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Introduction

Hardware Configuration home

The hardware configuration for Mercedes-Benz is as shown in Figure 01.



Figure 01

Configuration for Mercedes-Benz Diagnosis (Figure 01)

ltem	Name	Descriptions	Item	Name	Descriptions
1	X-431 main unit	To display operation buttons, test result, help information, etc.	8	[Smart-3] connector	To diagnose vehicles with 16PIN or 8PIN rectangular diagnostic socket
2	MINIPRINTER	To print test result. (optional)	9	Power cord	To connect the AC 100-240V outlet and the power adapter.
3	CF cartridge	To store diagnostic software and data	10	Cigarette lighter cable	To get power from the vehicle cigarette lighter
4	USB cable	To connect CF card reader/writer and computer	11	Battery cable w/two clips	To get power from the vehicle battery
5	CF card reader/writer	To read or write data on the CF card	12	Power adapter	To convert 100-240V AC power into 12V DC power.
6	[Smart OBDII-16] connector	To diagnose vehicles with OBDII-16PIN trapezoid diagnostic socket	13	Main cable	To connect the diagnostic connector and SMARTBOX
7	[Mercedes - Benz - 38] connector	To diagnose Mercedes-Benz vehicles with 38PIN diagnostic socket	14	SMARTBOX	To perform vehicle diagnosis

Ports and Indicators

See Figure 02 for X-431 connection ports and indicators.



home

1	Printer SEL indicator (printer readiness)
2	Printer power indicator
3	Printer SEL button (printer readiness)
4	Printer FL button (paper feed)
5	Parallel communication port for connecting printer to main unit
6	Power input for printer
7	Parallel communication port for connec ting main unit to printer
8	Power output of main unit.
9	Hotkey of main unit
10	Power switch of the main unit.
11	Power input of main unit
12	Serial communication port of main unit
13	Power output of SMARTBOX
14	Serial communication port of SMARTBOX
15	SMARTBOX power indicator
16	Indicator to show SMARTBOX sending data to the main unit
17	Indicator to show SMARTBOX receiving data from the main unit
18	Indicator to show SMARTBOX sending data to ECU
19	Indicator to show SMARTBOX receiving data from ECU
20	SMARTBOX data port

Printer Operation

Mounting Paper

the paper.

<u>home</u>

home

MINIPRINTER uses heat sensitive paper with size of 30×57 mm (internal hole 7mm). Refer to Figure 03a to Figure 03d for mounting

1. Open the paper lid on the back of the printer. See Figure 03a.



Figure 03a

2. Take out the spindle and mount the paper scroll onto the spindle. See Figure 03b.



Figure 03b

3. Put the paper spindle into the printer with correct direction. The paper may not be fed if the direction is wrong. See Figure 03b and Figure 03c.



4. Open the side plate, pull up the pressing rod and lead the paper into slot. Turn the feed knob clockwise until the paper comes

out of the outlet. See Figure 03d.



Figure 03d

5. Push down the pressing rod, mount the side plate, attach the paper lid, and then connect the printer to the X-431 main unit.

Printing Test Result

home

There are two indicators on the printer:

1. [SEL] : to show the readiness of the printer.

2. [POWER] : the power indicator of the printer.

If the [SEL] indicator is not lit, you can press the [SEL] button to turn it on and make the printer ready.

When the [SEL] indicator is lit, it shows that the printer is ready. Click the [PRINT] button (if it appears) on the screen of X-431 main unit to print the test result.

Explanation of Buttons home

[POWER]	Power button
[HOTKEY]	Hot key. Press it to calibrate the screen after the machine is turned on. Or press it to enter the vehicle diagnosis interface after X-431 is started.
[SEL]	To select the printer. When [SEL] indicator is lit, the printer is ready to print. If [SEL] indicator is not lit, the printer is not able to print.
[FL]	Paper-feed button.

Button Descriptions

<u>home</u>

The main buttons on the operation interface and their functions are as follows:

[BACK]: to return to the previous interface.

[START]: to do the next operation.

[EXIT]: to exit the diagnostic program.

[OK]: to confirm and execute.

[CANCEL]: to cancel present operation and return to the previous interface.

[**PAGE UP**]: to display the previous page. It is inactive if the current page is the first page.

[**PAGE DOWN**]: to display the next page. It is inactive if the current page is the last page.

[HOME]: return to the main interface.

[PRINT]: to print the test result.

[BOX INFO]: to show the version information of SMARTBOX.

[HELP]: to display the help information.

[**RETRY**]: to do the unfinished operation once again.

Conditions for Test home

- The voltage of vehicle battery should be 11-14V. The rated voltage of the X-431 is 12V.
- Turn off all electric devices such as A/C, headlight, stereos etc.
- The throttle should be in the closed position.
- The ignition timer and idle speed should be in the standard range; the water temperature should be 90-110 and the transmission oil temperature should be 50-80.

Select Diagnostic connector

- Select the [Benz-38] connector for 38PIN diagnostic socket, or
- Select [Smart OBDII-16] connector for 16PIN trapezoid diagnostic socket, or
- Select [Smart-3] connector for 16PIN or 8PIN rectangular diagnostic socket.

Note:

In [Smart-3] connector, the red probe is for power , black probe for grounding and yellow probe for signal.

Diagnostic Socket Location

- The 16PIN trapezoid diagnostic socket is located in the cab under the instrument.
- The 38PIN diagnostic socket is in the engine compartment, passenger side, near the strut tower.
- The 16PIN or 8PIN rectangular diagnostic socket is located near the firewall of the vehicle.

Pin Definitions

home

16PIN Diagnostic Socket

The 16PIN trapezoid diagnostic socket is as shown in Figure 04.



Figure 04

DIN definition of	16 DINI ORDII	diagnostic sockat

PIN	Definition
1	Two way communication line
2	Not used
3	Not used
4	Body ground
5	Signal ground
6	CAN interior bus (H)
7	Two way communication line
8	Ignition signal
9	Two way communication line
10	Not used
11	Two way commu nication line
12	Two way communication line
13	Two way communication line
14	CAN interior bus (L)
15	Two way communication line
16	Battery voltage

16PIN rectangular diagnostic socket

The 16PIN rectangular diagnostic socket is as shown in Figure 05.



PIN definition of 16PIN rectangular diagnostic socket

PIN	Definition
1	Body ground
2	On-board diagnostic switch
3	CIS-E/DM
4	EDS/LED
5	ASD
6	AB
7	AC(124)/RB(129)
8	DI/HFM, SFI, MFI /DMS
9	ADS /RB(124)
10	RST(129)/speed signal
11	ATA
12	IRCL
13	EATC
14	EA(124)/ISC(124)/ESCM(129)/CC
15	Not used
16	Positive pole of power

38PIN Diagnostic Socket

The 38PIN diagnostic socket is as shown in Figure 06.



PIN definition of 38PIN diagnostic socket

PIN	Definition
1	Body ground (or battery ground)
2	Ignition signal

4ENG ECU (M120 right), IGN ECU, dies ENG ECU5LH engine ECU (M120 left)6ABS/ASR7Electronic throttle/CC /Idle Control8Comprehensive ECU9ASD10Auto transmission11ADS12PML, SPS13Not used; RPM signal (LH & HFM - direct ignition)14Not used; Percentage diagnosis (LH-right)15Dash board; Percentage diagnosis (LH-left)16A/C
 ⁴ ENG ECU ⁵ LH engine ECU (M120 left) ⁶ ABS/ASR ⁷ Electronic throttle/CC /Idle Control ⁸ Comprehensive ECU ⁹ ASD ¹⁰ Auto transmission ¹¹ ADS ¹² PML, SPS ¹³ Not used; RPM signal (LH & HFM - direct ignition) ¹⁴ Not used; Percentage diagnosis (LH-right) ¹⁵ Dash board; Percentage diagnosis (LH-left) ¹⁶ A/C
 5 LH engine ECU (M120 left) 6 ABS/ASR 7 Electronic throttle/CC /Idle Control 8 Comprehensive ECU 9 ASD 10 Auto transmission 11 ADS 12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
 6 ABS/ASR 7 Electronic throttle/CC /Idle Control 8 Comprehensive ECU 9 ASD 10 Auto transmission 11 ADS 12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
 7 Electronic throttle/CC /Idle Control 8 Comprehensive ECU 9 ASD 10 Auto transmission 11 ADS 12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
8 Comprehensive ECU 9 ASD 10 Auto transmission 11 ADS 12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
9 ASD 10 Auto transmission 11 ADS 12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
10 Auto transmission 11 ADS 12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
11 ADS 12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
12 PML, SPS 13 Not used; RPM signal (LH & HFM - direct ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
13Not used; RPM signal (LH & HFM - direct ignition)14Not used; Percentage diagnosis (LH-right)15Dash board; Percentage diagnosis (LH-left)16A/C
13 ignition) 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
 14 Not used; Percentage diagnosis (LH-right) 15 Dash board; Percentage diagnosis (LH-left) 16 A/C
15Dash board; Percentage diagnosis (LH-left)16A/C
16 A/C
17 EZL (M120 right), TD signal (HFM & 140
RPM signal (LH)
18 EZL (M120 left)
19 CARB.DM
20 CLS, PSE
21 Additional equipment (slide roof control)
22 Additional equipment (rollover bar cont
²² module)
23 EDW
24 Not used
25 Not used
26 Not used; ASD
27 Not used
28 Not used
29 Additional memory; Not used
30 SRS; AB/ETR
31 Infrared door lock
32 Not used
33 Travel ECU; Not used
34 Not used
35 Not used
36 Assistant heater
37 Not used
38 Not used

8PIN rectangular diagnostic socket

The 8PIN rectangular diagnostic socket is as shown in Figure 07.



PIN definition of 8PIN rectangular diagnostic socket

PIN	Definition
1	Body ground
2	Ignition signal/Press button
3	Diagnosis percentage
4	Engine trouble code/LED
5	ASD
6	SUS trouble code
7	A/C trouble code
8	Ignition control system

Connection

home

Refer to Figure 08 and Figure 09 for 38PIN and 16PIN trapezoid diagnostic sockets connection.





Figure 09

- Insert the CF cartridge into the CF cartridge slot, let the side printed with "X-431" be downward, and make sure the cartridge is fully seated.
- Insert one end of the main cable into the diagnostic socket on SMARTBOX.
- Connect the other end of the main cable to the selected diagnostic connector.
- Connect the other end of the diagnostic connector to the vehicle diagnostic socket.

Note:

If the power supply on vehicle diagnostic socket is insufficient or the power pin is damaged, you can get power in the following ways:

- ? From cigarette lighter: insert one end of the cigarette lighter cable into the lighter socket in vehicle and connect the other end to the power connector of X431 main cable.
- ? From battery: clamp the two clips of battery cable on the positive and negative poles of battery and insert another end of the cable into the power connector of X-431 main cable.
- ? From power adapter: connect the power adapter to the 100-240V AC outlet with power cord. Insert the 12V DC plug of power adapter into the power connector of X-431 main cable

If the diagnostic socket is rectangular 16PIN or 8PIN, make the connection in the following way:

- Earth the black probe of the [Smart-3] connector. It means that plug the black probe of the connector into jack #1 of the 8PIN or 16PIN diagnostic socket.
- Connect the red probe of the [Smart-3] connector to the power in the following ways:
 - 1. For 16PIN rectangular diagnostic socket, plug the red probe of the connector into jack #16 of 16PIN diagnostic socket.
 - 2. For 8PIN rectangular diagnostic socket, it is necessary to get power by means of battery cable or cigarette lighter cable as described above.
 - Connect the yellow probe of the [Smart-3] connector to signal cable. Refer to the screen prompts for specific jack.
- Connect the other end of [Smart-3] connector to the main cable. Then connect the main cable to SMARTBOX.

Operation

home

Entering Function Menu

After connection, press **[POWER]** key to start X-431.

After starting the main unit, press [HOTKEY] (or click **Ştart**] button on **the main menu**, and select [GAG] [GD Scan] on the pop-up menu), the screen will display the home page of vehicle diagnosis as shown in Figure 10.



Button descriptions:

[QUIT]: to exit the diagnostic program. [BOX INFO.]: to display hardware and software version of SMARTBOX. [HELP]: to display help information. [START]: to start the diagnosis.

Click **[START**] button, the screen will display the vehicle make menu as shown in Figure 11.



Button descriptions:

[BACK]: to return to the previous interface. [PAGE UP]: to display the previous page, it is inactive if the current page is the first page. [PAGE DOWN]: to display the next page, it is inactive if the current page is the last page. [HELP]: to display the help information.

