading and Cloning For VOLVO Series.

Function Coverage Summary

Anti-theft Adaptation

Smart/Semi-Smart/Toothless knob keys added, Smart/Semi-Smart/Toothless knob Keys All Lost, Smart/Semi-Smart/Toothless knob key deleted.

•	Key	Un	lock	
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Figure 1

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Anti-Theft Key Matching	
Automatic Scan	

Volvo

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C30	C70
S40	S60
S60 Cross Country	S60 Hybrid
S60L	S80
S80L	S90
Volvo	
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Figure 3

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Toothless knob key						

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Figure 5

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VOLVO V10.01 > Anti-Theft Key Matching > S40 > 2004-2012 >	Toothless knob key 🗄 12.01V
	Q Please enter keyword
Operation Guide	Key added
All keys lost	Key deleted
Read CEM security data (disassembling and reading)	Key remote control information
CEM cloning	

Volvo					
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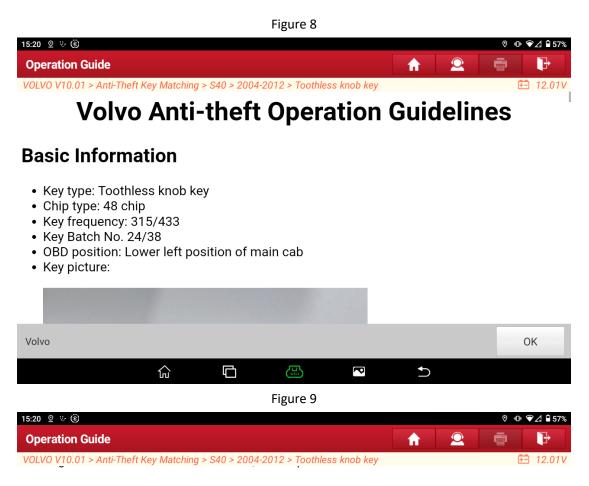
2. [Operation Guide]

Check the basic steps and precautions of the anti-theft matching process.

1) Select [Operation Guide] function to check the operation guide documents.

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Show Menu	A 👤 🖶
VOLVO V10.01 > Anti-Theft Key Matching > S40 > 2004-2012 >	Toothless knob key 🗄 12.01V
	Q Please enter keyword
Operation Guide	Key added
All keys lost	Key deleted
Read CEM security data (disassembling and reading)	Key remote control information
CEM cloning	

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Anti-theft Execution Process

- This process is a general process of matching toothless knob keys:
- 1 .Please read the operation introduction and precautions of this operation guide to understand what to pay attention to during the matching process.
- 2 .Remove original CEM module, connect G3 immobilizer programmer according to the wiring method provided by this operation guide, read the data of corresponding module through the function of [Read CEM Security Data (disassembling and reading)].
- 3. Before perform [Key Added] or [Keys All Lost] function, please perform [Key remote control information] function, save vehicle's original key remote control information.
- 4. Perform [Key Added] or [Keys All Lost] function, it will prompt to load the related data read in step 2 during the function, please follow the steps.

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Operation Guide	f	<u> </u>	ē	P
VOLVO V10.01 > Anti-Theft Key Matching > S40 > 2004-2012 > Toothless knob key read in step 2 during the function, please follow the steps.				Ē 12.01V

Precautions

- Please read the vehicle key remote control information through the function of [Key Remote Control Information] before performing this function, and record related information to avoid data loss.
- This system is only applied to toothless knob key matching, please confirm the type of the key before matching.
- Distinguish smart keys and toothless knob keys, 'PK' is printed on the packing box of smart keys, 'RFK' is printed on the packing box of toothless knob keys.
- There may be some modules that are not fully covered, please help feed back the prompt information to us and we will improve in time.
- Please strictly follow the device prompts in the process of matching.

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Figure 11							



3. [Read CEM security data (disassembling and reading)]

By reading the operation document through the function of [Operation Guide], the MCU Cable V1 harness of G3 programmer should be used to connect the disassembled vehicle module, and then the MCU V2 adapter should be used to connect the G3 programmer to the vehicle module. Finally, the function [Read CEM security data (disassembling and reading)] should be selected to read the anti-theft data of the vehicle module. (The module location and cable connection are detailed in the [Operation Guide]. This document will not describe this part in detail. The procedure is as follows)

1) The connection diagram is as follows:

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Operation Guide 🏦 🙎	ē P
VOLVO V10.01 > Anti-Theft Key Matching > S40 > 2004-2012 > Toothless knob key	Æ 12.01V
MCU Cable VI MCU V2 GII	
Volvo	ОК
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Figure 12	

2) Select [Read CEM security data (disassembling and reading)] function

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Show Menu	
VOLVO V10.01 > Anti-Theft Key Matching > S40 > 2004-2012 >	Toothless knob key 🗄 12.01V
	Q Please enter keyword
Operation Guide	Key added
All keys lost	Key deleted
Read CEM security data (disassembling and reading)	Key remote control information
CEM cloning	

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Figure 13

3) Prompt to view the [Operation Guide] function and click [YES] to proceed to the next step.

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VOLVO V10.01 > Anti-Theft Ke	ey Matching > S40 > 2	004-2012 > Too	thless knob key			÷-	12.01V
					Q		
Operation Guide		ĸ	ev added				
		Prompt					
All keys lost	Please perform [0] detailed operation Click [YES] to cont	iew the					
Read CEM security data					on		
	NO		YES				
CEM cloning							
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Figure 14

4) Connect G3 programmer. Connect anti-theft device, programmer and vehicle module according to [Operation guide]. Click [Yes] to proceed to the next step.

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VOLVO V10.01 > Anti-Theft K	ey Matching > S40 > 2004-2012 >	Toothless knob key		🖽 12.01V
				Q Please enter keyword
Operation Guide	Pro	ompt		
All keys lost	G3 Immobilizer programmer i please remove the vehicle CE [Operation Guidance], and co	he		
Read CEM security data	[Operation Guidance], read ar data.	nd save vehicle immobiliz	on	
CEM cloning	NO	YES		
Volvo				
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5) The module needs to read the relevant data of two chips. Select the corresponding module chip menu to read the data. For example, select MC9S12DT256 and MC9S12DG128 to read the data. For details about the connection mode, please refer to [Operation Guide] function.

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Show Menu		
VOLVO V10.01 > Anti-Theft Key Matching > S40 > 2004-2012 >	Toothless knob key	🖽 12.01V
		Please enter keyword
MC9S12XDT256	MC9S12XDT384	
MC9S12DG128	MC9S12DG256	
MC9S12DT256		

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6) A message is displayed indicating that data is being read. The read time is about 30 seconds. Do not move the device during this period to avoid data read failure.

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VOLVO V10.01 > Anti-Theft Ke	ey Match	ning > S40 > 2004-	2012 > Toothle	ss knob key			🗄 11.97V
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MC9S12XDT256			MCS	S12XDT384			
			Notes				
MC9S12DG128	J	Reading EEPROI	M data, please	wait			
MC9S12DT256							
			END SESSION				
Volvo							
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Figure 16

7) After the data is read successfully, a message is displayed indicating that the EEPROM data is read successfully and saved. After the data is saved, the function is executed successfully.

