Manual

iQ4bike

Content

1 General information

This document is based on software version 36 for iQ4bike.
1. Edition 2007
2. New edition 2009, redaction date 10/09

1.1 Preliminary remark

All notes given in the individual sections of the manual are in effect. On principle it is required to follow the undermentioned steps and safety guidelines. Furthermore pay attention to all instructions made by labour inspectorates, trade associations, motorcycle manufacturers as well as all laws, legal ordinances and instructions, which have to be commonly obeyed by a car workshop. The following points are merely an abridgement, which shall not restrict all other safety precautions.

1.2 Data protection

The available data stock, the scanning software and the manual are protected by copyright. In the relationship between the WOW! Würth Online World GmbH and the user, all the rights thereto are owned exclusively by the WOW! Würth Online World GmbH. Any duplication of the stored data whatsoever, particularly the copying of data onto electromagnetic, optoelectronic or other data media, together with the manual, is prohibited. The user is allowed to duplicate the programme only in as far as it is necessary for the purpose of using the programme. No retranslation of the programme code supplied into other types of code (decompilation) or any other method of re-acquiring the various production stages for the software (reverse engineering) is not permitted. Removal of copy protection is forbidden. Data and software/programme must not be transferred to a third party.

1.3 Non-Liability

The information contained in the database has been compiled by WOW! Würth Online World GmbH according to motorcycle- and importer data. The company thereby proceeded with high diligence to ensure correct information.

However, WOW! does not assume liability for eventually wrong conclusions and results arising from this.

The notes given in the tool describe the most common fault reasons. But often there are further reasons for existing faults, which cannot be listed here, or there are further sources or error, which are unknown yet. The WOW! Würth Online World GmbH does not assume liability for failed or unnecessary repair work.

WOW! Würth Online World GmbH does not assume liability for the appliance of data and information, which either turn out as wrong, were incorrectly described or faults, which by mistake appeared during data compilation.

Without restriction of the above mentioned facts, WOW! Würth Online World GmbH accepts no liability for any loss in respect of profits, company value or any other loss whatsoever arising therefrom, including any economic loss.

WOW! Würth Online World GmbH will only be liable for compensation, irrespective of whatsoever legal reason, in the event of malicious intent, gross negligence or assurances as to particular characteristics.

The last named require the explicit written statement.
Liabilities arising from the Product Liability Act remain unaffected hereby. A plea of contributory negligence by the user remains open to WOW! Würth Online World GmbH. WOW! Würth Online World GmbH is not liable to pay compensation for damages arising by reason of any inability to use the objects of the contract, even if WOW! Würth Online World GmbH was notified of the possibility of damage of this nature.
The liability of WOW! Würth Online World GmbH is confined to the real price paid for the product.

WOW! Würth Online World GmbH accepts no liability for damages or operational disruptions resulting from a failure to observe the iQ4bike manual and the special safety precautions.
The user of the measuring tool is subject to the burden of proof, that he has observed the technical explanations and the operating, care, maintenance and safety instructions without exception.
This exclusion of liability will not apply if damages arising out of a fatal or physical injury, or harm to the health, are attributable to a premeditated or negligent infringement of its duties by WOW! Würth Online World GmbH.

1.4 Safety notes

Safety precautions regarding high voltage/mains voltage

Very high tensions occur in electrical facilities. Due to voltage flash-over on damaged components (marten damage etc.) or touching live components the risk of electric shock is likely.

- Only user power supply lines with earthing contact.
- Only use original cable sets.
- Regularly check cables and power supply unit for damages.
- Always connect the earth lead from tool to motorcycle first.
- Carry out installation work, as e.g. tool connection or component replacement, always when ignition is urned off.
- Do not touch live components when ignition is turned on.

Safety precautions regarding the danger of suffocation

Carbon monoxide is arising with running engine. When breathed in, it will lead to a lack of oxygen in the blood (danger to life).

- Ensure the sufficient ventilation of the workplace.
- Cut in and connect exhaust extraction system when engine is running.

Safety precautions regarding the danger of burning

If the engine is running, some components can become very hot (up to several 100 °C).