Click the icon of Mercedes-Benz on the vehicle make menu, the screen will display as shown in Figure 12.



Click [BENZ V10.01 All Systems], the screen will display as shown in Figure 13.

SELECT DIAG. SOFTWARE VER.					
BENZ V10.0	BENZ V10.01 All Systems				
The software can diagnose the elec. control sys. of MB up to 2002,include ENGINE/CHASSIS/BODY and other parts. The operation is the same as the original scan tool.					
PAGE UP PAGE DOWN OK					
	E	BACK			HELP
Figure 13					

The software can diagnose the electronic control systems of Mercedes-Benz up to 2000, including ENGINE/CHASIS/BODY and other parts. The operation is the same as that of the original scan tool.

Click [OK] button, X-431 begins reset and check the SMARTBOX, and download the

diagnostic program from the CF cartridge. After download, he screen will display as shown in Figure 14.

INITIALIZATION OF S	MARTBOX
Resetting SMARTBOX	[SUCCESS]
Checking SMARTBOX	[SUCCESS]
Downloading program	[SUCCESS]
ΟΚ	



Button descriptions:

[OK]: to go on test.

Digital Diagnosis

<u>home</u>

When the initialization is finished, click **QK**] button, the screen will display **the chassis menu** of Mercedes-Benz vehicle. See Figure 15.

SELECT MENU			
107			
124			
124 034/03	36		
126			
129(Up to	08/99)		
129(As of	09/99)		
140			
163			
PAGE UP PAGE DOWN			
НОМЕ	BACK	PRINT	HELP
Figure 15			

Click [PAGE DOWN] or [PAGE UP] to find the item corresponding to the tested vehicle. Then

click the item to enter the next menu.

Note:

- ? Now we take [220] (Chassis) [Gasoline engine] [Left-hand steering] [220.065.S320] [Control units] [Drive] as example to explain the diagnosis steps.
- ? There are too many models and systems for MERCEDES-BENZ. It is not possible and not necessary to list the test steps for all of the models and systems. The test procedures for different models and systems are similar. X-431 displays tips and help information. User can refer to the example or the tips to perform test for different models and systems.

Click [PAGE DOWN] to find [220] and dick it. The screen display will be as shown in Figure 16:

SELECT MENU				
Gasoline e	ngine			
Diesel enq	Diesel engine			
PAGE UP PAGE DOWN				
НОМЕ	BACK	PRINT	HELP	
Figure 16				

Button description:

[PRINT]: to print the test result (this function is available only when the word becomes black.).

Click **[Gasoline engine]**, the screen display will be as shown in Figure 17:

SELECT MENU			
Right-hand	d steering		
PAGE UP PAGE DOWN			
HOME	BACK	PRINT	HELP
Figure 17			

Click [Left-hand steering], the screen will display the 220 chassis menu, as shown in Figure 18:

SELECT MENU				
220.063 %	280			
220.065 %	320			
220.070 S	430			
220.075 S500 S55 AMG				
220.073 S	220.073 S55 AMG			
220.165 %	320			
220.170 S4	220.170 \$430			
PAGE UP PAGE DOWN				
HOME	BACK	PRINT	HELP	
Figure 18				

There are two pages showing the menu of 220 chassis. Click [PAGE DOWN] to display the second page, as shown in Figure 19:

SELECT MENU				
220.175 SS S55 AMG	500			
220.178 50	500			
220.173 S	55 AMG			
220.875 %	500 LL			
220.878 Se	500 LL			
PAGE UP PAGE DOWN				
HOME	BACK	PRINT	HELP	
Figure 19				

Click [220.065.S320] that in the 220 chassis menu. The screen display will be as shown in Figure 20:

SELECT MENU				
Functions	Functions covering all control modules			
Control ur	Control units			
PAGE UP PAGE DOWN				
НОМЕ	BACK	PRINT	HELP	
Figure 20				

The difference between these two items is in the classification method of system. For easy operation, usually select [Control units].

Click [Control units]. The screen will display the system classification menu, as shown in Figure 21:

SELECT MENU				
Drive	Drive			
Chassis				
Drive auth	orization			
Central lo	ocking			
Communicat	ion and ir	nformation	systems	
Supplement	al restra	int system:	3	
Heating,ve control	Heating,ventilation,cooling,climate control			
PAGE UP PAGE DOWN				
НОМЕ	BACK	PRINT	HELP	
	Figu	re 21		

Note:

Different chassis may have different system classification menu.

Click [Drive], the screen will display the menu of driving system, as shown in Figure 22:

SELECT MENU			
Transmissi	ion		
ME2-SFI-Mo	otor electi	conics	
EIS-Electi DAS 3)	conic ignit	tion switch	n ELCODE (
ICM-Instrument cluster with maintenance interval display			
AAC-Automatic air conditioning			
PAGE UP PAGE DOWN			
НОМЕ	BACK	PRINT	HELP
	Figu	re 22	

Click [ME2-SFI-Motor electronics]. The screen display will be as shown in Figure 23:



Follow the tips on the screen to switch on the ignition. Then click [OK] button to perform test. Click [CANCEL] to return to the previous interface.

Note:

- ? It may be necessary to start the engine when testing some types of vehicle.
- ? If the test fails with the ignition switched on, you can try the test again after the engine is started.

After turning on the ignition, click [OK]. A moment later, X-431 displays the function menu relating to the tested engine model, as shown in Figure 24:

ME2.8				
Control un	nit version	a and a second se		
Read fault	Read fault memory			
Clear faul	lt memory			
Actual val	Actual values			
Actuations	3			
Control ur	nit adaptat	tions		
PAGE UP PAGE DOWN				
НОМЕ	BACK	PRINT	HELP	

Figure 24

	ESM			
Control un	nit version	2		
Read fault	t memory			
Clear faul	lt memory			
Actual val	lues			
Actuations	3			
PAGE UP PAGE DOWN				
HOME	BACK	PRINI	HELP	
(Start)	ф с	¥ 🔆	🖽 17:32	

Control un	it version
Control unit MB No.: 220 Supplier: D Hardware sta Software sta Diagnosis id	: ESM 5451232 elfi tus: 47/01 tus: 17/00 ent: 0/10
OK	FRINI
Start	🕻 🔆 🖼 17:32

Figure26

ESM SYSTEM

<u>home</u>

In ESM system following functions can be selected for running:

- Control unit version
- ✓ Read fault memory
- ∠ Actual values
- \measuredangle Actuations

Click corresponding item to perform the function test.

Control Unit Version

<u>home</u>

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure26.



Figure27

Clear fault memory
Switch off ignition.
ОК
Start 🗍 📭 🔆 🚟 14:30

Figure28

Read Fault Memory

home

Click [**READ FAULT CODE**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure 27 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.
- ? Click [ok] to return to the function menu.

Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure 28:

Clear fault memory
low is clearing fault memory , please Wait
Start 🗊 🗣 😵 🖽 14:30

Clear fault memory
Erase code succeeded!
OIK
Start 🗍 🖓 🔆 📾 14:30

Figure30

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure29:

After the fault code is cleared, the screen will show the related message. Click [OK] to return to the function menu.

SELECT DATA ITEM				
014 voltaç	ge supply	(KI.15)		
015 back l	light			
012 shift	lever reg	ulation		
007 gently	y press but	tton 'p	ositive'	
008 gently press button 'negative'				
004 'shift lockup' function				
001 cut-off solenoid valve status				
009 S16/5 (drive program switch)				
PAGE UP PAGE DOWN OR				
HOME BACK PRINT HELP			I HELP	
Start)	þ c	v 🔅	(🛛 🚟 17:34	

Figure31

DATA STREAM					
014 volta)	014 voltage supply (KI.15 0.0 V)				
012 shift lever -P- regulation					
PAGE UF	PAGE UP PAGE DOWN GRAPHIC-1			RAPHIC-1	
HOME	BA	ж	PRIN	Т	HELP
(Start)	ф	Ę	s X	£.	🖽 17:34

Figure32

Read Data Stream

home

Click [Actual values] that in the function menu. The screen will display the list of data

streams, as shown in Figure 31 There is more than one page for the list. Click

[PAGE UP] or [PAGE DOWN] to turn the page. Figure 31 shows the first page.

For example, select 2 items -- [Voltage supply] and [Shift lever] then click [OK]. The screen will display the real-time values of these 4 items, as shown in Figure 32:

Note:

- ? When clicking [DIGITAL] in the interface, the screen will display the real-time value of the data stream again.
- ? The three display mode -- [DIGITAL], [GRAPHIC-1] and [GRAPHIC-2] can be switched in turn.



Actuations					
1.R/P-lock	up soleno:	id valve			
2.shift-re	eleased				
3.backup l	light				
PAGE UP PAGE DOWN					
HOME	BACK	PRIMI	HELP		
Start)	ф с	¥ 🔆	₩ 17:35		

Figure34

Click **[GRAPHIC-1]** in the interface shown in Figure 32. The screen will display the waveform for one data stream item. See Figure 33.

Click [PAGE DOWN] to display the waveform of the next data stream item.

Actuations

<u>home</u>

Click **[Actuations]** in the function menu. The screen will display a list of actuations, as shown in Figure 34:

ACTUATION TEST						
cut-off so status	olenoid valve inactive					
shift leve	er regl	latio	n	-P-		
hint: shift lever in D position or N position start engine vehicle drive.						
F3:cut-off solenoid valve activated. F4:cut-off solenoid valve not work. F12:cut-off solenoid						
PAGE UP PAGE DOWN PRINI						
FЗ	F4		F12		EXIT	
Start)	ф		- C	Σ÷	= 17: 33	5

Click [**R/P-lock solenoid valve**] then the screen will display a list of actuations, as shown in Figure35:

Figure35

ACTUATION TEST					
cut-off solenoid valve inactive status					
shift leve	er regulat:	ion	-P-		
hint: shift leve position start eng: vehicle mu F3:cut-off activated. F4:cut-off not work. F12:cut-off	hint: shift lever must be in P position start engine vehicle must be stop. F3:cut-off solenoid valve activated. F4:cut-off solenoid valve not work.				
PAGE UP PAGE DOWN PRINT					
FЗ	F4	F12	EXIT		
Start	þ c	r X	∑ 🖽 17:36		

Click **[Shift released**] that in figure34 then the screen will display a list of actuations, as shown in Figure36:

Figure36

ACTUATION TEST					
back light	ack light ON				
F3:back light working. F4:back light not work. F12:back light return.					
PAGE UP PAGE DOWN PRINT					
F3	F	4	F12		EXII
Start)	ф	0	r X	λ	🖽 17:36

ESP				
Control ur	nit version	2		
Read fault	: memory			
Clear faul	lt memory			
Actual val	lues			
Actuations	3			
PAGE UP PAGE DOWN				
HOME	BACK	PRIMI	HELP	
(Start)	ф с	v 🔆	₩ 3 17 : 41	

Figure38

Click **[Shift released]** that in figure34 then the screen will display a list of actuations, as shown in Figure37:

ESP SYSTEM

home

In ESP system following functions can be selected for running:

- Control unit version
- Clear fault memory
- 🖉 Actual values
- $\not { \mbox{ Actuations }}$

Click corresponding item to perform the function test.

Control un	it version
Control unit MB No.: 031 Supplier: B Hardware sta Software sta Diagnosis id	: ESP 5454132 osch tus: 14/01 tus: 14/01 ent: 0/00
OK	PRINI
Start	😵 🔆 🖼 17:42

TROUBLE CODE					
C1101 I -006 s J	C1101 L6/2 (right front Stored -006 speed sensor): Implausible wheelspeed				
PAGE UP PAGE DOWN					
HOME BACK PRINI HELP					
(Start	:)[<u>р</u>	ц,	Ŷ	📇 17:42

Figure40

Control Unit Version

home

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure 39:

Read Fault Memory

home

Click [**READ FAULT CODE**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure 40 shows an example.

Note:

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.
- ? Click [BACK] to return to the function menu.



Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure41:

Clear fault memory				
low is clearing fault memory , please mait				
Start 🗍 📭 🔆 🚟 14:30				

Figure42

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure42:



F	İq	ur	'e4	13

SELECT DATA ITEM					
060 KI.87	060 KI.87				
045 Compone NO contact	nt 39/1	(Stop 1	amp switch),		
073 Compone NC contact	nt S9/1	(Stop 1	amp switch),		
023 L6/1 (1	eft fron	t speed	sensor)		
021 L6/2 (r	021 L6/2 (right front speed sensor)				
020 L6/3 (1	eft rear	speed	sensor)		
022 L6/4 (right rear speed sensor)					
PAGE UP PAGE DOWN OF					
HOME BACK PRINT HELP					
Start 🗍 📭 🔅 🚝 17:43					

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.