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VOLVO V10.01 > Anti-Theft K	ey Matching	> S40 > 2004-	-2012 > Toothle	ss knob key				÷	11.97V
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MC9S12XDT256			MC9	S12XDT384					
			Prompt						
MC9S12DG128	EEPRON data.	EEPROM data read successfully, please press [OK] to save data.							
MC9S12DT256									
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Figure 17

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VOLVO V10.01 > Anti-Theft K	ey Matching > S40 > 2004-201	2 > Toothless knob key				11.97V
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MC9S12XDT256		MC9S12XDT384				
	File	operation				
MC9S12DG128	Please input the saved file letters,numbers and under					
	S40_MC9S12XDT256_L					
MC9S12DT256						
	CANCEL	ОК				
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Volvo						
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Figure 18

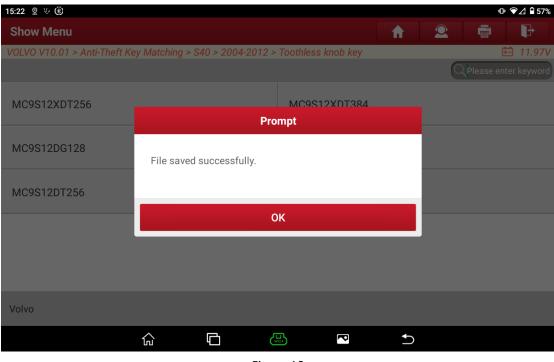


Figure 19

8) For details about how to read other chip data, see Step 5 to Step 7

4. [Key Remote Control Information]

Before implementing the key matching anti-theft function, it is necessary to perform the function of [Key remote control information] to read the key and remote control data information of the current vehicle, and save the screenshots in case the key and remote control data cannot be recovered if they are lost.

The read key remote control information can be used to confirm whether the current model uses 16-digit remote control data or 24-digit remote control data, and purchase the corresponding key according to the actual situation.

5. [Key added]

The function of [Key added] is used to add keys to the vehicle without deleting the original car keys. The function of [All keys lost] is used to add keys to the vehicle after deleting all the original car keys. After deleting the original car keys, the original car keys need to be re-matched before they can be used again. The function of [Key deleted] is used to delete the original car keys. Please select a function based on actual requirements. This document takes [Key added] as an example: 1) Select [Key added] function, and the prompt is displayed to view the [Operation guide] function, click [YES] to proceed to the next step.

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Show Menu			1		ē P
VOLVO V10.01 > Anti-Theft K	ey Matching > S40 > 200	4-2012 > Toothless	knob key		🖽 11.97V
				(Please enter keyword
Operation Guide		Key add	led		
		Prompt			
All keys lost	Please perform [Ope detailed operation p Click [YES] to contin	he			
Read CEM security data				on	
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Volvo					
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		Figure 30			

2) After completing the operation as prompted, click [OK] to proceed to the next step.

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Operation Guide			Key add	he					
		P							
All keys lost	Please insert ON position.	the key to be	C						
Read CEM security data						on			
CEM cloning	CAN	CEL		ок					
Volvo									
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Figure 31

3) A prompt is displayed to load two copies of CEM security data, click [OK] to load the anti-theft data.

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Show Menu			f			ŀ
VOLVO V10.01 > Anti-Theft Ke	ey Matching > S40 > 2004-2012	> Toothless knob key			í.	🗄 12.00V
				C		ter keyword
Operation Guide		Key added				
	Pr	ompt				
All keys lost	To perform this function, ple security data of this vehicle, method of [Read CEM Secur	he				
Read CEM security data	reading)].			on		
	CANCEL	ок				
CEM cloning	CANCEL	OK				
Volvo						
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Figure 32

4) Select the first read data file, here we select file S40_MC9S12DG128.bin.

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						(keyword
Operation Guide			Key adde	ed					
			Prompt						
All keys lost	Please load	d the first copy	of CEM securi	ty data.					
Read CEM security data (_	ion			
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File operation	A	
VOLVO V10.01 > Anti-Theft Key Matching > S40 > 2004-2012 > Toothles	s knob key	⊡ 12.00V
Backup File Name		
S40_MC9S12DT256.bin		
XC60_KVM_IMMODAT.bin		
S40_MC9S12XDT256_R.bin		
eee.bin		
S40_MC9S12XDT256aa.bin		
Exit		
Volvo		

Figure 34

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VOLVO V10.01 > Anti-Theft Ke	y Matching > \$	640 > 2004-201	2 > Toothless k	nob key		(🗄 12.00V
Backup File Name							
S40_MC9S12DT256.bin							
		Inf	ormation				
XC60_KVM_IMMODAT.bin	Calastad			hin			
S40_MC9S12XDT256_R.bi	Selected F	ile Is:S40_MC9	STZXDTZ56_K	.DIN			
eee.bin							
		NO		YES			
S40_MC9S12XDT256aa.bi	n						
			Total.				
			Exit				
Volvo						 	
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5) Select the second read data file, here we select file S40_MC9S12DT256. bin.

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文件操作	f	8	<u>Q</u>					
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备份文件名								
Launch_HalfSmartKey_Prtl_L0004_CEM-TYPE2_EEPROM.bin								
1_CEM-TYPE1_R32C_R5F64524KFD_E2 DATA_Src.bin								
S40_MC9S12DT256.bin								
XC60_KVM_IMMODAT.bin								
eee.bin								
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	P	Ð						

Figure 36

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File operation			f	2	ē P
VOLVO V10.01 > Anti-Theft Key	/ Matching > S40 > 2004-201	12 > Toothless knob key			🗄 12.00V
Backup File Name					
eeeee.bin					
Launch_SmartKey_Prtl_L0	In	formation			
S40_MC9S12XDT256_L.bi	Selected File Is:S40_MC	9S12XDT256_L.bin			
KVM_1_EEPROM.bin					
ff.bin	NO	YES			
	10001 OFM FEDDOMA D	лта L:			
		Exit			
Volvo					
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6) Input the 8-digit remote control ID (The remote control ID and remote control data are on the key packaging shell when the key is purchased).

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Prompt	f	2		
Please input 8-digit remote control ID	:			
1 6 E 4 6 5 C 4 🛛 😵				
0 1 2 3 4 5 6	7		8	9
A B C D E F				
Volvo				Confirm
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Figure 38

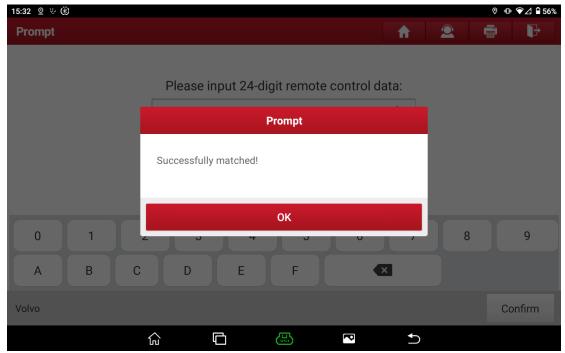
7) Input the 24-digit remote control data (The example model is a 24-digit remote control, please select the key according to the actual situation), click [OK] to proceed to the next step.

Prompt Image: Constraint of the set of the
B 4 1 5 2 E 4 C 6 2 8 F C 5 2 6 B E 4 2 3 C 4 5 0 1 2 3 4 5 6 7 8 9
A B C D E F 💌
Volvo

Figure 39

- @ �∠ 🔒 56% 15:24 🖬 💇 🖖 🛞 Prompt Please input 24-digit remote control data: Notes Communicating, please wait... END SESSION 0 1 8 9 С D F X В Е А Confirm ᡬ (Jan) þ P Ð
- 8) Wait for key matching, which takes about 1 minute.