- Always use safety equipment (protective gloves etc.).
- Do not run connection lines near hot components.

Safety precautions regarding the danger of explosion

Fuel vapours increase the risk of fire and explosion when working on the fuel system.

- No open fire
- Do not smoke
- Ventilate the room well

Safety precautions regarding the danger of injury

The running engine causes some parts to rotate (fan blades, belt drives etc.), which can lead to severe injuries. If the motorcycle is not protected against inadvertent rolling, you may be injured.

- Do not reach into rotating components when engine is running.
- Prevent inadvertent rolling of the motorcycle (apply the parking brake).
- Additionally position gear selector of automatic gearboxes to P.
- Do not run cables near rotating parts.

Safety precautions regarding noise

In order to prevent hearing defects, regard the following actions:

- Protect workplaces near the test station against noise.
- Use noise protection products.

Safety precautions regarding chemical burn

Escape of the liquid crystals due to a damaged TFT display can cause chemical burn.

- Immediately rinse affected parts of the body or clothing with water (consult a doctor).
- Immediately consult a doctor if the substance has been breathed or swallowed.

Safety notes for iQ4bike

- Connect only an original mains supply (supply voltage 12 V).
- Always take all connections with engine standing still.
- Check the cables of high-voltage components for damage (marten damage etc.).
- Protect the TFT display and the tool from longer-lasting solar radiation.
- Protect the tool and the connection cable from hot components.
- Protect the tool from rotating parts.
- Regularly check the connection cables/accessory parts for damage (danger of device destruction due to short circuit).
- Only connect the tool according to user manual.
- Protect the tool from water (it is not waterproof).
- Protect the tool from strong impacts (do not drop).

- Only technicians authorised by WOW! are allowed to open the tool.
- Warranty will expire if the protection seal is broken or in case of unauthorised opening of the tool.
- Please immediately inform the WOW! Würth Online World GmbH in case of tool troubles.

1.5 Care and maintenance of iQ4bike

As every measuring tool, iQ4bike should also be handled with care.

- Regularly clean it with a mild detergent.
- Use commercial cleaning detergents and a moistened, soft cleaning cloth.
- Replace damaged cables/accessories immediately.
- Only use original spare parts.

1.6 Disposal

In compliance with directive 2002/96/EG of the European Parliament and Council of 27 January 2003, relating to used electrical and electronic appliances, and the national statute governing the distribution, return and environmental disposal of electrical and electronic appliances (Waste Electrical and Electronic Equipment (WEEE) regulation) of 16 March 2005, we undertake to take back and to dispose this tool, distributed after 13 August 2005, at the conclusion of its service life.
Since, in the case of the present tool, this relates to an exclusively commercially used instrument (B2B), it must not be handed over to a public disposal facility.

Subject to the provision of the date of purchase and the tool number, this tool can be disposed of by:

WOW! Würth Online World GmbH
Schliffenstrasse Falkhof
74653 Künzelsau

2 Tool description

The iQ4bike is a mobile diagnostic tool for fault detection and repair on electronic systems of motorcycles. The present manual explains the handling of iQ4bike. All illustrations shown here are examples.

2.1 Applications

ECU communication:

- Reading/deleting fault codes
- Reading parameters and depicting them graphically
- Actuator tests
- Service resets
- carrying out basic settings
- Coding

Measurements:

- Vacuum measurement
- Noise measurement
- RPM measurement
- Voltage, current, resistance, temperature
- 2-channel multimeter

2.2 Keybord

iQ4bike front: TFT display and membrane keypad

Key	Explanation
PRINT	Return
ESC	Function keys
F1 F2 F3	Cursor up/down
	Cursor up/down
	Cursor to the right
	Cursor to the left
	>Enter<
ON/OFF	On/Off switch

Print

You can send and print out data if a PC is connected to iQ4bike.
For this, >***WOW! Portal***< must be installed on the PC (see section D4).

Printing	
Print window	The current window will be printed.
Diagnostic folder for printer diagnostic procedure will	Diagnostic folder will be opened. The selected be printed.