Read Data Stream

home

Click [**Actual values**] that in the function menu. The screen will display the list of data streams, as shown in Figure 44:

There is more than one page for the list. Click [**PAGE UP**] or [**PAGE DOWN**] to turn the page. Figure44 shows the first page.

SELECI DATA ITEM					
060 KI.87					
045 Compone NO contact	nt 39/1 i	(Stop la	amp switch),		
073 Compone NC contact	nt 39/1 ((Stop la	amp switch),		
023 L6/1 (1	eft front	speed	sensor)		
021 L6/2 (r	021 L6/2 (right front speed sensor)				
020 L6/3 (1	eft rear	speed :	sensor)		
022 L6/4 (r	ight ream	speed	sensor)		
PAGE UP PAGE DOWN OR					
HOME BACK PRINT HELP					
Start 🗊 📭 🔆 📾 17:43					

Actuations					
1 A7/3ml)	(High pres:	sure and re	etum pump		
2 Check n (High pres	n-on time ssure and n	of compone tetum pump	ent A7/3ml p)		
3 A7/3y6 hold press	(front left sure)	t solenoid	valve,		
4 A7/3y7 (front left solenoid valve, reduce pressure)					
5 A7/3y8 hold press	5 A7/3y8 (front right solenoid valve, hold pressure)				
6 A7/3y9 reduce pre	6 A7/3y9 (front right solenoid valve, reduce pressure)				
PAGE UP PAGE DOWN					
HOME BACK PRINI HELP					
(Start)	ф с	¥ 🔆	₩ 17:44		

Figure46

Select the corresponding item the screen will display the real-time values.

Actuations

<u>home</u>

Click **[Actuations]** in the function menu. The screen will display a list of actuations, as shown in Figure46:

ACTUATION TEST						
K40/2k4 (High return pump r	K40/2k4 (High-pressure return pump relay) OFF					
The speed of must be less	the vehicle than 10 km/h					
Component A7/3ml (High pressure and return pump) must not be switched on for more than 15 seconds. Test sequence: -Operate pushbutton ON. -Component A7/3ml (High pressure and return pump) is switched on and is heard to run.						
PAGE UP PAGE DOWN PRINI						
ON OFF EXIT						
(Start) 🗇	.	E 🖽 17:44				

ICM					
Control ur	nit version	2			
Read fault	: memory				
Clear faul	lt memory				
Actual val	lues				
Actuations	3				
Control ur	nit adaptat	tions			
PAGE UP PAGE DOUN					
HOME BACK PRINT HELP					
(Start)	ф с	v 🔆	₩ 17:48		

Figure48

X-431 Mercedes-Benz Diagnosis

Click [**R/P-lock solenoid valve**] then the screen will display a list of actuations, as shown in Figure47:

ICM SYSTEM

home

In ICM system following functions can be selected for running:

- Control unit version
- Clear fault memory
- 🖉 Actual values
- ∠ Actuations
- ✓ Control unit adaptations

Click corresponding item to perform the function test.

Control unit version				
Control unit: ICM MB No.: 2205402747 Supplier: Bosch Hardware status: 42/00 Software status: 12/02 Diagnosis ident: 5/202				
OK PRINI				
(Start) 🗇 🛛	😵 🔆 📾 17:49			

Figure49

Read faul	Read fault memory			
No fault	present			
OK PRINI				

Figure50

Control Unit Version

home

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure49:

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure 50 shows an example.

Note:

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu



Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure 51:

Clear fault memory				
Now is clearing Wait	fault	nenory	, please	
Start 🗍		×.	₩ 14:30	

Figure52

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure 52:



F	q	ur	еБ	3
	0			

SELECI DATA ITEM				
001 Current	kilomete	er read	ing	
002 Kilometer reading (Engine CAN bus)				
003 Fuel tam	nk level			
004 Fuel ta	nk level	minimu	ш	
006 Temperature unit				
007 Outside air temperature				
008 Language				
009 Unit of	vehicle	speed	indication	
PAGE UP	AGE UP PAGE DOWN OR			
HOME	BACK	BACK PRINT HELP		
Start 🗍 🗍] [s X	E 🖽 17:49	

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.

Read Data Stream

home

Click [Actual values] that in the function menu. The screen will display the list of data streams, as shown in Figure 54:

There is more than one page for the list. Click [**PAGE UP**] or [**PAGE DOWN**] to turn the page. Figure54 shows the first page.

SELECT DATA ITEM			
001 Current	t kilomete	er read:	ing
002 Kilomet	ter readir	ng (Eng:	ine CAN bus)
003 Fuel ta	ank level		
004 Fuel ta	ank level	minimu	D
006 Tempera	ature unit	E	
007 Outside air temperature			
008 Language			
009 Unit of vehicle speed indication			
PAGE UP PAGE DOWN OR			
HOME	BACK	BACK PRINT HELP	
Start 🗊 📭 🔆 🚟 17:49			

Actuations				
l Instrume	nt cluster	actuation	ນຮ	
2 Display display	test image	es on the l	rad	
3 Brightne	ess of inst	trument lig	ghting	
PAGE UP PAGE DOWN				
HOME	BACK	PRIM	HELP	
(Start)		\$	₩ 3 17:50	

Figure56

Select the corresponding item and click **[ok]** the screen will display the real-time values.

Actuations

<u>home</u>

Click **[Actuations]** in the function menu. The screen will display a list of actuations, as shown in Figure56:

ACTUATION TEST				
The following actuations can be performed: F3:Move instrument pointer. F4:Actuate light warning buzzer. F12:Stop				
PAGE UF	PAGE UP PAGE DOWN PRINT			
F3	F4	F12	EXII	
(Start)	ф	цэ 🕺	× 🖽 17:58	

ACTUATION TEST						
The following actuations can be performed: F3:Uneven columns F4:Even columns F5:Uneven lines F6:Even lines F7:Actuate color 'red'. F12:Stop						
	PAGE UP		PAGE	DOWN	PRIM	
<	F3		F4	F5	F6	>
Start 🗍 🗘 🐼 🚟 18:01						

Figure58

Click **[Instrument cluster actuations**] then the screen will display a list of actuations that can be performed, as shown in Figure 57:

Click [Display test images on LCD display]

that in figure56 then the screen will display a list of actuations that can be performed, as shown in Figure58:

[>]More function key

ACTUATION TEST						
Note: Start actuation.Wait 5 seconds. When the Stop pushbutton is pressed, the brightness of the lighting is again adjusted in line with the ambient brightness and the position of the potentiometer. The following actuations can be performed: F3:Minimum F4:MIDDLE F5:Maximum						
PA	GE UP	PAGE	PAGE DOWN PRINI			
<	F3	F4	F5	F5 F12 >		
(Sta	rt)[<u>ן</u>	v X		18:08	

Ca	ntrol unit	adaptatio	ns
l Read coo control ur	ding and ti nit	ransfer to	the new
2 Oil ser	vice		
PAGE	C UP	PAGE	DOWN
HOME	BACK	PRIMI	HELP
(Start)		¥ 🔆	₩ 18:13

Figure60

Click [**Brightness of instrument lighting**] that in figure56 then the screen will display a list of actuations that can be performed, as shown in Figure58:

[>]Press the key can display more function keys

Control Unit Adaptations

home

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure60:



Control	unit ada	aptatio	ms	
Replace the old new control unit Switch on igniti	control on.	unit	with	the
	OK			
Start 🕽 🗇	₽	ò	***	18:14

Figure62

Click [reading coding and transfer to the new control unit]. The screen display will be as shown in Figure61:

Turn off the ignition according to the tips on the screen and then click [OK]. The screen display will be as shown in Figure62:



Control unit	adaptations
Is the coding to be new control unit?	transferred to the
YES	NO
Start] 🗍 🛛	🕻 🔆 🖼 18:14

Figure64

After the ignition is turned on, click **[OK]**. X-431 starts the control unit adaptation. The screen display will be as shown in Figure63: *Note:*

- ? After the ignition is turned on, click [OK] to go on the operation.
- ? Click [CANCEL] to cancel the operation.

Click [**Oil service**]. The screen display will be as shown in Figure64:

AB				
Control ur	nit version	2		
Read fault	: memory			
Clear faul	lt memory			
Actual val	lues			
PAGE UP PAGE DOWN				
HOME	BACK	PRIMI	HELP	
(Start)	þ c	s x	🖽 10:54	

Control unit version			
Control unit MB No.: 202 Supplier: T Hardware sta Software sta Diagnosis id	: AB 8203326 EG tus: 16/93 tus: 25/93 ent: 1/01		
OK	PRIMI		
Start)[] [🕻 🔆 🖼 10:55		

Figure66

AB SYSTEM

<u>home</u>

In AB system following functions can be selected for running:

- Control unit version
- ✓ Clear fault memory
- ∠ Actual values

Click corresponding item to perform the function test.

Control Unit Version

home

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure66:



Figure67

Clear fault memory
Switch off ignition.
ОК
Start) 🗊 📭 🔆 🖼 14:30

Figure68

Read Fault Memory

<u>home</u>

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure67 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu

Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure

Clear fault memory
Now is clearing fault memory , please Wait
Start 🗍 🗣 🔆 🚟 14:30

Figure69

Clear fault memory
Erase code succeeded!
ar
Start 🗊 🗣 🔆 🖼 14:30

Figure70

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure69:

After the fault code is cleared, the screen will show the related message. Click [OK] to return to the function menu.
DATA STREAM					
SRS airbag malfunction -F- indicator lamp Alel5					
Airbag igr Driver	oiti	on ciro	ruit	-F-	
Airbag igr Front pass	niti seng	on ciro er	ruit	-F-	
ETR igniti Driver	ETR ignition circuit -F- Driver				
ETR ignition circuit -F- Front passenger					
Voltage -F-					
PAGE UP PAGE DOWN GRAPHIC-1					
HOME	F	BACK PRI		Т	HELP
(Start)	Ф	Ę	s X	λ	₩ 10:57

EIS					
Control ur	nit version	2			
Read fault	: memory				
Clear faul	lt memory				
Actual val	lues				
Actuations					
Control unit adaptations					
PAGE UP PAGE DOWN					
HOME	HOME BACK PRINT HELP				
Start 🗍 📭 🔆 🖼 11:16					

Figure72

Read Data Stream

home

Click [Actual values] that in the function menu. The screen will display the list of data streams, as shown in Figure 71:

There is more than one page for the list. Click [**PAGE UP**] or [**PAGE DOWN**] to turn the page. Figure 71 shows the first page.

EIS SYSTEM

home

In EIS system following functions can be selected for running:

- ∠ Actuations
- ∠ Control unit adaptations

Click corresponding item to perform the function test.

Control unit version		
Control unit MB No.: 210 Supplier: M Hardware sta Software sta Diagnosis ide	: EIS 5450208 arquardt tus: 12/00 tus: 42/98 ent: 0/09	
OK PRINI		
(Start) 🗇 🛛	😵 🔆 📾 11:16	

Figure73

Read fault memory			
No fault	present		
OK	PRIM		
(Start)[] [🕻 🔆 🖂 17:49		

Figure74

Control Unit Version

<u>home</u>

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure73:

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure 74 shows an example.

Note:

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu



Figure75

Clear fault memory			
Erase code succeeded!			
ak			
Start 🗊 🗣 🔆 🖼 14:30			

Figure76

Clear Fault Memory

<u>home</u>

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition. After the ignition is turned off, click [**OK**] to clear the fault memory. The screen will display the massage as shown in Figure75:

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.