Figure 40



3.半智能钥匙/智能钥匙防盗系统

3.1Model Coverage

The anti-theft process of the following models is basically the same, but different vehicles need to read vehicle module data in different ways, which can be divided into the following three categories (each color represents one) :

Brand	Model	Year	Key type	
VOLVO	S60	2010-2018	Smart Key/Half-Smart Key	
VOLVO	S60 Cross Country	2016-2018	Smart Key/Half-Smart Key	
VOLVO	S60L	2014-2018	Smart Key/Half-Smart Key	
VOLVO	S80	2010-2016	Smart Key/Half-Smart Key	
VOLVO	S80L	2010-2015	Smart Key/Half-Smart Key	
VOLVO	V60	2011-2018	Smart Key/Half-Smart Key	
VOLVO	V60 Cross Country	2015-2018	Smart Key/Half-Smart Key	
VOLVO	V70	2009-2016	Smart Key/Half-Smart Key	
VOLVO	XC60	50 2010-2018 Smart Ke		
VOLVO	XC70	2011-2016	Smart Key/Half-Smart Key	
VOLVO	S80	2007-2009	Smart Key/Half-Smart Key	
VOLVO	S80L	2008-2009 Smart Key/Ha		
VOLVO	XC60	2006-2009	Smart Key/Half-Smart Key	
VOLVO	XC70	2008-2010	Smart Key/Half-Smart Key	

VOLVO	V40	2012-2018	Smart Key/Half-Smart Key
VOLVO	V40 Cross Country	2013-2018	Smart Key/Half-Smart Key

3.2Requirements

1.Launch IMMO PRO/IMMO PAD (professional version).

2. As for the compliance smart keys/semi-smart keys used for anti-theft matching, it is recommended to use the original factory key, because some secondary factory keys may have no intelligence after matching.

3. The difference between the semi-smart key and the smart key is that the matching process of the smart key contains KVM data disassembling & reading and data decryption steps. Other matching processes are basically the same as those of the smart key.

3.3Procedure

This operation process demonstration takes Volvo 2016 XC60 smart key as an example.

Vehicle series entry

Select [Volvo] -> [Automatic scan] -> [XC60] -> [2010-2018] -> [Smart key] (See Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6 and Figure 7 for the process steps)

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Vehicle Version Information	A 🖶 🕑
Software ID	Version #
VOLVO	V10.01

Volvo Anti-theft Diagnostic Software V10.01

Software Introduction

Software Summary

The Software Supports The Functions Such As Anti-theft Adaptation, Key Unlock, And Module Reading and Cloning For VOLVO Series.

Function Coverage Summary

- Anti-theft Adaptation
- Smart/Semi-Smart/Toothless knob keys added, Smart/Semi-Smart/Toothless knob Keys All Lost, Smart/Semi-Smart/Toothless knob key deleted. • Key Unlock

Kay recognition and unlock				Vehicle Coverage	Search Bluetooth	ОК
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Figure 1

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VOLVO V10.01 > Main function menu	🖽 12.03V
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Anti-Theft Key Matching	
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Anti-Theft Key Matching							
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Volvo							
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Figure 3

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Figure F						

Figure 5

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Semi-Smart key				
Smart key				

Volvo	
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Show Menu	↑ 2 ē F
VOLVO V10.01 > XC60 > 2010-2018 > Smart key	Ē 12.08V
	QPlease enter keyword
Operation Guide	Smart keys added
Smart keys all lost	Smart key deleted
Read CEM security data (disassembling and reading)	Read KVM security data (disassembling and reading)
Module identification	Key recognition and unlock
KVM cloning	
Volvo	

Figure 7

2. [Operation Guide]

Check the basic steps and precautions of the anti-theft matching process. (See Figure 8, Figure 9, Figure 10, and Figure 11 for the process steps)

1) Select the [Operation Guide] function to view the operation guide document.

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Show Menu					
VOLVO V10.01 > XC60 > 2010-2018 > Smart key	🖽 12.08V				
	Q Please enter keyword				
Operation Guide	Smart keys added				
Smart keys all lost	Smart key deleted				
Read CEM security data (disassembling and reading)	Read KVM security data (disassembling and reading)				
Module identification	Key recognition and unlock				
KVM cloning					
Volvo					
Figure 8					

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Operation Guide	f	2	ē	₽
VOLVO V10.01 > XC60 > 2010-2018 > Smart key			[+ -] 12.08V
Volvo Anti-theft Operation (Guid	delir	ies	

Basic Information

- Key type: Smart key
- Chip type: 46 chip
- Key frequency: 433
- Key Batch No. 38
- Can the chip be copied: No
- OBD position: Lower left position of main cab
- Key picture:

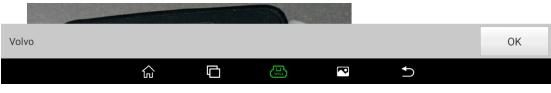


Figure 9

F= 12.08V

A

Q

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Operation Guide

VOLVO V10.01 > XC60 > 2010-2018 > Smart key

Anti-theft Execution Process

- This process is a general process of matching smart keys:
- 1 .Please read the operation introduction and precautions of this operation guide to understand what to pay attention to during the matching process.
- 2 .Remove original CEM and KVM module, connect G3 immobilizer programmer according to the wiring method provided by this operation guide, read the data of corresponding module through the function of [Read KVM Security Data (disassembling and reading)] and [Read CEM Security Data (disassembling and reading)].
- 3 .Install the original CEM and KVM module back into the vehicle and then perform [Module Identification] function to check if the modules are installed correctly.
- 4.Perform [Smart Key Added] or [Smart Keys All Lost] function, it will prompt to load the related data read in step 2 during the function, please follow the steps.

_								
Volvo							OK	
		C		P	Ð			
			Figure 10					
14:13 오 😳 🛞							@ ♥∠	60%
Operation Guide					f	\bigcirc		₽
VOLVO V10.01 > XC60	> 2010-2018 > Sn	nart key					E 1.	2.08V

Precautions

- Please try to use original key to match, it may present that the matched key is not a smart one after using a replaced key with successful matching.
- Without exiting the sub-function menu, there is no need to reload the Anti-theft data to continue to perform the function for multiple times after the same vehicle has completed data decryption for one time. Please re-enter the menu after exiting if needs to reload data.
- After key matching succeeded, the key cannot be removed normally when prompts to remove the key, please do not remove the key forcedly, try to start the vehicle and then shut down, after that try to remove the key again.
- In the process of [Smart Key Added] and [Smart Keys All Lost], only needs to place the smart key to be matched in the vehicle, take other smart keys out of the vehicle, otherwise it may cause the new added key is not a smart one and other problems.
- There is a risk of damage to the module due to module removal and wire bonding, please

Volvo						ОК	
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3. [Read KVM security data (disassembling and

reading)]

After reading the operation document of the function of [Operation Guide], the MCU Cable V1 harness of the G3 programmer should be used to connect the disassembled vehicle module, and then the MCU V2 adapter should be used to connect the G3

programmer to the vehicle module. Finally, the function [Read KVM security data (disassembling and reading)] should be selected to read the anti-theft data of the vehicle module. (The module location and connection method are detailed in the [Operation Guide], which will not be detailed in this document. The procedure is as follows.)