2.3 View

Top
Connecting sockets from left to right

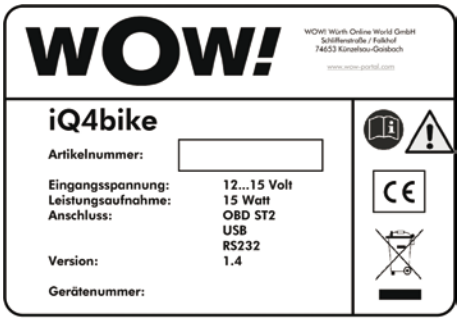
Connections	
Test connection, minus	Channel 2
Test connection, plus	Channel 2
Diagnostic connection	ST2 for diagnostic cable and amps clamp
Test connection, plus	Channel 1
Test connection, minus	Channel 1

iQ4bike Bottom
Connecting sockets from left to right

Connections	
Network	Mains supply
USB device	PC connection for data update and communication with PC programmes
USB host	Activation of external devices
Serial interface	RS232

iQ4bike Back

Extending support



Rating plate

Delivery contents ex works
> see packing list

2.4 Technical Data

General data		
Supply voltage	8...18 V	
Battery charging voltage	12,5...18 V	
Current consumption	max. 1,5 A, normally 800 mA	
Batteries	LiPo, at least 790 mAh	
Display	Type: LCD-TFT Resolution: 1/4 VGA Size: approx. 5,5“	
Storage medium	Flash	
Input	Membrane keypad	
Ambient temperature	recommended: 10...35 °C Working area: 0...45 °C	
Compatibility	GM3 moto	
Weight	approx. 1,35 kg incl. batteries	
Dimensions	58x165x250 mm (H x W x D)	
Degree of protection	IP31	
Interfaces	USB device, USB host, ST2, RS232	**ST2 connections** 4x communication 1x analogue input 1x voltage off +17 V
Measuring channels	2x graphic multimeter	

Multimeter	
Bandwidth	max. 10 kHz
Sampling rate	10 kSa/s
Amplitude resolution	16 Bit
Overload protection	200 V
Measured variables (through Hall sensor)	voltage, current (only external amps clamp), resistance, negative pressure, rpm

Vertical deflection factor			
Operating mode	Channel 1 or channel 2 individually, channel 1 and 2 parallel		
Tolerance	5 % from the end of range		
Input impedance	1 MΩ, 100 pF		
Input coupling	DC/AC		
Range	Voltage	Range Tolerance* measurable voltage	9 positions, 0,05...20 V/Div 2 % from the end of range max. 200 V
	Current	Range Tolerance* measurable current	5 positions, 0,2...50 A/Div** 0,2...10 A/Div, 10 %, all others 2 % from the end of range max. approx. 380 A**
=	Resistance	Range Current source Tolerance*	6 positions, 1 Ω/Div...100 KΩ/Div 1...100 Ω/Div = 2,5 mA, 1 KΩ/Div 250 µA, 10 KΩ/Div = 25 µA, 100 KΩ/Div = 2.5 µA 1...100 Ω/Div, 10 %, all others 2 % from the end of range measurable resistance approx. 1MΩ

Trigger	
Trigger mode	Auto (standard)
Autotrigger range	The trigger range will be adapted to the input signal.
Trigger channel	Multi 1 (standard), optionally Multi 1/Multi 2
Trigger edge	+, -

Horizontal deflection factor	
Time coefficients	12 positions, 4 ms/Div...20 s/Div
Tolerance	100 ppm

* With or without mains supply, tolerances require a battery load of at least 30 %.
** Depending on the type of amps clamp

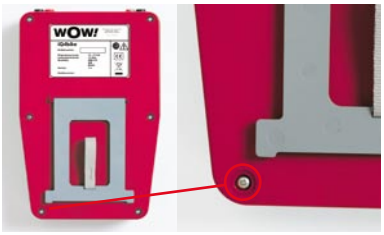
2.5 Battery change,

type AA, at hardware version 1.4, up to tool no. 3610

Steps:

1. Switch off iQ4bike, remove all connecting cables.
2. Remove the protective casing, starting at the narrow end.

3. Remove the six fastening screws using a suitable tool.

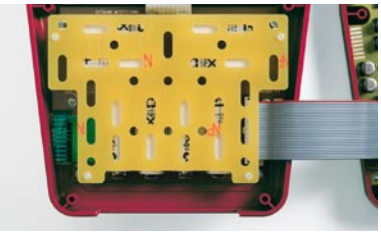


4. Open up the back panel to the right.

ATTENTION!