SELECT DATA FIEM					
01 Front τ	Jipe	r combi	ination	SW:	itch S4
02 Vehicl control ad	spe ctiv	ed resp ated	ponsive	wij	per
03 Front τ	Jash	1			
04 Tum si	igna	l combi	ination	sw	itch S4
05 Cruise	con	trol s	vitch S	40	
06 Cruise control safety contact					
07 Voltage S40	e su	pply cı	cuise c	onti	rol switch
PAGE UP PAGE DOWN OF					
HOME	I	BACK PRINT HELP			HELP
Start 🗊 🗣 🔆 🚟 11:17					

Read Data Stream

home

Click [**Actual values**] that in the function menu. The screen will display the list of data streams, as shown in Figure 77:

There is more than one page for the list. Click [**PAGE UP**] or [**PAGE DOWN**] to turn the page. Figure 77 shows the first page

Fig	uur 077
- E I()	
1 19	

SELECT DATA ITEM					
01 Front v	01 Front wiper combination switch S4				
02 Vehicl control ac	speed tivat	resj ed	ponsive	wij	per
03 Front 6	ash				
04 Tum si	gnal	comb:	ination	SWI	itch S4
05 Cruise	contr	ol s	witch S	40	
06 Cruise control safety contact					
07 Voltage supply cruise control switch S40					
PAGE UP PAGE DOWN OK					
HOME	BA	BACK PRINT HELP			HELP
Start 🗊 📭 🔆 🚟 11:18					

Figure78

Select the corresponding item and click **[ok]** then the screen will display the real-time values.

Actuations			
1 CAN inte	erior		
PAGE UP PAGE DOWN			
HOME	BACK	PRIMI	HELP
Start)	þ c	\$	🖽 11 : 19

Actuations

home

Click **[Actuations]** in the function menu. The screen will display a list of actuations, as shown in Figure79:

Fig	ure79

ACTUATION TEST			
CAN high -F-			
CAN low -F-			
EIL 🗸	,		
PSE 🗸	,		
SAM 🗸			
LCP 🗸			
0CP 🗸	,		
dCM1 🗸	,		
PAGE UP PAGE DOWN PRINT			
START	STAFT EXIT		
Start 🗍 📭 🔆 🚟 11:19			

Figure80

Click [**CAN interior**] then the screen will display a list of actuations that can be performed, as shown in Figure80: Click [**START**] then start actuation test. Click [**EXIT**] then exit actuation test.

Control unit adaptations				
l Read coo control mo	l Read coding and transfer to new control module			
2 Read/cha	ange coding	3		
3 Activate	e EIS			
4 Unlock e transport	electric st protection	teering loo ,activate	:k	
PAGE UP PAGE DOWN				
HOME	BACK	PRIM	HELP	
(Start)		\$	₩ 3 11:20	

Control unit adaptations
Note 1:Only when replacing control modules 208 545 01 08 and 208 545 02 08 with 210 545 00 08,210 545 01 08, software version 8.3 also replace all the keys output for the vehicle.The previous keys do not operate at the EIS as of software version 8.3. Note 2:When replacing the EIS,inhibited keys should be enabled in the electric steering lock (workshop key).
OK
Start 🗊 🗣 🔆 🖼 11:20

Figure82

Control Unit Adaptations

<u>home</u>

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure81:

Click [1 read coding and transfer to new control module] in figure81. The screen display will be as shown in Figure82:



Control unit	adaptations
Replace control modu After replacing cont press OK key!	le! rol module,please
08	ζ.
(Start)D C	

Figure84

Click [**ok**] the screen display will be as shown in Figure83:

Click [**ok**] the screen display will be as shown in Figure84:



Control unit adaptations		
Transfer coding data module?	a to new control	
YES	NO	
Start)[] [🕻 🔆 🖼 11:21	

Figure86

Click [**ok**] the screen display will be as shown in Figure85:

Click [**ok**] the screen display will be as shown in Figure86: Click [**cancel**] then exit.

42



Control unit adaptations
Note 1:0nly when replacing control modules 208 545 01 08 and 208 545 02 08 with 210 545 00 08,210 545 01 08, software version 8.3 also replace all the keys output for the vehicle.The previous keys do not operate at the EIS as of software version 8.3. Note 2:When replacing the EIS,inhibited keys should be enabled in the electric steering lock (workshop key).
OK
Start 🗊 🗣 🔆 🖼 11:21

Figure88

Click [**yes**] the screen display will be as shown in Figure87:

Click [**ok**] the screen display will be as shown in Figure88:

Control unit adaptations				
02 LHS/RHS modelRight-hand steering				
03 Auxilia	ary fan (A,	/C) fitted	NO	
04 Rain se	ensor fitte	edYES		
06 ESAL left front seat adjustment,with Memory fittedN0				
07 ESAR right front seat adjustment, with Memory fittedN0				
08 SVMCM special vehicle multifunction control module (SVMCM version)Not present				
PAGE UP PAGE DOWN				
HOME BACK PRINT HELP				
Start 🗊 🗣 🔆 📟 11:21				

		03	Αu	xili	ary	fan	(A/C)	fi	tted	
1	YE:	5								
2	NO									
	PAGE UP PAGE DOWN									
	HO	ME		Bž	ACK		PRINT		HELP	
C	Sta	ərt	J	þ		₽.	ò		📇 11:2	7

Figure90

Click [**read / change coding**] in figure81. The screen display will be as shown in Figure89:

Click [03 Auxiliary fan (A/C) fitted]. The screen display will be as shown in Figure



Control unit adaptations
EIS: -is not activated
OK
Start 🗊 🗣 🔆 🖼 11:28

Figure92

Click [**Activate EIS**] in figure81. The screen display will be as shown in Figure91:

Click **[OK]** in figure91. The screen display will be as shown in Figure92:



Control unit adaptations
Switch off ignition! DO NOT switch on ignition!
OK
Start 🗍 🗘 😵 😹 11:29

Figure94

Click **[OK]** in figure92. The screen display will be as shown in Figure:

Click **[OK]** in figure93. The screen display will be as shown in Figure94:



Figure95

Control unit adaptations
ESTL: -is initialized
OK
Start 🗊 🗣 🔆 🖼 11:30

Figure96

Click **[OK]** in figure94. The screen display will be as show n in Figure:

Click [**OK**] in figure95. The screen display will be as shown in Figure: Click [**ok**] will return.



Control unit adaptations		
ESIL: -initialized -transport protect -not personalised Carry out personal	tion unlocked Lisation of ESTL?	
YES	NO	
Start] 🗍 🛛	🕻 🔆 📾 11:30	

Figure98

Click [**Unlock electric steering lock transport protection, activate**] in figure81. The screen display will be as shown in Figure97:

Click [**ok**] in figure97. The screen display will be as shown in Figure98:

Click [yes] will carry out, click [no] then exit.



EAG			
Control ur	nit version	2 C	
Read fault	: memory		
Clear faul	lt memory		
Actual val	lues		
Actuations			
Control unit adaptations			
PAGE UP PAGE DOWN			
HOME	BACK	PRIMI	HELP
Start 🗍 📭 🔆 🚟 09:18			

Figure100

If can't be carried out, the screen display will be as shown in Figure99: Click [**OK**] and return.

ETC SYSTEM

home

In ETC system following functions can be selected for running:

- ✓ Read fault memory
- ✓ Clear fault memory
- 🖉 Actual values
- ∠ Actuations
- ∠ Control unit adaptations

Click corresponding item to perform the function test.

Control unit version		
Control unit MB No.: 022 Supplier: S Hardware sta Software sta Diagnosis id	: EAG 5455132 iemens tus: 50/98 tus: 08/99 ent: 1/13	
OK	PRINI	
Start	🕻 🔆 🖂 09:18	

Figure101

TROUBLE CODE					
007	007 Control valve ¥3/1y2 discontinuity or N15/1				
PAGE UP PAGE DOWN					
HOM	E	BACK	PRINT	HELP	
Start] 🗊 🔹 滋 📾 09:18					

Figure102

Control Unit Version

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure101

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure102 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu



Figure103

Clear fault memory		
Erase code succeeded!		
OIK		
Start 🗊 🗣 🔆 🖼 14:30		

Figure104

Clear Fault Memory

<u>home</u>

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition. After the ignition is turned off, click [**OK**] to clear the fault memory. The screen will display the massage as shown in Figure103:

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.



Figure105

DATA STREAM					
01 Engine speed				185	58 mpna
02 Output shaft speed			ed	311,	7 mpmu
04 Corrected intake 8736 mbar manifold pressure				5 mbar	
07 Set value 210 % potentiometer					
09 Digital signals E GS				ŏ	
03 Intake manifold 7712 mbar				2 mbar	
05 Altitude pressure 47877 mbar					
PAGE UP PAGE DOWN GRAPHIC-1					
HOME	1	BACK PRI		Т	HELP
Start 🗍 📭 🔆 🚟 09:20					

Figure106

Read Data Stream

home

Click [Actual values] that in the function menu. The screen will display, as shown in Figure 105

Read Data Stream

home

Click **[OK]** infigure105. The screen will display the list of data streams, as shown in Figure 106:

There is more than one page for the list. Click [**PAGE UP**] or [**PAGE DOWN**] to turn the page. Figure106 shows the first page.

DATA STREAM						
01 Engine speed rpm 18559						
18558						
18557						
PAGE UP PAGE DOWN GRAPHIC-2						
HOME		BACK	PRIN	T	HELP	
(Star	t)	þ	C	r X	é	₩ 09:21

Actuations					
l Valve te	est				
2 Transmis	2 Transmission protection output				
PAGE UP PAGE DOWN					
HOME	BACK	PRIM	HELP		
(Start)		\$	₩ 09:21		

Figure108

Click [**graphic-1**], the screen display will be as shown in Figure107:

Actuations

home

Click **[Actuations**] in the function menu. The screen will display a list of actuations, as shown in Figure108:

ACTUATION TEST				
Valve test Y3/1 Condition :Speed 0 km/h Actuation takes appros.5 s				
PAGE UP PAGE DOWN PRINT				
STARI EXII				
Start 🗍 🗊	[r X	: 21	

ACTUATION TEST					
Transmission protection ON output Condition:Speed O km/h Transmission protection					
PAGE UP	PAGE DOWN	PRINT			
ON	OFF	EXII			
Start 🗍 🗇	rr X	★ E 09:23			

Figure110

Click [1 valve test], the screen display will be as shown in Figure109:

Click [START] will be started testing.

Click [**2 transmission protect output**] that in figure108, the screen display will be as shown in Figure110:

You can carry out [on] or [off] test here.

Control unit adaptations					
Initial st	Initial startup				
Adaptation) data				
resetting	of adaptat	tion data			
PAGE UP PAGE DOWN					
HOME	BACK	PRIM	HELP		
(Start)		r X	E 09: 26		

Actuations		
Note: Control module EGS u MB part number 029 5 ordered with Index 2 VIN (e.g.022 545 46- If a control module including MB part NG replaced with a cont of MB part NO. 030 5 code cannot be trans	np to and including 145 XXX must be 136 and citing the 132) EGS up to and 1. 029 545 XXX is 1701 module EGS as 1345 xxx the variant 156rred.	
OK	CANCEL	
(Start)[] [😮 🔆 🖂 09:26	

Figure112

Control Unit Adaptations

home

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure 111:

Click [Initial startup], the screen display will be as shown in Figure 112:

Actuations The following procedure will guide you through all steps required to perform a complete initial startup of system ETC Requirement. - The old control unit is still installed. - The new control unit must be available. You will be guided through the following steps: -Read coding and transfer to the new control unit. START process with OK 0K CANCEL 百 Start L) 0 **26 09:**26

Figure113

Actuations		
Coding has been read,Switch off		
OK		
(Start) 🗊 📭 🔆 🚟 09:27		

Figure114

Click **[ok**], the screen display will be as shown in Figure113:

Click [cancel] then exit.

Click [ok], the screen display will be as shown in Figure114:



Figure115

Enter system		
Switch on	ignition.	
OK	CANCEL	
Start 🗍 🗍 🛛	😵 🔆 🖼 09:27	

Figure116

Click $[\!\textit{ok}]\!$, the screen display will be as shown in Figure115:

Click $[\mathbf{ok}]$, the screen display will be as shown in Figure116:

Actuations		
Is the coding to be new control unit?	translatted to the	
OK	CANCEL	
(Start) 🗊 🛛	😵 🔆 📾 09:27	

Figure117

Actuations			
	Switch of	f	
	OK		
Start 🗍 🗇	4	¢	₩ 09:29

Figure118

Click [ok], the screen display will be as shown in Figure117:

Click [cancel] then exit.