14:16 오 또 ()			@ ▼⊿ 🕯 60%
Operation Guide		•	ē P
VOLVO V10.01 > XC60 > 2010-2018 > Smart ke	osc		Ē 11.93V
MCU cable V1 M			
Volvo			ОК
<u></u>		€	

1) The connection diagram is as follows:

Figure 12

2) Select [Read KVM security data (disassembling and reading)] function

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Show Menu	A 👱 🖷 🕩
VOLVO V10.01 > XC60 > 2010-2018 > Smart key	🖽 12.08V
	Q Please enter keyword
Operation Guide	Smart keys added
Smart keys all lost	Smart key deleted
Read CEM security data (disassembling and reading)	Read KVM security data (disassembling and reading)
Module identification	Key recognition and unlock
KVM cloning	
Volvo	
6 G 6	
Figu	re 13



3) Prompt to view the [Operation Guide] function and click [YES] to proceed to the next step.

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Show Menu			f			P
VOLVO V10.01 > XC60 > 201	0-2018 > Smart key					🗄 12.09V
				C		nter keyword
Operation Guide		Smart keys added				
	Pro	mpt				
Smart keys all lost	Please perform [Operation gu detailed operation procedure Click [YES] to continue, click	S.	ew the			
Read CEM security data				assemb	ling and	reading)
	NO	YES				
Module identification		Key recognition an				
KVM cloning						
Volvo						
	ŵ G		Ð			

Figure 14

4) Connect G3 programmer. Connect anti-theft device, programmer and vehicle module according to [Operation guide]. Click [Yes] to proceed to the next step.

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Show Menu		A	9 6 2 1	
VOLVO V10.01 > XC60 > 201	0-2018 > Smart key		E 12.0	9V
			Q Please enter keywo	ord
Operation Guide		0		
operation Guide	Pro	ompt		
Smart keys all lost	G3 Immobilizer programmer please remove the vehicle KV [Operation Guidance], and co	/M module as per the onnect it correctly as per the		
Read CEM security data	[Operation Guidance], read a data.	nd save vehicle immobilizer	assembling and reading)
Module identification	NO	YES		
KVM cloning				
Volvo				
			5	

Figure 15

5) It is indicated that anti-theft data is being read. The reading time is about 1 minute, during which no operation is required. Do not move the device to avoid data reading failure.

Show Menu VOLVO V10.01 > XC60 > 2010-2018 > Smart key Please enter keywork Operation Guide Smart keys added Notes	
Operation Guide	
Operation Guide Smart keys added	ord
Notes	
Smart keys all lost Reading Anti-theft data of the module in progress, please wait	
Read CEM security data END SESSION END SESSION)
Module identification Key recognition and unlock	
KVM cloning	
Volvo	

Figure 16

6) After the anti-theft data is read successfully, it is prompted that the data is read successfully and the data is saved. After the successful saving, the function execution is completed.

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Show Menu			f	2	ē	₽
VOLVO V10.01 > XC60 > 2010-	-2018 > Smart key				÷	11.93V
				Ple	ase enter	keyword
Operation Guide		Smart keys added				
		Prompt				
Smart keys all lost	Data read successfully, pl	ease press [OK] to save dat	ta.			
Read CEM security data (assembling	and rea	ding)
		ОК				
Module identification		Rey recognition and	UHIUCK			
KVM cloning						
Volvo						
	6 D	P	Ð			

Figure 17

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Show Menu			A			P
VOLVO V10.01 > XC60 > 201	0-2018 > Smart key				Ġ	🗄 11.93V
				C	Please en	ter keyword
Operation Guide		Smart kevs added				
	File o	peration				
Smart keys all lost	Please input the saved file n letters,numbers and underso					
Read CEM security data				assemb	ling and I	reading)
Module identification	CANCEL	OK Key recognition an	u uniock			
KVM cloning						
Volvo						
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Figure 18

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Show Menu			f	2 ā F
VOLVO V10.01 > XC60 > 201	0-2018 > Smart key			🗄 11.93V
				Please enter keyword
Operation Guide		Smart kevs added		
	File	operation		
Smart keys all lost	Please input the saved file letters,numbers and unders	name(enter only scores):		
	XC60_KVM_IMMODATA			
Read CEM security data				assembling and reading)
	CANCEL	ОК		
Module identification		Key recognition and	и иппоск	
KVM cloning				
J				
Volvo				
		A	Ð	

Figure 19

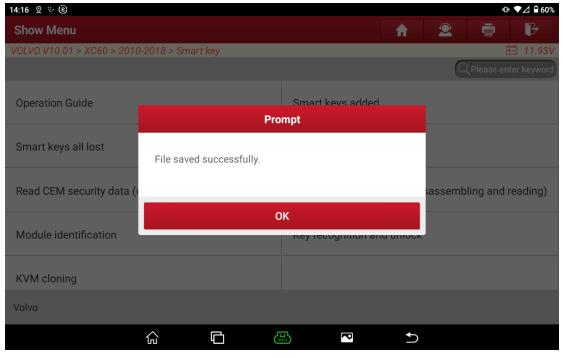


Figure 20

4. [Read CEM security data (disassembling and reading)]

By reading the operation document of the function of [Operation Guidance], the MCU Cable V1 harness of G3 programmer should be used to connect the disassembled vehicle module, and then the MCU V2 adapter should be used to connect the G3 programmer to the vehicle module. Finally, the function [Read CEM

security data (disassembling and reading)] should be selected to read the anti-theft data of the vehicle module. (The module location and cable connection are detailed in the [Operation Guide]. This document will not describe this part in detail. The procedure is as follows)

15:30 🙎 🔜 🥲 🛞 🔹					0 @ ❤∠ 🛙 21%
Operation Guide				î 2	
VOLVO V10.01 > Anti-Th					⊡ 11.99V
	MCU Cable VI	MCU_V2	GIII		
Volvo					ОК
	ل	6		Ð	

1) The connection diagram is as follows:

Figure 21

2) Select [Read CEM security data (disassembling and reading)] function

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Show Menu						
VOLVO V10.01 > XC60 > 2010-2018 > Smart key	Ē 12.08V					
	Q Please enter keyword					
Operation Guide	Smart keys added					
Smart keys all lost	Smart key deleted					
Read CEM security data (disassembling and reading)	Read KVM security data (disassembling and reading)					
Module identification	Key recognition and unlock					
KVM cloning						
Volvo						
F ' a a a b b b b b b b b b b						



3) Prompt to view [Operation guide] function, click [YES] to proceed to the next step.

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Show Menu			♠ 오	P
VOLVO V10.01 > XC60 > 201	0-2018 > Smart key		Ē	🗄 11.93V
			Q Please ent	er keyword
Operation Guide	Dr			
	Fi	ompt		
Smart keys all lost	Please perform [Operation g detailed operation procedure	the		
	Click [YES] to continue, click	[NU] to exit.		
Read CEM security data			assembling and r	eading)
	NO	YES		
Module identification		Ney recognition and t	HIUCK	
KVM cloning				
Volvo				
			 €	

Figure 23

4) Connect G3 programmer, connect anti-theft device, programmer and vehicle module according to [Operation Guide], and click [YES] to go to the next step.