Do not disconnect any cable plug.

5. Carefully lever off the plastic cover using a suitable tool.



6. Replace the batteries, pay attention to the correct polarity.
7. Reassemble in the reverse order.

NOTE

Recycle used batteries in accordance with the applicable environmental and disposal regulations.

2.6 Replacing the Lithium Polymer battery pack

Warning notices for lithium polymer batteries

Storing the batteries

- Only in original box
- Storing temperature must not be less 10 °C and must not exceed 50 °C
- No exhaustive discharge of batteries allowed. Regularly charge the batteries when stored over a longer time

Application

1. The batteries are charged ex works with approx. 50 %. Before first operation of the tool, charge the batteries with the delivered tool and regard the appropriate operating instructions.
2. Proceed carefully when inserting the batteries.
3. The terminals of the batteries must not be connected - neither incidentally nor intentionally - with one another and must not get in touch with metal things. The battery pack will have a short circuit and causes a high short-circuit current.
4. When laying down the battery pack, the batteries and their connections must point to the top. Otherwise, short circuits are likely.
5. Do not drop the batteries. Do not use damaged or deformed batteries (e.g. after drop).
6. Batteries are no toys and are not suitable for children, they must be kept out of children's reach. This holds for the charger, too.

Replacement/repair of the battery pack

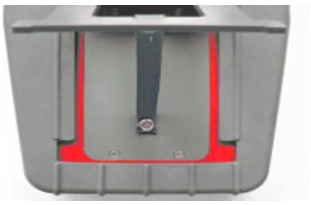
- The battery pack is combined with the according electronics and cannot be repaired. The batteries can be damaged by soldering or mechanical work.
- Only insert the batteries, which are offered by WOW!.
- Battery pack and charging electronics are one unit and must always be replaced together.
- From the moment of opening the sales or shipping packaging of the replacement batteries, the user acts on his own risk and has no claims against the manufacturer, importer and dealer (their assistants as well) in case of any accidents with personal or material damage.
- The complete battery pack must be immediately replaced in case of a damage on the batery pack or a cell. Replace it only with a battery pack available at WOW!

WARNING!

The non-observance of the above mentioned points can lead to leakage of the batteries, overheating, explosion or fire. Do not use the batteries , if there are any damages, corrosion, smells or excess heat. An internal short circuit may lead to excess heat only after some hours. If damages on the batteries are suspected, remove it immediately from the device and position it on a fire-proof surface or in a fire-proof container.
Only use the original battery charger. If the batteries are charged incorrectly (too high temperature, too high voltage, current or wrong battery charger), this may lead to excess heat, explosion or even fire.

Steps:

1. Regard the above mentioned safety instructions.
2. Switch off iQ4bike, remove all connecting leads.
3. Remove the screw of the strap for the extending support.
4. Remove the four screws from the battery pack.
5. Remove the battery pack.
6. Reassemble in the reverse order.

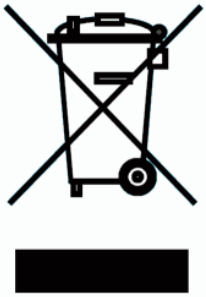


ATTENTION!

Regard the installation direction. The fixation of the strap is on the bottom.

DISPOSAL OF USED BATTERIES/ACCUMULATORS

Batteries contain toxic substances. Do not throw used batteries into household rubbish, but



dispose them accordingly. In order to prevent accidental short circuits mask the poles for transport or disposal with insulating tape.

NOTE

Recycle used batteries in accordance with the applicable environmental and disposal regulations.

2.7 Screen

The indication consists of header, selection window or indication window and footer.