Click [ok], the screen display will be as shown in Figure118:

Click [cancel] then exit



Figure119

Enter system			
Switch on ignition.			
OK CANCEL			
(Start) 🗊 🛛	🕻 🔆 🖾 09:30		

Figure120

Click $[{\rm ok}],$ the screen display will be as shown in Figure119:

Click $\left[\textbf{ok} \right]$, the screen display will be as shown in Figure120:



Figure121

Actuations			
Initial startup was fully completed.			
OK			
[Start] 🗊 🔹 🔆 🖽 09:30			

Figure122

Click $[\!\textit{ok}]\!$, the screen display will be as shown in Figure121:

Click [cancel] that in figure120 then exit

Click $[\mathbf{ok}]$, the screen display will be as shown in Figure122:

ACTUATION TEST			
01_1 Accel. 1	-258 Nm		
01_2 Accel. 1	2	24 Nm	
01_3 Accel. 1	330 Nm		
01_4 Accel. 1-2 258 Nm			
01_5 Accel. 1-2 306 Nm			
01_6 Accel. 1-2 -138 Nm			
02_1 Accel. 2-3 -258 Nm			
02_2 Accel. 2-3 24 Nm			
PAGE UP	PAGE DOWN	PRINI	
EXIT			
Start 🗍 🗘 😵 🔆 🚟 09:36			

Actuations			
Do you really wish to reset the adapation data?			
OK	OK CANCEL		
(Start)[] [😮 🔆 📾 09:37		

Figure124

Click [adaptation data] that in figure111, the screen will display the referenced data as shown in Figure123:

Click [resetting of adaptation data] that in figure111, the screen display will be as shown in Figure124:

Click [cancel] then exit

Click [ok] start to reset.



Figure125

KG			
Control unit version			
Read fault memory			
Clear fault memory			
Actuations			
Control unit adaptations			
PAGE UP PAGE DOWN		DOWN	
HOME	BACK	PRINI	HELP
[Start] 🗊 🔹 🔆 🖼 11:36			

Figure126

Click [ok] in here, complete resetting.

KG SYSTEM

home

In KG system following functions can be selected for running:

- \swarrow Control unit version
- Clear fault memory
- ∠ Actuations
- ∠ Control unit adaptations

Click corresponding item to perform the function test.

Control unit version				
Control unit: KG MB No.: 0325450032 Supplier: Siemens Hardware status: 03/01 Software status: 21/01 Diagnosis ident: 0/02				
OK	PRINI			
(Start) 🗊 🛛	😮 🔆 🖼 11:36			

Figure127

Read fault memory			
No fault present			
OK	PRIMI		
Start)[] [🕻 🔆 📾 11:37		

Figure128

Control Unit Version

home

Click [Control unit version] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure 127

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure128 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu



Figure129

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure129:

Clear fault memory		
Now is clearing fault memory , please wait		
Start 🗍 📑 🔆 🚟 14:30		

Figure130

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure130:



Figur e131

Actuations			
l Activatin of lift solenoids			
2 Transmitter card and antenna test			
PAGE UP		PAGE	DOWN
HOME	BACK	PRIM	HELP
[Start] 🗊 🗣 🔆 🖼 11:37			

Figure132

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.

Actuations

<u>home</u>

Click **[Actuations**] in the function menu. The screen will display a list of actuations, as shown in Figure 132:

Actuations			
1 Ll2(left front door keyless go lift solenoid)			
2 Ll2/2(Right front door Keyless go lift solenoid)			
PAGE UP PAGE DOWN		DOWN	
HOME	BACK	PRIM	HELP
[Start] 🗊 🗣 🔆 🖼 11:38			

Actuations		
Test requirement - Relevant fault codes exit or there is no complaint - Battery voltage is o.k - Fuse F4F58(fuse 58) ok - The voltage supply of the control module N69/5 (keyless go control module) is ok Status of the relevant fault codes:		
Fault Code 'B1361 L12(Left front door keyless Go lift solend):'not present.		
Test sequence: - Carry out actuation of component Ll2(Left front door Keyless Go lift solenoid).		
OK CANCEL		
(Start)[] [🕻 🔆 🖼 11:38	

Figure134

Click [activation of lift solenoids], the screen will display a list of actuations, as shown in Figure133:

Click [1 L12], the screen display as show in the figure:

ACTUATION TEST			
Voltage:Ll2(left front 0.0 V door keyless go lift solenoid)			
Specified value: 5.08. 8V F3: Reset voltage value of lift solenoid. F4: Actuatiion of lift solenoid F2: Next			
PAGE UP	PAGE DOWN	PRINI	
F3	F4	EXII	
Start 🗍	r 🗘	€	

Click [**ok**], the screen display as show in the figure 135:

[F3] Reset voltage value of lift solenoid

[F4] Actuation of lift solenoid

Figure135

Actuations		
Note: -This function is no case of transmitter A2157660406A2157 combination with the module with MB no. A 295458532.	ot possible in the cards with MB no. 7660706 in 2 Keyless Go control 40225459832 + AO	
OR CANCEL		
(Start)[] [😮 🔆 🖂 11:40	

Figure136

Click [transmitter card and antenna test] that in figure132, the screen will display a list of actuations, as shown in Figure136:

Actuations						
1 A2/3 door)	8 ()	xeyless	go	antenna,le	eft	front
2 A2/4 door)	0 (}	keyless	go	antenna,ri	ight	front
3 A2/3	5 ()	keyless	go	antenna,trunk)		
4 A2/3)	1 ()	ceyless	go	antenna,re	ear	bumper
PAGE UP PAGE DOWN		N				
HOME	C	BACK		PRIM	F	ÆLP
(Stari	t)	ф	Ę	r X	**	11:40

Click **[ok]**, the screen will display actuations items, as show in the figure137:

Figure137

Actuations		
The transmitter cards located in the transmission range of the antenna are addressed for 15s and indicate this by the LEDs flashing. There must not be a key inserted in the ignition lock of the vehicle.		
OK CANCEL		
(Start)[] [🕻 🔆 🖼 11:40	

Figure138

We introduce the process by the second item. Click [2 A2/40 (keyless go antenna, right front door)], then the screen display as show in figure138:

Actuations
The transmitter card located in the transmission area are address
Start 🖓 🖓 🖼 11:40

Control unit adaptations			
l Initial startup			
2 Control unit replacement			
3 Assign transmitter card to key track			
PAGE UP		PAGE	DOWN
HOME	BACK	PRINI	HELP
(Start)	ф с	v	📇 11:45

Figure140

Click [**ok**] then the screen display as show in figure 139:

It may take minutes.

Control Unit Adaptations

home

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure140:

Control	unit	adaptations	
---------	------	-------------	--

The following procedure will guide you through all steps required to perform a complete initial startup to system Keyless Go. You will be guided through the

 OK
 CANCEL

 OK
 CANCEL

Click [**Initial startup**] then the screen display as show in figure141:

Figure141

0

23 11:46

百

Start

Control unit adaptations		
Before replacing cor assignment of the tr must be read out and	ntrol unit KG the ransmitter cards 9 noted down.	
OK	CANCEL	
(Start)ញ [🖹 🔆 🖼 11:48	

Figure142

Click [**control unit replacement**] that in figure140 then the screen display as show in figure142:
ACTUATION TEST			
300 Transmitt for Keyless G	er card l Co Key trac	1	
301 Transmitt for Keyless G	er card 2 So Key track	1	
PAGE UP	PAGE DOW	1	PRINT
F2		E	XII
Start 🗍		ò	₩ 11:46

Control unit adaptations	
PAY attention to not -Switch off ignitior -Replace the old cor new control unit.	tes:). otrol unit with the
OK	CANCEL
(Start)[] [🕻 🔆 📾 11:49

Figure144

Click [assign transmitter to key track] then the screen display as show in figure143:

We introduce the process by the first item. Click [**300 Transmitter card 2 1for keyless go key track**], then the screen display as show in figure144:



Control unit adaptations
Please select the adaptation item ' Assign transmit card to key track', firstly do 'Transmitter card 1 for Reyless go' function,secondly do ' Transmitter card 2 for Keyless go' function.
OK
Start 🗍 🔂 😵 🔆 🚟 11:49

Figure146

Click [**ok**] then the screen display as show in figure145:

Click [**ok**] then the screen display as show in figure146:



Figure147

Control unit adaptations
Switch on ignition
OK
Start 🗊 🗣 🔆 🖼 11:50

Figure148

Click [**ok**] then the screen display as show in figure147:

Click [**ok**] then the screen display as show in figure148:



Control unit adaptations			
l Determine current transmitter card			
2 Cancel assignment and re-learn transmitter cards			
3 Transmitter card 1 for Keyless go			
4 Transmit	tter card 2	2 for Keyle	ess go
PAGE UP PAGE DOWN			
HOME	BACK	PRIMI	HELP
(Start)	þ c	\$ X	🖽 11:53

Figure150

Click [**ok**] then the screen display as show in figure149:

Click [**ok**] then the screen display as show in figure150:

Control unit	adaptations
Place the transmitte determined on the dr This takes about 30 There must not be a ignition lock of the	er card to be river's seat. seconds. key inserted in the e vehicle.
OK	CANCEL
Start 🗍 🗍 🛛	😵 🔆 📾 11:54

We introduce the process by the third item. Click **[Transmitter card 1 for keyless go]**, then the screen display as show in figure151:

Figure151

Control unit adaptations		
The transmitter cards located in the transmission area are located.		
OK		
Start 🗓 📭 🔆 🚟 11:54		

Figure152

Click [**ok**] then the screen display as show in figure152:

Control unit adaptations
Current assignment Transmitter card 1 is assigned to key trackl Transmitter card 2 is assigned to key trackl After erasing in the keyless go control module (N69/5) no assignment exists of the transmitter card to the key tracks of the electronic ignition switch control module (N73).Transmitter cards must then be reassigned. Cancel assignment between transmitter cards and key tracks?
OK
Start 🗍 🗘 😵 🚟 11:54

Control unit adaptations		
Assignment between tra and key tracks has bee	nsmitter cards n canceled.	
OK		
Start 🗍 🖓	🄆 🖼 11:55	

Figure154

Click [**ok**] then the screen display as show in figure153:

Click [**ok**] then the screen display as show in figure154:

Control (mit ad	aptatio	ms	
Assigned between key tracks has b two possibilitie assigning the pr cards or additio to the keyless g	transm een car s for l evious nal tra o contr	itte c celed. earnin transm nsmitt ol mod	ards ar There a g and itter er cara ule.	nd are ds
	OK			
Start 🗍 🗇	4	¢.	幽 11	L:55

ACTUATION TEST		
F3:Assignment between the transmitter cards and the key tracks is known.		
F4:Assignment between the transmitter cards and the key tracks is not known		
PAGE UP	PAGE DOWN	PRINT
F3	F4	EXII
Start 🕽 🗊		E 🖽 11:55

Figure156

Click [**ok**] then the screen display as show in figure155:

Click [**ok**] then the screen display as show in figure156:

You can carry out [F3] or [F4] in here.



We introduce the process by the F3 button. Click [**F3**], then the screen display as show in figure157:

Figure157



Click [**ok**] then the screen display as show in figure158:

Figure158

Control unit adaptations		
Current assignment Transmitter card 1 is assigned to key track49 Transmitter card 2 is assigned to key track49		
OK		
Start 🗍 🗊 🗣 🔆 📾 11:58		

Input the right key track and close the keyboard, click **[ok]**, then the screen display as show in figure159:

Figure159

Control unit adaptations				
Transmitte card l has been assigned to key				
OK				
Start 🗓 📭 🔆 🖼 11:58				

Figure160

Click [**ok**] then the screen display as show in figure160:



Control unit adaptations						
Current assignment Transmitter card l is assigned to key track49 Transmitter card 2 is assigned to key track49						
OIK						
Start 🗍 🗘 🔆 🖼 11:58						

Figure162

Click [**ok**] then the screen display as show in figure161:

Input the right key track and close the keyboard, click [**ok**], then the screen display as show in figure162: Click [**ok**] then finish.

KI					
Control unit version					
Read fault	: memory				
Clear faul	t memory				
Actual val	ues				
Actuations	3				
Control unit adaptations					
PAGE UP PAGE DOWN					
HOME BACK PRINT HELP					
Start 🗍 📭 🔆 🚟 10:16					

Control unit version						
Control unit: KI MB No.: 2025400748 Supplier: VDO Hardware status: 28/96 Software status: 04/96 Diagnosis ident: 0/16						
OK PRINT						
Start) 🗍 🛛	🔉 🔆 📾 10:16					

Figure164

EIS SYSTEM

home

In EIS system following functions can be selected for running:

- Control unit version
- ✓ Read fault memory
- ✓ Clear fault memory
- \land Actual values
- ∠ Actuations

Click corresponding item to perform the function test.