14:18 🔍 🖖 🛞			•⊡ ▼∠ 🔒 60%
Show Menu		1	
VOLVO V10.01 > XC60 > 201	0-2018 > Smart key		🖽 11.93V
			Q Please enter keyword
Operation Guide		0	
operation outdo	Pi	rompt	
Smart keys all lost	G3 Immobilizer programme please remove the vehicle C [Operation Guidance], and c	e	
Read CEM security data	[Operation Guidance], read a data.	assembling and reading)	
Module identification	NO	YES	
KVM cloning			
Volvo			
		9	1

Figure 24

5) It is suggested that anti-theft data is being read, and the reading time is about 1-2 minutes. During this period, no operation is required. Do not move the device to avoid data reading failure.

14:18 🔍 🖖 (婆)								•	⊿ 🖬 60)%
Show Menu					A		ē		P	
VOLVO V10.01 > XC60 > 201	0-2018 >	> Smart key						÷-	11.91	V
						(QPlease	enter I	keywoi	rd
Operation Guide			Smart ke	evs added						
		N	otes							
Smart keys all lost	С	Reading Anti-theft data please wait	a of the mod	ule in progre	SS,					
Read CEM security data						2000	bling on	d roo	ding)	
Read CEM Security data		END SESSION				assembling and reading)				
		END 5	ESSION							
Module identification			кеу гесо	gnition and	uniock					
KVM cloning										
Volvo										
	۵	6		P	Ð					

Figure 25

6) After the anti-theft data is read successfully, it is prompted that the data is read successfully and the data is saved. After the successful saving, the function execution is completed.

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Show Menu			A	2	ē	₽
VOLVO V10.01 > XC60 > 2010	-2018 > Smart key				€=	11.91V
				QPI	ease enter	keyword
Operation Guide	Dr	Smart keys added				
		Sillpt				
Smart keys all lost	Data read successfully, plea	ase press [OK] to save da	ita.			
Read CEM security data (assemblin	g and rea	ding)
		ок				
Module identification		ney recognition and	uniock'			
KVM cloning						
Volvo						
		9	€			

Figure 26

14:18 👤 🌝 🛞					¢	▼⊿ 🖬 60%		
Show Menu			f		Ē	P		
VOLVO V10.01 > XC60 > 2010)-2018 > Smart key					11.91V		
				Q		er keyword		
Operation Guide		Smart keys added						
File operation								
Smart keys all lost	Please input the saved file na letters,numbers and undersco							
Read CEM security data				assembli	ing and re	eading)		
	CANCEL	ОК						
Module identification		Key recognition an	u uniock					
KVM cloning								
Volvo								
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Figure 27

14:20 🛛 🕑 🤄					0 D	✔⊿ 🗎 60%
Show Menu			f		ē	P
VOLVO V10.01 > Anti-Theft K	ey Matching > XC60 > 2010-2018	3 > Smart key				11.95V
				Q	Please ente	r keyword
Operation Guide		Smart keys added				
	File o	peration				
Smart keys all lost	Please input the saved file n letters,numbers and underso					
Read CEM security data	XC60_CEM_IMMODATA			assembli	ng and re	ading)
	CANCEL	ок				
Module identification		Key recognition and	ипоск			
KVM cloning						
Volvo						
		S	Ð			

Figure 28

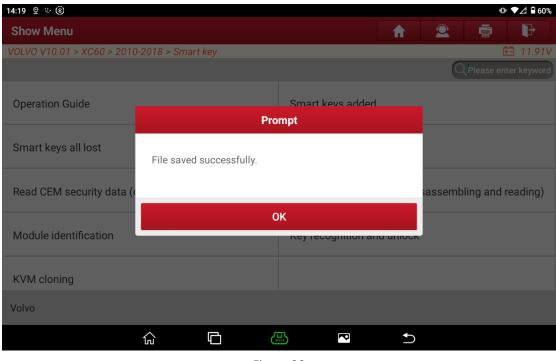


Figure 29

5. [Smart keys added]

The [Smart keys added] function is used to add keys to the vehicle without deleting the original car keys. The [Smart keys all lost] function is used to add keys to the vehicle after deleting all the original car keys. After deleting the original car keys, the original car keys need to be re-matched before they can be used again. The [Smart key deleted] function is used to delete all the original car keys. Please select a function based on actual requirements. This document takes [Smart keys added] as an example:

1) Select [Smart keys added] function, it's prompted to view the [Operation guide] function and click [YES] to perform the next step.

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Show Menu			ft 👘		ē	ŀ
VOLVO V10.01 > Anti-Theft Ke	ey Matching > XC60 > 2010-2018	3 > Smart key			e	🗄 11.98V
				Q		ter keyword
Operation Guide	Pro	Smart keys added				
Smart keys all lost	Please perform [Operation gu detailed operation procedure Click [YES] to continue, click	es.	the			
Read CEM security data			аз	ssembli	ng and i	eading)
Module identification	NO	YES	ITHOUR			
KVM cloning						
Volvo						
			♪			

Figure 30

2) After completing the action 'Press the START button', click [OK] to perform the next step.

14:21 🛛 또 🛞					⊘ ⊕ ♥	⊿ 🕯 60%
Show Menu			f	2	ē	P
VOLVO V10.01 > Anti-Theft Ke	y Matching > XC60 > 2010-2018	> Smart key			÷-	11.95V
				QP		
Operation Guide	Smart keys added					
	Pro	ompt				
Smart keys all lost	Press the START button.					
Read CEM security data ([]		_	assemblin	g and rea	ading)
Module identification	CANCEL	OK Rey recognition and	uniock			
KVM cloning						
Volvo						
	ŵ 🖻 🔇		€			

Figure 31

3) It's prompted to load CEM security data, click [OK] to load the anti-theft data.

14:21 🛛 🖖 (⑧)			0 Q	✔⊿ 🗎 60%
Show Menu				P
VOLVO V10.01 > Anti-Theft Ke	ey Matching > XC60 > 2010-2018	3 > Smart key	÷-	11.98V
			Q Please enter	r keyword
Operation Guide		Smart keys added		
	Pro	ompt		
Smart keys all lost	Click [OK] to load the CEM so when CEM security data was		e	
Read CEM security data			assembling and re	ading)
Module identification	CANCEL	OK		
KVM cloning				
Volvo				
		5	5	

Figure 32

4) Select the read data file, here we select file XC60_CEM_IMMODATA.bin.

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File operation					f	\bigcirc	-	ŀ	
VOLVO V10.01 > Anti-Theft Ke	y Matching >	> XC60 > 201	0-2018 > Smar	t key				🗄 11.98V	
Backup File Name									
XC90_2020_CEM_IMMODA	ATA.bin								
Launch_SmartKey_Prtl_L0002_CEM_SPC5748G_IMMODATA.bin									
XC60_CEM_IMMODATA.bi	n								
	AThin								
XC90_2020_CEM_IMMODA	AI.DIN								
.bin									
			Exit						
Volvo									
	ل	G		P	€				
			Figure 33						
14:22 🙎 ৬ 🛞			Figure 55				Ø	ው ▼⊿ 🕯 60%	
File operation					A	2	ē	G	
VOLVO V10.01 > Anti-Theft Ke	v Matching >	> XC60 > 201	0-2018 > Smar	t kev		~		E 11.98V	
Backup File Name	, including								
XC90_2020_CEM_IMMOD									
			Information						
Launch_SmartKey_Prtl_L0	Selected	File Is:XC60	_CEM_IMMOD/	ATA.bin					
XC60_CEM_IMMODATA.bi									
XC90_2020_CEM_IMMOD/		NO		YES					
		_							
.bin									
			Exit						
Volvo									
	<u>ل</u>	þ		P	Ð				

Figure 34

5) It's prompted to load KVM security data, click [OK] to load the anti-theft data.