Menu bar

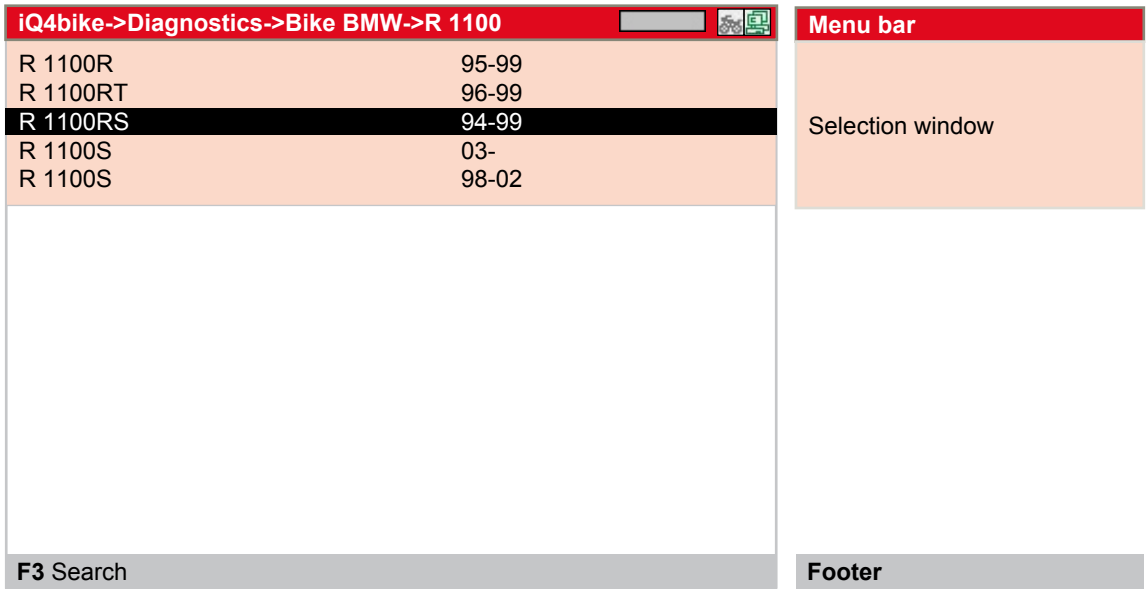
The menu bar is highlighted in green and indicates the current menu point. Symbols indicate the communication status.

Selection window

Functions of the indicator light	
	Memory indication: A progress bar indicates the running storage process.
	Left display, motorcycle communication, Right display, communication with external devices
	Data transmission is not activated.
	Data transmission is in progress.
	Symbols alternating green/grey: data transmission is without faults.

The selection window is highlighted in grey and shows the subsections of the menu.