Control Unit Version

home

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure164:



Figure165

Clear fault memory
Switch off ignition.
OK
Start 🗇 📭 🔆 🚟 14:30

Figure166

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure165 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu

Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure166:

Clear fault memory					
Now is clearing fault memory , please Wait					
Start 🗊 📭 🔅 🖼 14:30					

Figure167

Clear fault memory					
Erase code succeeded!					
OIK					
Start 🗊 📭 🔆 🚟 14:30					

Figure168

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure167:

After the fault code is cleared, the screen will show the related message. Click $[\mathbf{OK}]$ to return to the function menu.

SELECT DATA FIEM					
Ol fuel tank capacity					
02 outside temperature					
03 Kl.58d					
04 refrige	eran	t/clear	ning flu	uid	status
05 clock time					
06 engine oil pressure					
07 seat be	elt	switch			
08 Kl.15					
PAGE UP PAGE DOWN OR					
HOME	F	BACK PRINT HELP			
Start 🗊 🗣 🔆 🖼 10:18					

Actuations					
l Light warning buzzer					
2 Gauges					
3 Display					
PAGE UP PAGE DOWN					
HOME BACK PRINT HELP					
Start 🗍 🗣 🔆 🚟 10:20					

Figure170

Read Data Stream

home

Click [**Actual values**] that in the function menu. The screen will display the list of data streams, as shown in Figure 169:

There is more than one page for the list. Click [**PAGE UP**] or [**PAGE DOWN**] to turn the page. Figure169 shows the first page.

Select the corresponding item and click **[ok]** the screen will display the real-time values.

Actuations

<u>home</u>

Click **[Actuations]** in the function menu. The screen will display a list of actuations, as shown in Figure 170:

ACTUATION TEST						
Light warning buzzer The light warning buzzer is actuated for about 1.5 seconds						
PAGE UP	PAGE	DOWN	PRINT			
ON	EXII					
Start 🗊 📭 🔆 🚟 10:21						

Click [**Light warning buzzer**] then the screen will display as shown in Figure171: Click [**on**] you can test the light warning buzzer.

Figure171

ACTUATION TEST						
Gauges All the gauges are moved from 0 ° to maximum stop in about 3 seconds						
PAGE UP	PAGE	DOWN	PRIN	I		
ON EXII						
Start 🗊 🗣 🔆 🖼 10:21						

Figure172

Click [**gauges**] that in figure170 then the screen will display as shown in Figure172 Click [**on**] you can test the gauges.

ACTUATION TEST			
Display			
PAGE UP	PAGE DOWN	PRINT	
ON	OFF	EXII	
Start 🕽 🗇	🗣 😯	€ ₩ 10:46	

Control uni	t adaptations
If odometer in inst flashes,first of a version coding.Flas appears after carry coding.Then,if nece reading.	trument cluster ll carry out the shing di <i>s</i> play dis. ying out version essary,set kilometer
	OK
Start] 🗍	📭 🔆 📾 10:47

Figure174

Click [**Display**] that in figure170 then the screen will display as shown in Figure173: Click [**on**] or [**off**] you can test the display.

Control Unit Adaptations

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

home

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure174:

Control unit adaptations					
l Read coo control mo	l Read coding and transfer to new control module				
2 Reset of	dometer to	0 km			
3 Oil serv	vice				
4 mileage	4 mileage as read from odometer forward				
PAGE UP PAGE DOWN					
HOME	HOME BACK PRINT HELP				
Start) 🗊 🔹 🔆 📟 10:47					

Control unit adaptations					
Coding 431! Switch	data ha off ign	ve been e ition!	otered	in the	x-
		OK			
(Start]@	4	0	E 10:	48

Figure176

Click [**ok**] then the screen display as show in figure175:

Click [1 Read coding and transfer to new module] then the screen display as show in figure176:



Figure177

Control unit adaptations		
Transfer coding data module?	a to new control	
YES	NO	
Start)[] [🕻 🔆 🖂 10:48	

Figure178

Click [**ok**] then the screen display as show in figure177:

Click [**ok**] then the screen display as show in figure178:

Click [**yes**], coding data will be transferred. Click [**no**] will return.



Control unit adaptations		
Oil se	rvice?	
YES	NO	
Start 🗍 🛛	😵 🔆 📾 10:49	

Figure180

Click [**2 reset odometer to 0 km**] that in figure175 then the screen display as show in figure179:

Click [**yes**] km odometer will be reset. Click [**no**] will return

Click [**Oil service**] that in figure175 then the screen display as show in figure180:

Control unit adaptations		
Sets the kilometer i with a odometer read 10),between 250 and	is only possible ling < 250.(Canada < 1 999700	
YES NO		
Start 🗍 🗍 🛛	🕻 🦄 📾 10:49	

Control unit adaptations					
Sets the kilometer is only possible with a odometer reading < 250.(Canada < 10),between 250 and 999700					
368]					
OK BACK SPACE					
1	2	3 4 5			5
6	7	8	3	9	0
(Start)@	Ę	P	<u>à</u> E	펔 10:50

Figure182

Click [**Mileage as read from odometer forward**] then the screen display as show in figure181:

Click [**yes**] then the screen display as show in figure182:



AAM				
Control ur	nit version	2 C		
Read fault	: memory			
Clear faul	lt memory			
Control ur	nit adaptat	tions		
PAGE UP PAGE DOWN				
HOME	HOME BACK PRINT HELP			
Start) 🗊 🔹 🔆 📾 10:00				

Figure184

Input the right number then click **[ok**], the screen display as show in figure: Click **[yes]** completely.

AAM SYSTEM

home

In AAM system following functions can be selected for running:

- \swarrow Control unit version
- ✓ Clear fault memory
- ∠ Control unit adaptations

Click corresponding item to perform the function test.

Control unit version		
Control unit MB No.: 163 Supplier: K Hardware sta Software sta Diagnosis id	: AAM 5452632 ostal tus: 40/99 tus: 31/99 ent: 0/06	
OK	PRINT	
(Start)D [😵 🔆 🖼 10:00	

Figure185

Read fault memory		
No fault	present	
OK PRINI		
(Start)[] [🕻 🔆 🖂 10:00	

Figure186

Control Unit Version

home

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure185:

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure 186 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.
- Click [ok] to return to the function menu



Figure187

Clear	Fault	Memory
-------	-------	--------

Click [Clear fault memory] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure 187:

Clear fault memory			
ow is clearing fault memory , please ait			
Start 🗍 🖓 🔆 📇 14:30			

Figure188

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure188:



Figure189

Control unit adaptations			
Initial startup with automatic takeover of settings of previous control unit			
Read coding and change if necessary			
Learn radio code of a new transmitter key			
PAGE UP PAGE DOWN			
HOME	BACK	PRIMI	HELP
Start 🗍 🗣 🔆 🚟 10:02			

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.

Control Unit Adaptations

<u>home</u>

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure190:

Control	unit	adaptations
---------	------	-------------

The following procedure will guide you through all steps required to perform a complete initial startup of system N10(All-activity module(AAM)). Requirements: -The old control unit is still installed. -The new control unit must be available You will be guided through the following steps: -Transfer data of old control unit to new control unit. -Teach-in of remote control key(s). YES NO Start 巾 0 **E** 10:02

Click [Initial startup with automatic takeover of settings of previous control unit] then the screen display as show in figure191:

Figure191

Control unit adaptations			
Coding has been read. Switch off ignition.			
OK			
Start 🗍 🗊 🖓 🚟 10:02			

Figure192

Click [**yes**] then the screen display as show in figure192:



Control unit adaptations				
Replace the old new control unit Switch on igniti	control ion.	unit	with th	e
	OK			
Start 🕽 🗊	4	¢.	E 10	:03

Figure194

Click [**ok**] then the screen display as show in figure193:

Click [**ok**] then the screen display as show in figure194:

Control unit adaptations			
Is the coding to be new control unit?	transferred to the		
YES	YES NO		
(Start) 🗇 🛛	🕻 🔆 📾 10:04		

Enter system			
Switch on ignition.			
OK CANCEL			
(Start) 🗊 🛛	😵 🔆 📾 10:04		

Figure196

Click [**ok**] then the screen display as show in figure195:

Click [**yes**] then the screen display as show in figure196:



Figure197

Control unit adaptations			
NOTE: Following installation of a new control unit N10(All-activity module (AAM)),all remote control keys that the customer has for this vehicle must be taught in. Start process with key YES.			
OK			
Start 🗍 🗊 🗣 🔆 🚟 10:05			

Figure198

Click [**ok**] then the screen display as show in figure197:

Click [**ok**] then the screen display as show in figure198:

Control unit adaptations			
The radio code of a new transmitter key is being learned.			
Requirements: -Battery voltage is o.k -The fuses are okay. -Appropriate vehicle key is present. -Appropriate key or key track is not inhibited.			
Sequence: -Insert key into ignition lock and turn into position 1 or 2. -The key number must be displayed as actual value. -Continue with key OK.			
OK			
Start 🗇 🗣 🔆 🖼 10:05			

Click [**ok**] then the screen display as show in figure199:

Figure199

ACTUATION TEST			
Key in igniti	on lock :	3	
PAGE UP	PAGE DOWN	PRINI	
F2			
Start 🗍		🄆 📾 10:05	

Figure200

Click [**ok**] then the screen display as show in figure200:

Control unit adaptations			
Sequence: -Withdraw key from the ignition lock. -Start learning with key YES in control module AAM. -After the start,hold the close button on the transmitter key pressed within the next 10 seconds and at the same time press the open button 5 times. -After this,release the close button and press any other button of the transmitter key once.			
OK			
Start 🗍 📭 🔆 🚟 10:05			

Control unit adaptations			
The transmitter As a check,press transmitter key	key has any bu once.	been tton o	leamed. f the
	OK		
Start 🕽 🗊	•	0	₩ 10:06

Figure202

Click **[F2**] then the screen display as show in figure201:

Click [**ok**] then the screen display as show in figure202:



Control unit adaptations		
Initial startup was fully completed.		
OK		
[Start][] 📭 🔆 🚟 10:08		

Figure204

Click [**ok**] then the screen display as show in figure203:

Click [**no**] then the screen display as show in figure204:

Click [**yes**] will teach in another remote key. Click [**ok**] complete

Control unit adaptations			
Read coding and change if necessary			
OK			
Start 🗊 🗣 🔆 📾 10:14			

Control unit adaptations			
National version			
Air conditioning			
EDW anti-theft alarm			
ATA interior motion/towing sensor			
Component H3/1(Alarm signal siren with additional battery):National verion			
Trip computer			
Panic alamı			
PAGE UP PAGE DOWN			
HOME	BACK	PRINI	HELP
Start 🗊 📭 🔆 🚟 10:14			

Figure206

Click [**Read coding and change if necessary**] that in figure190 then the screen display as show in figure205:

Click [**ok**] then the screen display as show in figure206:

ACTUATION TEST				
Air conditioning		PRESENT		
F1:PRESENT.F2	F1:PRESENT.F2:NOT PRESENT			
PAGE UP	PAGE DOWN	PRINT		
Fl	F2	Exit		
Start 🕽 🗊	🗣 🖓	× 🖼 10:15		

We introduce the process by the second item. Click [**Air conditioning**], then the screen display as show in figure207:

You can click **[F1]** or **[F2]** to carry out testing.

Click [Exit] to return.

— ·	007
FIU	$\ln \rho / 1 / 1$
1 Ig	

EAM			
Control unit version			
Read fault memory			
Clear fault memory			
Actuations			
Control unit adaptations			
PAGE UP PAGE DOWN			
HOME	BACK	PRINI	HELP
Start 🔟 📭 🕉 🖼 10:17			

Figure208

EAM SYSTEM

home

In EAM system following functions can be selected for running:

- ✓ Control unit version
- Clear fault memory
- ∠ Actuations
- Scontrol unit adaptations

Click corresponding item to perform the function test.

Control unit version		
Control unit: EAM MB No.: 1635452332 Supplier: Kostal Hardware status: 40/99 Software status: 27/99 Diagnosis ident: 0/04		
OK	PRIMI	
(Start)[] [😵 🔆 📾 10:18	

Figure209

TROUBLE CODE			
inde Pande	ID a7 13 96 0 undefined.		Fault indicator lamp on
PAGE UP		PAGE	DOWN
HOME	BACK	PRINI	HELP
Start] 🗊 📭 🔆 🚟 10:18			

Figure210

Control Unit Version

home

Click [**Control unit version**] that in the function menu. The screen will display the information about the control unit version of the test system, as shown in Figure209:

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure 210 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu



Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure211:

Clear fault memory			
Clear fault memory Now is clearing fault memory , please Wait			
Start 🗍 📭 🔆 🖽 14:30			

Figure212

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure212:



Figure213

Actuations			
Automatic dimming mirror			
Rear window defroster			
Left front entrance lamp			
Right front entrance lamp			
Left rear entrance lamp			
Right rear entrance lamp			
Lamella roof/Sliding/tilting roof			
Headlamp cleaning system			
PAGE UP PAGE DOWN			
HOME	BACK	PRINI	HELP
[Start] 🗊 🗣 🔆 🚟 10:19			

Figure214

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.