14:22 오 ৬ (홍)						0	ው ♥∡ 🕯 60%
File operation				1	h	Ē	P
VOLVO V10.01 > Anti-Theft Ke	ey Matching > XC60 >	2010-2018 >	Smart key				🗄 11.98V
Backup File Name							
XC90_2020_CEM_IMMOD		Prom	pt				
Launch_SmartKey_Prtl_L	Click [OK] to load						
XC60_CEM_IMMODATA.b	when KVM securit	y data was re	ad successfully	/.			
					_		
XC90_2020_CEM_IMMOE	CANCEL		O	К			
.bin							
		Exit	t				
Volvo						 	
	<u>م</u>	U	P		Ð		

Figure 35

6) Select the read data file, here we select file XC60_KVM_IMMODATA.bin.



Figure 36

14:22 오 ৬ 🛞					@ ♥⊿ 🕯 60%
File operation			f	2	ē
VOLVO V10.01 > Anti-Theft Key			🗄 11.98V		
Backup File Name					
1_CEM-TYPE1_R32C_R5F64	4524KFD_E2 DATA_Src.bin				
eee.bin	eee.bin Information				
Launch_HalfSmartKey_Prt	Selected File Is:XC60_KVM_I	MMODATA.bin			
XC60_KVM_IMMODATA.bi					
Launch_SmartKey_Prtl_L0	NO	YES			
		xit			
Volvo					
			Ð		

Figure 37

7) Confirm the key is correct and then click [YES] to perform the next step.

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Show Menu			f	2		P
VOLVO V10.01 > Anti-Theft K	ey Matching > XC60 > 2010 [.]	-2018 > Smart key			Ē.	12.07V
				C	Please ente	er keyword
Operation Guide		Smart keys ad	ded			
Smart keys all lost		This function is applied to full-smart key matching, please confirm the key type before matching !				
	Click [YES] to continue,					
Read CEM security data				assemb	ling and re	eading)
	NO	YES	5			
Module identification		Rey recognition				
KVM cloning						
Malua						
Volvo						
	б П	P	Ð			

Figure 38

14:23 오 ৬ 🛞					0	♥⊿ 🖥 60%			
Show Menu			f		F	P			
VOLVO V10.01 > Anti-Theft Ke	y Matching > XC60 > 2010-2018	> Smart key				12.07V			
				Q					
Operation Guide		Smart keys added							
	Pro	ompt							
Smart keys all lost	Please turn off the ignition s	switch.							
Read CEM security data (ng and re	edina)			
				Jussembli	ing and it	cuality)			
	CANCEL	ОК							
Module identification		Rey recognition and	IUNIOCK						
KVM cloning									
Volvo									
	ŵ 🗗 🔮		Ð						
Figure 39									

8) Turn off the ignition switch and click [OK] to perform the next step.

9) Confirm the number of keys and then click [OK] to perform the next step.

14:26 오 ৬ (흥)					0	∕⊿ 🖥 60%
Show Menu			f		ē	₽
VOLVO V10.01 > Anti-Theft Key	/ Matching > XC60 > 2010-2018	3 > Smart key			-+-	12.07V
				Q	Please ente	r keyword
Operation Guide		Smart keys added				
	Pro	ompt				
Smart keys all lost	Number of matched keys: 2 Maximum number of keys a					
Read CEM security data (e			_	assembli	ng and re	ading)
	(ок				
Module identification	Кеу тесоупцонтали илюск					
KVM cloning						
Volvo						
	ŵ 🖸 👌	R S	Ð			

Figure 40

10) Insert the key into the card slot according to the prompts, select subsequent operations according to whether the key will be ejected. Click [CANCEL] to perform the next step when the key is ejected, click [OK] to perform the next step when the key is not ejected (generally ejected key is a rare case).

14:26 오 🖖 🛞					•	⊿ 🔒 60%	
Show Menu			f	2		P	
VOLVO V10.01 > Anti-Theft K	(ey Matching > XC60 > 2010-20)18 > Smart key			÷-	12.07V	
				QPlea	ise enter l	keyword	
Operation Guide		Prompt					
Smart keys all lost	slot and take other keys ou Note:	Please insert the smart key to be matched into the card slot and take other keys out of the vehicle. Note: Press [OK] to proceed when the inserted key is not ejected.					
Read CEM security data	Press [CANCEL] to proceed ejected.	d when the inserted key is		assembling	and rea	ding)	
Module identification	CANCEL	ок					
KVM cloning							
Volvo							
	â 🗖	9	♪				

Figure 41

11) According to the prompts, click [OK] to complete the matching.

14:27 🛛 🖖 ())					0	⊿ 🔒 60%
Show Menu			A		Ē	₽
VOLVO V10.01 > Anti-Theft Ke	y Matching > XC60 > 2010-2	018 > Smart key			-+-	12.07V
				0	Please enter	keyword
Operation Guide		Smart ke	vs added			
		Prompt				
Smart keys all lost	START function matchir	ig completed.				
Read CEM security data (assemb	ling and rea	ading)
Module identification		OK Key leco(gnicion and unic			
KVM cloning						
Volvo						
			P	5		

Figure 42

14:28 🛛 🤟 🛞						ቡ ♥⊿ 🕯 59%
Show Menu			f	2	ē	P
VOLVO V10.01 > Anti-Theft Key	/ Matching > XC60 > 2010-2018	3 > Smart key				🖽 12.07V
				C		nter keyword
Operation Guide		o and a second deal				
operation onde	Pro	ompt				
Smart keys all lost	Number of matched keys: 3 Key ID1:31323334 Key ID2:35363738 Key ID3:39404142					
Read CEM security data (Key 100.00404142		_	assemt	oling and	l reading)
	(ок				
Module identification			_			
KVM cloning						
Volvo						
	ŵ 🖻 👌		Ð			

Figure 43

14:28 오 🖖 (第)						0	⊿ 🖬 59%
Show Menu				A		Ē	P
VOLVO V10.01 > Anti-Theft K	ey Matching > XC60 >	2010-2018 > Smart	key			÷-	12.10V
					Q	Please enter	keyword
Operation Guide		Smar	t kevs added				
		Prompt					
Smart keys all lost	Remove the smart button. (If the vehi	I and then switch OI key from the card s cle has no response	lot, press UNLO				
Read CEM security data	button for several	times)			assembl	ing and rea	ading)
		ОК					
Module identification		Rey R	ecognition and	uniock			
KVM cloning							
Volvo							
	<u>م</u>		P	Ð			

Figure 44

14:28 º 🖖 (荖)					@ ♥⊿ 🕯 59%	
Show Menu			fi -	2 7	₽	
VOLVO V10.01 > Anti-Theft Ke	ey Matching > XC60 > 2010-2018	> Smart key			🗄 12.10V	
				Q Please e	enter keyword	
Operation Guide	Operation Guide Smart keys added					
	Pro	mpt				
Smart keys all lost	Smart and Remote Control fu	nctions matching comple	ted.			
Read CEM security data (as	sembling and	l reading)	
	0	к				
Module identification		Key recognition and u	HIUCK			
KVM cloning						
Volvo						
	ŵ 🗅 🔮	R	Ð			