Application

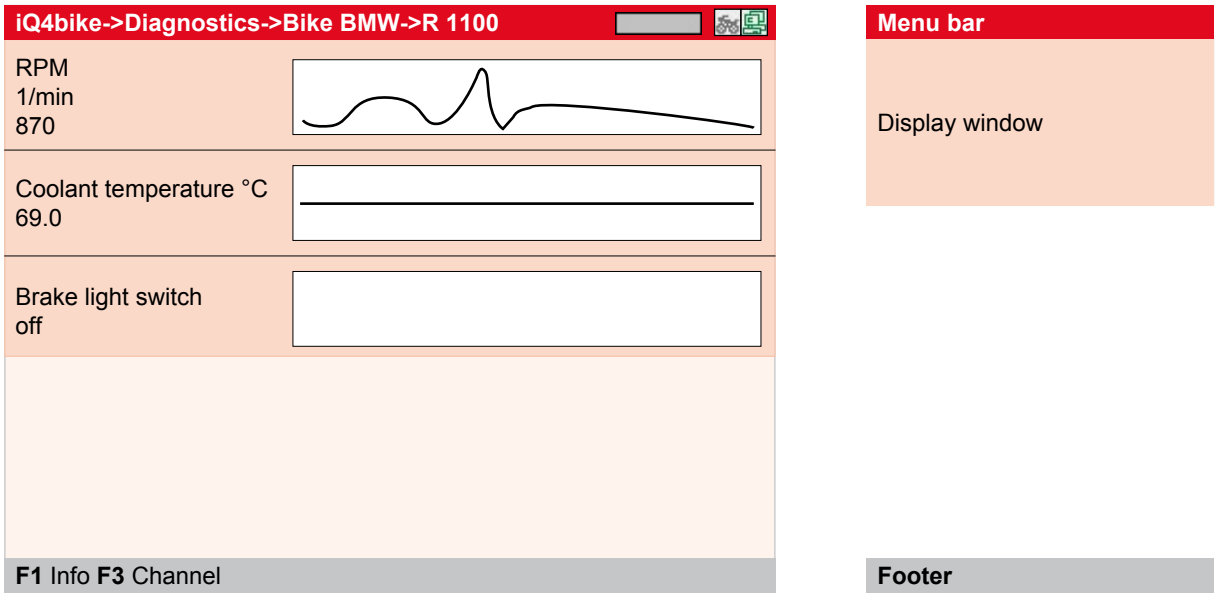


Steps:

Select and confirm the line.

Display window

The display window is highlighted in grey and indicates all values and information.



Footer

The footer indicates the options of the function keys. ***F1***, ***F2*** and ***F3*** are extended by a text according to the selected menu, which exemplifies the function.

Example: ***F1*** Info, ***F3*** Channel

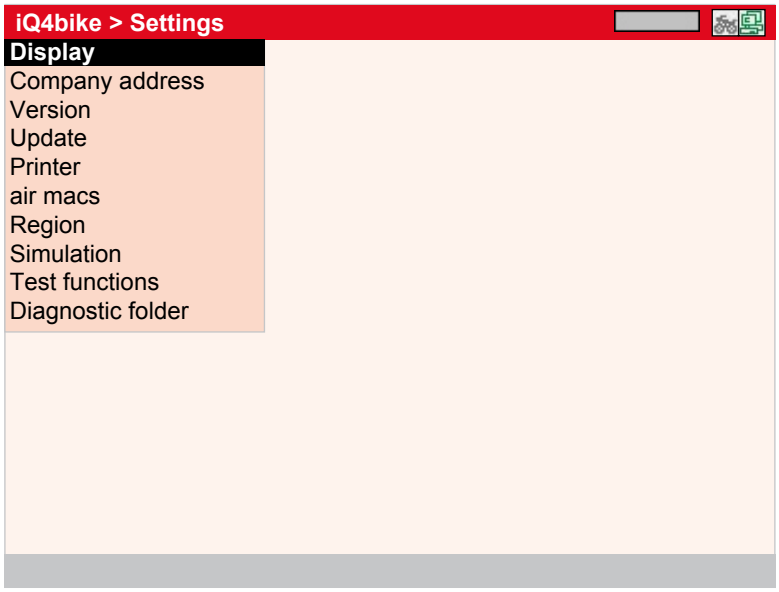
F2 Menu opens a selection window.

Example: F2 zero balance, zero line and trigger

3 Settings

The main menu >***Settings***< contains all programmes in order to

- set
- test and
- update iQ4bike



3.1 Settings for >Display<

The >***Display***< menu is used to adjust the brightness of the screen.

Steps:

1. Select and confirm ***>Display<***.

1. Select >***brighter***< or >***darker***< with .
2. Changing the setting: Hold button pressed.
3. Return ESC

3.2 Settings for >Company address<

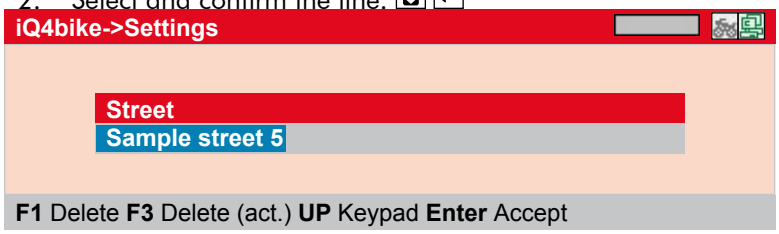
Input of the company's address printed onto the protocol of the diagnostic folder.