Actuations

<u>home</u>

Click **[Actuations**] in the function menu. The screen will display a list of actuations, as shown in Figure214:
ACTUATION TEST				
Automatic mir inhibited Y	ror dimming ES			
F3:Deactivate mirror dimmin	e automatic Ng.			
F12:Activate mirror dimmin	automatic g.			
F1:EXII				
PAGE UP	PAGE DOWN	PRINT		
Fl	F3	F12		
Start 🗍	🗣 🕉) 🖽 10:19		

Select the actuations item, carry out testing according the hint the screen display. For the [**automatic dimming mirror**] example as show in figure215:

Figure215

Control unit adaptations			
Initial startup with automatic takeover of settings of previous control unit			
Read codin	ng and cha	nge if neo	cessary
PAGE UP PAGE DOWN			
HOME	BACK	PRINI	HELP
(Start)	ф I	v 🔅	₩ 3 10:21

Figure216

Control Unit Adaptations

home

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure216:

Control unit	adaptations
--------------	-------------

The following procedure will guide you through all steps required to perform a complete initial startup of system N10 l(Extended activity module(EAM)). Requirements: -The old control unit is still installed. -The new control unit must be available You will be guided through the following steps: -Transfer data of old control unit to new control unit. NOTE: YES NO Start 巾 0 **E** 10:21

Click [**Initial startup with automatic takeover of settings of previous control unit**] then the screen display as show in figure217:

Figure217

Control unit adaptations
Coding has been read. Switch off ignition.
OK
Start 🗍 🗣 🔆 🖽 10:21

Figure218

Click [yes] then the screen display as show in figure218:



Control unit	adaptations
Is the coding to be new control unit?	transferred to the
YES	NO
(Start)[] [🕻 🔆 🖂 10:21

Figure220

Click [**ok**] then the screen display as show in figure219:

Click [**ok**] then the screen display as show in figure 220:



Figure221

Control unit adaptations
The coding has been carried out.
OIK
(Start) 🗍 🗳 🔆 🚟 10:22

Figure222

Click [**yes**] then the screen display as show in figure221:

Click [no] then return.

Click [**yes**] then the screen display as show in figure222: Click [**cancel**] will exit.



ACTUATION TEST							
PTC heater booster				:	Not present		
Fan type			:	Electric suction fan			
Roof version Sliding tilting roof Lamella roof)f)f			
F1: FIC heater booster:Not present,Fan type: Auxiliary fan,Roof version:Sliding/tilting roof/Lamella roof.							
	PAGE UP		PAGE DOWN PRINI				
\vee	Fl		F2 F3			F4	>
(Start 🗍 🗊 😵 🔆 🚟 10:22						

Figure224

Click [**ok**] then the screen display as show in figure223:

Click [**ok**] in here will complete.

Click [Read coding and change if necessary]

that in figure216 then the screen display as show in figure224:

ACTUATION TEST					
F2 PI pr Au Ve	F2: PTC heater booster:Not present,Fan type: Auxiliary fan,Roof version:Fixed roof.				
F3: PTC heater booster:Not present,Fan type:Electric suction fan,Roof version: Sliding/tilting roof Lamella roof					
F4: PTC heater booster:Not present,Fan type:Electric suction fan,Roof version:					
PAGE UP PAGE DOWN PRINT					
$^{\vee}$	Fl	F2	F3	F4	>
(Start)[]	🗣 🛞	× 🖂 10;	:23

Click [**PAGE DOWN**] to display more hint, carry out testing according the hint the screen display. As show in figure225:

Figure225

AUDIO				
Control ur	nit version	a		
Read fault	t memory			
Clear faul	lt memory			
Control ur	nit adaptat	tions		
PAGE UP PAGE DOWN				
HOME	BACK	PRINI	HELP	
(Start)		r ö	₩ 09:40	

Figure226

D2B SYSTEM

home

In D2B system following functions can be selected for running:

- ✓ Control unit version
- ✓ Clear fault memory
- ∠ Control unit adaptations

Click corresponding item to perform the function test.

Control un	it version
Control unit MB No.: 203 Supplier: B Hardware sta Software sta Diagnosis id	: AUDIO 8201586 ecker tus: 29/00 tus: 30/00 ent: 14/00
OK	PRINI
(Start) 🗇 🛛	😵 🔆 📾 09:40

Figure227

Read fault memory		
No fault	present	
OK	PRIMI	
(Start)[] [🕻 🔆 📾 09:40	

Figure228

Control Unit Version

home

Click [**Control unit version**] in the function menuThe screen will display the information about the control unit version of the test system, as shown in Figure227:

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure 228 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.
- Click [ok] to return to the function menu



Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure229:

Clear fault memory
ow is clearing fault memory , please ait
Start 🗊 🖓 🙀 🖽 14:30

Figure230

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure230:



Figure231

Ca	Control unit adaptations				
Activate radio code number					
PAGE UP PAGE DOWN					
HOME	BACK	PRIMI	HELP		
Start 🗍 📭 🔆 🚟 09:41					

Figure232

After the fault code is cleared, the screen will show the related message. Click **[OK]** to return to the function menu.

Control Unit Adaptations

<u>home</u>

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure232:

Control unit adaptations				
Note: -It is only necessary to activate the radio code number when the radio is operated for the first time. -Activating means that the corresponding code number has to be entered each time the power supply is connectedActivation is only possible once and cannot be canceled.				
OK CANCEL				
(Start) 🗊 🛛	😵 🔆 📾 09:42			

Control unit adaptations			
Note: -It is only necessary to activate the radio code number when the radio is operated for the first time. -Activating means that the corresponding code number has to be entered each time the power supply is commectedActivation is only possible once and cannot be canceled.			
OK			
Start 🗍 🖓 🔆 🚟 09:42			

Figure234

Click [Activate radio code number] then the screen display as show in figure233:

Click [**ok**] then the screen display as show in figure:

Click $[\mathbf{ok}]$ in here to complete

ARmatic						
Control ur	nit version	2				
Read fault	: memory					
Clear faul	lt memory					
Actual val	lues					
Actuations	3					
Control unit adaptations						
ainmatic test						
PAGE UP PAGE DOWN						
HOME BACK PRINT HELP						
Start 🗍 🗣 🔆 🚟 09:28						

Control unit version			
Control unit MB No.: 220 Supplier: T Hardware sta Software sta Diagnosis id	: AIRmatic 5450532 emic tus: 12/99 tus: 12/99 ent: 0/00		
OK PRIMI			
Start)[] [🕻 🔆 🖂 09:28		

Figure236

ABC SYSTEM

<u>home</u>

In ABC system following functions can be selected for running:

- Control unit version
- ✓ Read fault memory
- Clear fault memory
- ✓ Actual values
- ∠ Actuations
- \land Airmatic test

Click corresponding item to perform the function test

Control Unit Version

home

Click [**Control unit version**] in the function menu.The screen will display the information about the control unit version of the test system, as shown in Figure236:



Figure237

Clear fault memory				
Switch off ignition.				
OK				
Start 🗍 🗣 🔆 🚟 14:30				

Figure238

Read Fault Memory

<u>home</u>

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure237 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu

Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure238 :



Figure239

Clear fault memory				
Erase code succeeded!				
ak				
Start 🗊 📭 🔆 🚟 14:30				

Figure240

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure239 :

After the fault code is cleared, the screen will show the related message. Click [OK] to return to the function menu.

SELECT DATA FIEM					
165 termin	bal 3	30			
117 termin	bal 8	37			
040 compor) signal)	oent L	B22/8	(FL al	titl	ude sensor
050 compor) signal 2	nent 2	B22/8	(FL al	titl	ude sensor
052 compor) signal 1	052 component B22/9 (FR altitude sensor) signal l				
053 compor) signal 2	053 component B22/9 (FR altitude sensor) signal 2				
055 component B22/3 (rear axle altitude sensor) signal l					
PAGE UP PAGE DOWN OK					
HOME BACK PRINT HELP					HELP
Start 🗍 🗣 🔆 🖽 09:29					

	SELECT DATA FIEM					
165 termir	bal	30				
117 termin	117 terminal 87					
040 compor) signal J	oent L	B22/8	(FL	alti	itude	sensor
050 compor) signal 2	nent 2	B22/8	(FL	alti	itude	sensor
052 component B22/9 (FR altitude sensor) signal l						
053 compor) signal 2	053 component B22/9 (FR altitude sensor) signal 2					
055 compor sensor) si	055 component B22/3 (rear axle altitude sensor) signal l					
PAGE UP PAGE DOWN OK						
HOME	I	BACK PRINI HELP			HELP	
[Start] 🗊 🗣 🔆 🖼 09:29						

Figure242

Read Data Stream

home

Click [**Actual values**] that in the function menu. The screen will display the list of data streams, as shown in Figure 31

There is more than one page for the list. Click [**PAGE UP**] or [**PAGE DOWN**] to turn the page. Figure 241 shows the first page

Select the corresponding item and click [ok] then the screen will display the real-time values.

Actuations					
l.front as	scend.				
2.front de	escend.				
3.FL ascer	od.				
4.FL desce	nd.				
5.FR ascer	od.				
6.FR descend.					
7.rear ascend.					
8.rear descend.					
PAGE UP PAGE DOWN					
HOME BACK PRINT HELP					
Start 🗍 🗣 🔆 🚟 09:29					

Actuations

home

Click **[Actuations]** in the function menu. The screen will display a list of actuations, as shown in Figure243:

Figure243

ACTUATION TEST				
B7 (AIRmatic sensor)	pressu	ce	0.00 baı	r
PAGE UP	PAGE	DOWN	PRI	II
START EXIT				
Start 🗍 🗊	[r X	× 🖴	09:30

Figure244

Select the actuations item, for example [**1.front ascend**] then the screen display as show in figure:

Click **[START]** then start testing. Click **[EXIT]** then return.

Control unit adaptations						
l level calibration						
PAGE UP PAGE DOWN						
HOME	BACK	PRIMI	HELP			
(Start)		\$	₩ 09:31			

Control unit adaptations
<pre>perform level calibration in the following conditions: -replace level sensor. -replace A/C controller. -vehicle calibration error. general notes: -level calibration must be performed on the chassis measuring device. -after level,level signal must be 2.00 V-3.00 V. calibration brief notes: -press F2 to perform level valve control. -press +/- key on the pitch tester according to the given standard level. 'Romess CM-09606' stored. -after reaching all standard level,</pre>
OK
Start 🗍 🗊 😵 🔆 🛲 09:32

Figure246

Control Unit Adaptations

home

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure245:

Click **[1.Level calibration**] then the screen display as show in figure246:

Control unit adaptations							
component B22/8 (FL 0.00 V altitude sensor) signal l							
component B22 altitude sens	2/9 (FR 101) sig	mal l	0.00	٧			
component B22 axle altitude signal l	component B22/3 (rear 0.00 V axle altitude sensor) signal 1						
<pre>front axle theoretical value:tilt angle 4.8 ° -5 .5 ° (test with gradienter) rear axle theoretical value:tilt angle (-1.9) ° -(-1.4) ° (test with tilt tester)</pre>							
PAGE UP PAGE DOWN PRINT							
< F2	F3	F4		F5	>		
Start) 🗊 🗣 🔆 🚟 09:32							

	Control unit adaptations						
front axle theoretical value:tilt angle 4.8 ° -5 .5 ° (test with gradienter) rear axle theoretical value:tilt angle (-1.9) ° -(-1.4) ° (test with tilt tester) F3:FL ascend. F4:FL descend. F5:FR ascend. F6:FR descend. F7:rear ascend. F8:rear descend.							
PAGE UP PAGE DOWN PRINT							
$^{\prime}$	F2		FЗ	F4		F5	>
Start 🗍 🗣 🔆 🚟 09:32							

Figure248

Click [**ok**] then the screen display as show in figure247:

Click [**PADE DOWN**] then the screen display as show in figure248:

You can see more hint. Carry out testing according the hint the screen display.