Figure 45

2020 年后防盗 Procedure

2.1Model Coverage:

Make	Vehicle	Year	Кеу Туре
VOLVO	S60	2019-2021	Smart Key
VOLVO	S60 Hybrid	2018-2021	Smart Key
VOLVO	S90	2016-2021	Smart Key
VOLVO	S90 Hybrid	2019-2021	Smart Key
VOLVO	V60	2019-2021	Smart Key
VOLVO	V90	2017-2021	Smart Key
VOLVO	XC40	2018-2021	Smart Key
VOLVO	XC40 BEV	2021	Smart Key
VOLVO	XC60	2018-2021	Smart Key
VOLVO	XC60 Hybrid	2018-2021	Smart Key
VOLVO	XC90	2016-2021	Smart Key
VOLVO	XC90 Hybrid	2016-2021	Smart Key

2.2Requirements

1.Launch IMMO PRO/IMMO PAD (professional version)

2. As for the compliance smart keys used for anti-theft matching, it is recommended to use the original factory key, because some secondary factory keys may have no intelligence after matching.

2.3Procedure

This operation process demonstration takes Volvo 2020 XC90 smart key as an example.

Anti-theft operation process

This operation process demonstration takes Volvo 2020 XC90 smart key as an example.

Vehicle series entry 1.

Select [Volvo] -> [Automatic Scan] -> [XC90] -> [2016-2021] -> [Smart key](See Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6 and Figure 7 for the process steps)

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Vehicle Version Information	↑
Software ID	Version #
VOLVO	V10.01

Volvo Anti-theft Diagnostic Software V10.01

Software Introduction

Software Summary

The Software Supports The Functions Such As Anti-theft Adaptation, Key Unlock, And Module Reading and Cloning For VOLVO Series.

Function Coverage Summary

- Anti-theft Adaptation
- Smart/Semi-Smart/Toothless knob keys added, Smart/Semi-Smart/Toothless knob Keys All Lost, Smart/Semi-Smart/Toothless knob key deleted. • Key Unlock

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Automatic Scan						

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Figure 2

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Figure 4

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Figure 6

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VOLVO V10.01 > XC90 > 2016-2021 > Smart key	🖽 11.96V
	Q Please enter keyword
Operation Guide	Smart keys added
Smart keys all lost	Smart key deleted
Read CEM security data (disassembling and reading)	Number of smart keys

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2. [Operation Guide]

Check the basic steps and precautions of the anti-theft matching process. (See Figure 8, Figure 9, Figure 10, and Figure 11 for the process steps)

1) Select the [Operation Guide] function to view the operation guide document.

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VOLVO V10.01 > XC90 > 2016-2021 > Smart key	🗄 11.96V
	Q Please enter keyword
Operation Guide	Smart keys added
Smart keys all lost	Smart key deleted
Read CEM security data (disassembling and reading)	Number of smart keys

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Figure 8



Basic Information

- · Key type: Smart key
- Chip type: 8A chip
- Key frequency: 433
- OBD position: Lower left position of main cab
- Key picture:

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Operation Guide					A 2	
VOLVO V10.01 > XC9	0 > 2016-2021 > Sn	nart key				🖽 11.96V

Anti-theft Execution Process

- This process is a general process of matching smart keys:
- 1 .Please read the operation introduction and precautions of this operation guide to understand what to pay attention to during the matching process.
- 2 .Remove original CEM module, connect G3 immobilizer programmer according to the wiring method provided by this operation guide, read the data of corresponding module through the function of [Read CEM Security Data (disassembling and reading)].
- 3 .After the original module was installed back into the vehicle, perform [Smart Key Added] or [Smart Keys All Lost] function, it will prompt to load the related data read in step 2 during the function, please follow the steps.

Precautions



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Anti-theft Execution Process

- This process is a general process of matching smart keys:
- 1 .Please read the operation introduction and precautions of this operation guide to understand what to pay attention to during the matching process.
- 2 .Remove original CEM module, connect G3 immobilizer programmer according to the wiring method provided by this operation guide, read the data of corresponding module through the function of [Read CEM Security Data (disassembling and reading)].
- 3 .After the original module was installed back into the vehicle, perform [Smart Key Added] or [Smart Keys All Lost] function, it will prompt to load the related data read in step 2 during the function, please follow the steps.

Precautions

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3. [Read CEM security data (disassembling and reading)]

- By reading the operation document of the function of [Operation Guide], the MCU Cable V1 harness of G3 programmer should be used to connect the disassembled vehicle module, and then the MCU V1 adapter board should be used to connect the G3 programmer to the vehicle module. Finally, the function [Read CEM security data (disassembling and reading)] should be selected to read the anti-theft data of the vehicle module. (The module position and connection method are detailed in [Operation Guide], which will not be detailed in this document. See Figure 12, Figure 13 and Figure 14 for the process steps)
- 1) The connection diagram is as follows:

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Operation Guide	A	2	Ē	ŀ
VOLVO V10.01 > XC90 > 2016-2021 > Smart key			#+	∃ 11.95V
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Figure 12				

2) Select [Read CEM security data(disassembling and reading)] function

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VOLVO V10.01 > XC90 > 2016-2021 > Smart key	🖽 11.96V
	Q Please enter keyword
Operation Guide	Smart keys added
Smart keys all lost	Smart key deleted
Read CEM security data (disassembling and reading)	Number of smart keys

Volvo						
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			Figure 13			

3) Prompt to view the [Operation Guide] function and click [YES] to proceed to the next step.

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Show Menu			A	ð P
VOLVO V10.01 > XC90 > 201	6-2021 > Smart key			🗄 11.95V
				ase enter keyword
Operation Guide		Smart keys added		
	Pro	ompt		
Smart keys all lost	Please perform [Operation g detailed operation procedure Click [YES] to continue, click	es.	w the	
Read CEM security data				
		N/FO		
	NO	YES		
Volvo				
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4) Connect G3 programmer. Connect anti-theft device, programmer and vehicle module according to [Operation guide]. Click [Yes] to proceed to the next step.

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Show Menu					A	2	ē	P	
VOLVO V10.01 > XC90 > 201	6-2021 > Smart key	/					é	11.95	1
						C	Please en	ter keyword	
Operation Guide			- Constant						
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Smart keys all lost	G3 Immobilizer please remove [Operation Guid [Operation Guid data.								
Read CEM security data	data.								
	NO			YES					
Volvo									
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Figure 15

5) Select [SPC5748G] menu to proceed to the next step.

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VOLVO V10.01 > XC90 > 2016-2021 > Smart key	🗄 11.95V
	Q Please enter keyword
SPC5748G	

Volvo						
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			Figure 16			

Figure 16

6) It is indicated that anti-theft data is being read. The reading time is about 2-3 minutes, during which no operation is required. Do not move the device to avoid data reading failure.

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Show Menu					A	2	ē	P	
VOLVO V10.01 > Anti-Theft K	ey Matcl	hing > XC90 > 201	6-2021 > Smart	t key				🗄 11.90V	
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00057400									
SPC5748G			Notes						
	0	Reading Anti-th please wait	eft data of the r	module in prog	Iress,				
			END SESSION						
Volvo									
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Figure 17

7) After the anti-theft data is read successfully, it is prompted that the data is read successfully and the data is saved. After the successful saving, the function execution is completed.