Steps:

1. Select and confirm >***Company address***<.

Company address	
Name 1	:Car dealership
Name 2	:Sample
Postal code	:79XXX
City	:Sampleville

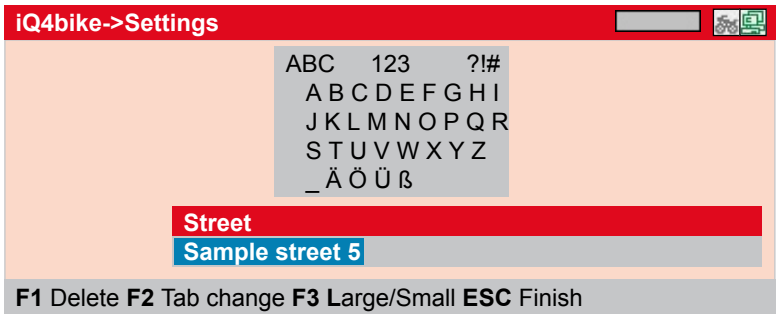
2. Select and confirm the line.



NOTE

blue background	This entry is marked. In order to unmark the entries, press .
Mark	With buttons
F1	Deletes the entry left of the cursor.
F3	Deletes the entry marked with the cursor.
UP	Applies all entries to the field.
Enter	Corresponds to . The virtual keypand will be opened, marked entries will be cleared.

3. Open the virtual keypad with [↔] .



Use the keypad	
Choose the sign	[↕] [0] [0]
Apply the sign	[↵]
Space	Underscore in front of the umlauts in the last row
F2 Tab change	Change between letters, figures and special characters
F3 large/small	Change of capitalisation
ESC	Complete the input

4. Complete the input with [ESC].
5. Accept the input with [↵].

Info message

Accept settings finally?
ENTER (yes) ESC (no)

6. 6. Confirm the message accordingly.
7. 7. Complete the following address fields as described above.
8. 8. Back to main menu with [ESC].

Your inputs are saved and can be printed onto the protocol of the diagnostic folder.

3.3 Settings for >Version<

Here you will find all information required for the identification of iQ4bike.

Versions	
Overview	
Software:	1.40.xx
Data:	32.05.xxx
Design:	1.4 (31.xxx)
Hardware:	1.xx
Tool no.:	12xx
Access mask	:00Fxxx

Programme
Data version
Switching
Housing etc.
Customer assignment
Information on released functions

In case of a failure, WOW! requires these data.

ATTENTION!

The update is impossible if the tool number of iQ4bike is missing.

3.4 Settings for >Update<

WOW! provides its customers with updates for the iQ4bike available. These updates are not free. For Customers of WOW! Updates are available for the iQ4bike. We recommend that the iQ4bike by Regular updates to keep up to date

Preconditions:

- web-compatible PC
- activated partner licence of WOW!
- ***>WOW! Portal<*** installed on the PC
- free USB interface on the PC
- iQ4bike voltage supply through mains supply

3.4.1 preparing PC for update

The PC must be before an update is possible to configure for the function

1. insert the included CD "WOW! Bike update portal" in the PC
2. The installation program will start automatically
3. Then click ***[Install]***. The files are copied to the PC.
4. Click ***[Finish]*** when the button switches.
5. The update portal can now be started from the ***Start menu*** or the ***icon*** on the desktop

3.4.2 Steps on the PC

1. The PC must be connected to the Internet.
2. Connect the iQ4bike through the USB cable to the PC.
3. When first connecting the drivers are installed.
4. Start the "WOW! PORTAL" to the PC via the icon ***WOW! iQ4bike*** on the desktop.
5. The PC is now ready for data transfer.

3.4.3 Steps on iQ4bike

ATTENTION!
During an update, iQ4bike must be supplied through the mains supply and must not be disconnected from the voltage source during this time.

1. Connect the iQ4bike mains supply to a 220 V socket.
2. Switch on iQ4bike and call up the menu ***Settings > Update***.

Update
Update
System check

3. Select and confirm ***>Update<***.

The update will be started.

Data transfer..., data check	
Step	:Start with ENTER
Language	:english
Interface	:USB
File name	:xxxx
File size	:123563
Bytes from file	:23456
Total files	:245
Faulty files	:xxx

The message ***Update successfully finished*** is shown afterwards.