Control unit adaptations					
l pneumatic inspection					
PAGE UP PAGE DOWN					
HOME	BACK	PRIMI	HELP		
(Start)		¥ 🔆	₩ 09:34		

airmatic test					
inspection process: -turn on the discharge valve for 5 s. -turn off discharge valve. -turn on the compressor at most for 30 s. -turn off all valves,the compressor must increase the pressure over 14 bar in 30 s.					
OK					
Start 🗍 🗣 🔆 🖼 09:34					

Figure250

For example, click **[F2]** then the screen display as show in figure249:

Airmatic test

home

Click [Airmatic test] that in the function menu. The screen will display a list of actuations, as shown in Figure250:

Control unit adaptations						
B7 (AIRmaticp sensor)	7 (AIRmaticpressure ensor)		0.00000 bar			
PAGE UP	PAGE	DOWN	PRINT			
START	START EXIT					
Start 🗍 🗣 🔆 🚟 09:34						

ainmatic test						
test result: -component A9/1 (AIRmatic compressor unit) malfunction. possible cause: -pipeline between compressor unit and valve body not airproof: check leaking by using a leaking tester -one or more level valve not OFF,which may be identified by the raising of the level during test. -discharge valve not airproof. -compressor relay failure.						
OK						
Start 🗊 🖓 🔆 🖼 09:34						

Figure252

Click [**ok**] then the screen display as show in figure251:

Click **[START]**, then the screen will display the test result as show in figure252:

ME2.0					
Control ur	nit version	2			
Read fault	: memory				
Clear faul	lt memory				
Actual val	lues				
Actuations	3				
Control unit adaptations					
PAGE UP PAGE DOWN					
HOME	BACK	PRIMI	HELP		
Start 🗍 🗣 🔆 🚟 09:55					

Control unit version					
Control unit: ME2.0 MB No.: 0102030405 Supplier: Becker Hardware status: 01/02 Software status: 03/04 Diagnosis ident: 0/00					
OK PRINT					
Start 🗍 🗍 🛛	🕻 🔆 🖼 09:56				

Figure254

ME2.0 SYSTEM

home

In ME2.0 system following functions can be selected for running:

- Control unit version
- ✓ Read fault memory
- ✓ Clear fault memory
- ∠ Actuations

Click corresponding item to perform the function test

Control Unit Version

<u>home</u>

Click [**Control unit version**] in the function menu.The screen will display the information about the control unit version of the test system, as shown in Figure254:



Figure255

Clear fault memory
Switch off ignition.
OK
Start 🗊 📭 🔆 🚟 14:30

Figure256

Read Fault Memory

home

Click [**READ FAULT MEMORY**] in the function menu. X-431 starts to scan the fault code. The screen will display the result after the scanning is finished. Figure255 shows an example. *Note:*

- ? The first part of the information is the fault code; the second part is description of the fault code; the third part is the status of the fault code (there may be no third part for some fault code).
- ? If there is no fault code in the tested system, the screen will display message "No fault present".
- ? After the test result is displayed, click [PRINT] to print out the test result.

Click [ok] to return to the function menu

Clear Fault Memory

home

Click [**Clear fault memory**] that in the function menu. The screen will prompt the user to switch off the ignition, as shown in Figure256 :



Figure257

Clear fault memory					
Erase code succeeded!					
OIK					
Start 🗊 📭 😵 🚟 14:30					

Figure258

After the ignition is turned off, click **[OK]** to clear the fault memory. The screen will display the massage as shown in Figure257 :

After the fault code is cleared, the screen will show the related message. Click [OK] to return to the function menu.

SELECT DATA ITEM					
73 Engine	oil	level			
74 Fuel ta	nk	level			
92 Tempera	atur	Motor	bel		
01 Coolant	: te	mperati	ire		
04_1 Set i	del	speed			
04_2 Engine speed					
30 CIP recognition					
06 Air mass					
PAGE UP PAGE DOWN OR					
HOME	I	BACK PRIMI HELP			
Start 🗍 📭 🔆 🚟 09:57					

Read Data Stream

home

Click [Actual values] that in the function menu. The screen will display the list of data streams, as shown in Figure 31 There is more than one page for the list. Click [PAGE UP] or [PAGE DOWN] to turn the

page. Figure 259 shows the first page

Figure259

SELECT DATA ITEM						
73 Engine	73 Engine oil level					
74 Fuel ta	nk	level				
92 Tempera	tur	Motor	bel			
01 Coolant	: te	mperati	ire			
04_1 Set i	.del	speed				
04_2 Engine speed						
30 CTP recognition						
06 Air mass						
PAGE UP		PAGE	DOWN		OK	
HOME	I	BACK	PRIN	Т	HELP	
(Start)	巾	[r X	÷	🖽 09 : 57	

Select the corresponding item.

Figure260

DATA STREAM					
73 Engin	e oil	. level		in (order
01 Coola	Ol Coolant temperature		47 1	с	
PAGE I	JP	PAGE	DOWN	G	RAPHIC-1
HOME]	BACK	PRIN	Т	HELP
(Start) @		s X	λ	₩ 09:58



Figure262

Click **[ok]** then the screen will display the real-time values.

Actuations

<u>home</u>

Click **[Actuations**] in the function menu. The screen will display as shown in Figure 262:



Actuations				
03 Injecti	03 Injection valves			
04 Throtti	le valve			
05 Fuel pu	шp			
06 Prugina	Ĵ			
09 Mixture adaptation				
12 Sensibilise shut-off threshold				
14 intake air tube switching				
PAGE UP		PAGE	DOWN	
HOME	BACK	PRINI	HELP	
Start] 🗊 🔹 🔆 🖼 09:59				

Figure264

Click [**ok**] then the screen display as show in figure 263:

Click **[ok]** then the screen will display a list of actuations as show in figure 264:



Select the actuations item, for example **[04 Throttle valves**] then the screen display as show in figure265:

Figure265

ACTUATION TEST				
Throttle valve angle 6.6 °				
Engine speed CTP (0 rpm		
OPEN:Engine speed increases CLOSED:Engine speed drops off				
PAGE UP	PAGE DOWN	PRINI		
OPEN	CLSD	Exit		
Start 🕽 🗊		★ E 10:01		

Click **[ok]** then the screen will display a list of actuations as show in figure266: Click **[OPEN]** or **[CLSD]** start testing.

Figure266



Control unit adaptations					
l Read or	l Read or carry out coding				
2 Erase co	2 Erase coding				
3 Idling :	speed Selec	tor lever	P/N		
4 Idling : position	4 Idling speed Selector lever Drive position				
5 Self-adaptation					
6 CO setting for models without TWC					
PAGE UP		PAGE	DOWN		
HOME	BACK	PRIM	HELP		
(Start)	þ c	\$	₩ 10:03		

Figure268

Control Unit Adaptations

home

Warning!

Do not perform this operation discretionarily; only the professional can do the control unit adaptations.

Click [**Control Unit Adaptations**] in the function menu. The screen display will be as shown in Figure 267:

Click [**ok**] then the screen display as show in figure 268:

Control unit adaptations			
Coding number:003165002 Coding unit number:9D0F9D			
Chassis number: 2020206F794473			
Transfer coding to new control module?			
TES	NU		
Start 🗍 🗍	🕻 🔆 🖾 10:03		

Click [**1 Read or carry out coding**] then the screen display as show in figure 269:

Figure269

Control unit adaptations				
Switch off ignition.				
OK				
Start 🗊 🗣 🔆 🖼 10:04				

Figure270

Click **[YES**] then the screen display as show in figure270:



Figure271

Enter system		
Switch on	ignition.	
OK	CANCEL	
(Start)[] [🕻 🔆 🖾 10:04	

Figure272

Click [**ok**] then the screen display as show in figure271:

Click [**ok**] then the screen display as show in figure272:



Control unit	adaptations
Should identificati	ion be carried out?
YES	NO
(Start)[] [😮 🔆 🖂 10:06

Figure274

Click [**ok**] then the screen display as show in figure273:

Click [**ok**] then the screen display as show in figure274:

Control unit adaptations			
Identification can Engine control mod interlocked and as !	not be ule is signed	carri alrea to tř	ied out. ady ne vehicle
	OK		
(Start) 🗇	P	¢.	🖽 10:06

Click **[YES]** then the screen will display corresponding hint Figure 263 show a case. Click **[OK]** then return.

Figure275	5
-----------	---

Control unit adaptations	
The control module i uncoded state Erase	is reset to the coding?
YES	NO
(Start)[] [🕻 🔆 🖂 10:07

Figure276

Click [**2 Erase coding**] that in figure268 then the screen display as show in figure276:



Figure277

Control unit adaptations	
Correction programming has been carried out in the case of the following functions: -Idling speed Selector lever P/N -Idling speed Selector lever Drive position	
OK	
Start 🗍 🗣 🔆 🖼 10:08	

Figure278

Click **[YES**] then the screen display as show in figure277:

Click [3 **Idling speed selector lever P/N**] that in figure268 then the screen display as show in figure278:

Control unit adaptations	
Correction programming must only be carried out specifically for a corresponding problem. Move forward in small steps during programming and check whether any improvement is achieved. You have to quit the correction programming to check this An excessive change in the base value can result in a deterioration of the problem or in a new problem.	
OK	
(Start)D 📭 🔆 🖩	₩ 10:08

Control unit adaptations	
Coolant temperature47℃ Specification > 80℃ Please wait until specified temperature reached	
OK	
Start 🗍 🗣 🔆 🖼 10:08	

Figure280

Click **[OK]** then the screen display as show in figure279:

Click **[OK]** then the screen display as show in figure 280:



Control unit adaptations			
l Original initialization			
2 Reset sensor gear adaptaion			
3 Adaptation data			
PAGE UP		PAGE	DOWN
HOME	BACK	PRIM	HELP
(Start)		\$	₩ 10:15

Figure282

Click **[5 Self-adaptation**] that in figure 268 then the screen display as show in figure 281:

Click **[OK]** then the screen display as show in figure 282:

Control unit adaptations	
Are you sure you war adaptation?	ot to erase the
YES NO	
(Start) 🗇 🛛	🕻 🔆 🛱 10:15

Control unit adaptations	
Switch off ignition!	
OK	
Start 🗊 🗣 🔆 🖼 10:15	

Figure284

Click [**Original initialization**] then the screen display as show in figure 283:

Click **[YES**] then the screen display as show in figure284:



Enter system	
Switch on	ignition.
OK	CANCEL
	😵 🔆 📾 20

Figure286

Click **[OK]** then the screen display as show in figure 285:

Click [**OK**] then the screen display as show in figure 286:


Figure287

Control unit adaptations					
Wait for engine control module's a run period to complete.Please wait	fter-				
	21				

Figure288

Click **[OK]** then the screen display as show in figure 287:

Click [2 **Reset sensor gear adaptation**] that in figure282 then the screen display as show in figure288:



Figure289

Enter system				
Switch on	ignition.			
OK CANCEL				
	😵 🔆 📾 22			

Figure290

after several seconds, the screen display as show in figure289:

Click [**OK**] then the screen display as show in figure 290:

Control unit adaptations					
Reset adaptaion values of flywheel ring gear (incremental gear)?					
YES	NO				
D D	¥ 🔆 📾 23				

Click **[OK]** then the screen display as show in figure291:

Figur	e291
-------	------

ACTUATION TEST					
2.	. Cylinder Ll nl 1.860				
2.	Cylinder I	1 n2 -1.874			
2.	Cylinder I	0.000			
2.	0.000				
2.	2. Cylinder Ll n5 0.000				
2. Cylinder Ll n6 0.000					
2. Cylinder L2 nl 0.000					
2. Cylinder L2 n2 0.000					
	PAGE UP	PAGE DOWN	PRIM		
EXIT					
🗊 🗣 🔆 📾 24					

Figure292

Click **[3 Adaptation data]** that in figure282 then the screen display as show in figure292:



Click [6 CO setting for module without TWC] that in figure268 then the screen display as show in figure293:

Figure293

ACTUATION TEST						
CO setting idling range only for models without TWC						
Correction value				0.00 ms		
Engine speed				0		
Engine speed 1084			4			
PAGE UP PAGE I		DOWN	PRINI			
[±0]	F	OSI+	NEGA- Exit		Exit	
	ф	0	r X	£.	₩ 28	

Figure294

Click **[OK]** then the screen display as show in figure 294:

Control unit adaptations					
If a correction has been carried out, this is automatically strored.					
		OK			
	þ	4	ò	***	29

Figure295

Click [**EXIT**] then the screen display as show in figure295: Click [OK] will finish.