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Show Menu	A	2 6 P
VOLVO V10.01 > Anti-Theft Key	y Matching > XC90 > 2016-2021 > Smart key	🗄 11.94V
		Q Please enter keyword
SPC5748G		
	Prompt	
	Data read successfully, please press [OK] to save data.	
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Figure 18

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Figure 19

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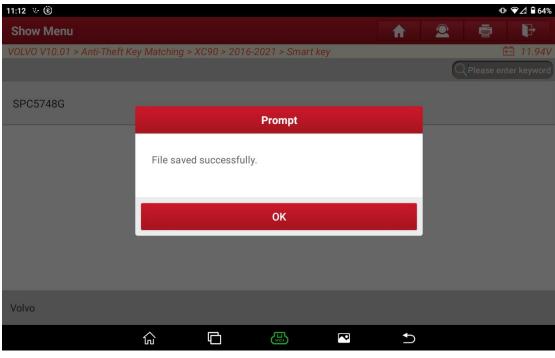


Figure 21

4. [Smart keys added]

The [Smart keys added] function is used to add keys to the vehicle without deleting the original car keys. The [Smart key all lost] function is used to add keys to the vehicle after deleting all the original car keys. After deleting the original car keys, the original car keys need to be re-matched before they can be used again. The

[Smart key deleted] function is used to delete all the original car keys. Please select a function based on actual requirements. This document uses [Smart keys added] as an example:

1) Select [Smart keys added] function, and the prompt is displayed to view the [Operation guide] function, click [YES] to proceed to the next step.

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VOLVO V10.01 > Anti-Theft K	ey Matching > XC	90 > 2016-2021	> Smart key				Ē	12.09V
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Operation Guide			Smart ke	evs added				
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Read CEM security data								
	N	o		YES				
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Volvo								
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Figure 22

2) After completing the action 'Turn the START knob to the right for one time and then release it', click [OK] to go to the next step.

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						C	QPlease en	ter keyword
Operation Guide			Sma	rt kevs addec	1			
			Prompt					
Smart keys all lost		turn the START lease it.	r knob to the rig	e and				
Read CEM security data								
		CANCEL		ОК				
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Figure 23

3) A prompt is displayed to load CEM security data, click [OK] to load the anti-theft data.

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				Q Please enter	keyword
Operation Guide		Smart keys added			
	Pr	ompt			
Smart keys all lost	Click [OK] to load the CEM so when CEM security data was		e		
Read CEM security data			_		
		01/			
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	Figu	ıre 24			

4) Select the read data file, here we select file XC90_2020_CEM_IMMODATA.bin(see Figure 25, Figure 26

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File operation	f	\bigcirc	
VOLVO V10.01 > Anti-Theft Key Matching > XC90 > 2016-2021 > Smart key			🗄 12.09V
Backup File Name			
Launch_SmartKey_Prtl_L0004_CEM-TYPE2_EEPROM.bin			
test1.bin			
XC90_2020_CEM_IMMODATA.bin			
Launch_SmartKey_Prtl_L0002_CEM_SPC5748G_IMMODATA.bin			
XC90_2020_CEM_IMMODAT.bin			
Exit			
Volvo			
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Figure 25			

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Launch_SmartKey_Prtl_L00	04 CEM-TYPE2	EEPROM.bin)					
		Inforn	nation					
test1.bin								
XC90_2020_CEM_IMMOD/	Selected File Is	s:XC90_2020_(CEM_IMMOD	OATA.bin				
Launch_SmartKey_Prtl_L0	NO			YES				
XC90_2020_CEM_IMMODA	I.bin							
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5) It's prompted to put the key to be matched into the induction area, and other intelligent keys are taken out of the car. Click [OK] to perform the next step.

File operation VOLVO V10.01 > Anti-Theft Key Matching > XC90 > 2016-2021 > Smart key Backup File Name Launch_SmartKey_Prtl_L0004 CEM-TYPE2 EEPROM.bin test1.bin Please place a smart key to be matched in the sensing area (generally the sensing area is at the position marked with a key on the cup holder), take other keys out of the vehicle. Launch_SmartKey_Prtl_L OK XC90_2020_CEM_IMMODAL.DIN Exit	11:46 ৬ 🛞			0	♥⊿ 🖬 62%
Backup File Name Launch_SmartKey_Prtl_L0004 CEM-TYPE2 EEPROM.bin rest1.bin XC90_2020_CEM_IMMOD Launch_SmartKey_Prtl_L CK XC90_2020_CEM_IMMODAI.Din Exit	File operation		A		P
Launch_SmartKey_Prtl_LU004 CEM-TYPE2 EEPROM.bin test1.bin Prompt XC90_2020_CEM_IMMOD Please place a smart key to be matched in the sensing area (generally the sensing area is at the position marked with a key on the cup holder), take other keys out of the vehicle. Launch_SmartKey_PrtLL OK XC90_2020_CEM_IMMOD-XI.DIN Exit	VOLVO V10.01 > Anti-Theft Ke	ey Matching > XC90 > 2016-2021 > Smart key			🗄 12.09V
test1.bin Please place a smart key to be matched in the sensing area (generally the sensing area is at the position marked with a key on the cup holder), take other keys out of the vehicle. Launch_SmartKey_Prtl_L OK XC90_2020_CEM_IMMODAT.DIN Exit	Backup File Name				
test1.bin Please place a smart key to be matched in the sensing area (generally the sensing area is at the position marked with a key on the cup holder), take other keys out of the vehicle. Launch_SmartKey_Prtl_L OK XC90_2020_CEM_IMMODAL.DIN Exit	Launch_SmartKey_Prtl_L0	004 CEM-TYPE2 EEPROM.bin			
XC90_2020_CEM_IMMOL Please place a smart key to be matched in the sensing area (generally the sensing area is at the position marked with a key on the cup holder), take other keys out of the vehicle. Launch_SmartKey_Prtl_L OK XC90_2020_CEM_IMMODA1.DIN Exit		Prompt			
XC90_2020_CEM_IMMOE with a key on the cup holder), take other keys out of the vehicle. Launch_SmartKey_Prtl_L OK XC90_2020_CEM_IMMODAL.DIN Exit	test1.bin				
OK XC90_2020_CEM_IMMODAI.bin Exit	XC90_2020_CEM_IMMOE	with a key on the cup holder), take other keys out o			
XC90_2020_CEM_IMMODAI.bin Exit	Launch_SmartKey_Prtl_L	OK			
	XC90_2020_CEM_IMMOD				
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	Volvo				
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6) Wait for the key to be matched. If the key is matched successfully, a message will be displayed indicating that the key is matched successfully. If you need to continue to match the new key, click [OK] and perform Step 5). If not, please click [CANCEL] to exit (See Figure 28, Figure 29)

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Operation Guide		Smart keys added				
	Pro	mpt				
Smart keys all lost	Key matching succeeded. Do you want to match the ne	ext key?				
Read CEM security data (
	CANCEL	ок				
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Figure 28

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Operation Guide		Smart keys added				
	Pro	ompt				
Smart keys all lost	Successfully matched!					
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Figure 29

Statement:

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