4. Switch off iQ4bike.

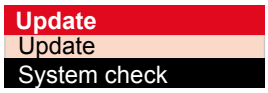
Step	:Update successfully finished
Language	:english
Interface	:USB
File name	:xxxx
File size	:
Bytes from file	:
Total files	:
Faulty files	:0

All modifications are available with the next start of iQ4bike.

ATTENTION!
In every case disconnect iQ4bike from external voltage supply.

3.4.4 Fault messages after the update

Steps:



1. Select and confirm update in the ***>Settings< menu.***
2. Select and confirm ***>System check<***.

Step	:Update successfully finished
Language	:english
Interface	:USB
File name	:xxxx
File size	:
Bytes from file	:
Total files	:
Faulty files	:1

System check will be done automatically. The following list is shown afterwards:

3. Return ESC.

3.5 Settings for >Printer<

Steps:

- Select and confirm ***>Printer<.***

NOTE	SETTING
Print company address	yes/no
Printout	Network/ USB printer

3.6 Settings for >iQ4bike base<

The iQ4bike exchanges data with the PC via wireless connection.

NOTE

iQ4bike base Assignment during the first start-up or after replacement of ***>iQ4bike base<***. iQ4bike base can be connected to the PC. Information about the Installation is specified in the corresponding operating manual.

Preconditions:

- ***>WOW! Portal<*** is activated on the PC.
- ***>iQ4bike Base<*** is connected to the PC and ready for operation.

iQ4bike Base

Steps:

1. Start the ***"WOW! PORTAL"*** to the PC via the icon on the desktop or the Start Menu
2. Select and confirm ***>iQ4bike<*** ↕ ↵.
3. Select and confirm ***>iQ4bike Base search<*** ↕ ↵.
4. Back to main menu ESC.

Info message
Search for iQ4bike base (procedure takes approx. 1 min.)

Please wait ...

Info message
air macs PC found and determined as remote station.

The connection is now determined and will be automatically established when starting iQ4bike and the WOW! Portal.

3.7 Settings for >Region<

The ***>Region<*** menu is used to set the country and language for iQ4bike.

ATTENTION!

The language- and country-specific versions must be always identical.

3.8 Settings for >Simulation<

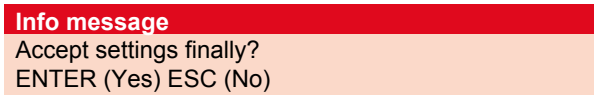
The ***>Simulation<*** menu contains a programme, with which the mechanic can practice the usage of iQ4bike. The simulation holds for the applications ***>Reading/deleting fault codes<*** and ***>Parameters<***.

ATTENTION!

Communication to the selected system will not be established if a motorcycle is being connected and the simulation mode is active. The values indicated are wrong. After restarting iQ4bike, the simulation is not active any longer.

1. Select and confirm ***>Simulation<*** .

2. Select and confirm ***>on</>off<*** .



3. Confirm the info message accordingly.

3.9 Settings for >Test function<

If no communication to the motorcycle is established, use this programme to check the function of the diagnostic plug.

Connect the mains supply to iQ4bike.

Steps:

4. Select and confirm ***>Test functions<*** ↕ ↵.
5. Connect the ST2 cable to iQ4bike.
6. Continue with ↵

The following messages can be displayed:

Info message	
A fault occurred! (pin)	
Line Out:	A
Line In:	B
Pin (Out):	1
Pin (In):	1
Range:	1
Number:	1
Nominal level (out):	1
Actual level (out):	1
Nominal level (in):	1
Actual level (in):	0

Diagnostic plug, cable or iQ4bike defective.
or
iQ4bike is OK.

Info message
Test successfully done

Diagnostic port inside the motorcycle defective e.g. no voltage on pin 16 or rather poor earth connection on pin 4.

3.10 Settings for >Diagnostic folder<

The ***>Diagnostic folder<*** menu contains all the settings which are required for its configuration:

1. Select and confirm ***>Diagnostic folder<*** ↕ ↵.

Diagnostic folder settings
Delete all entries

NOTE

Delete all entries — All entries in the diagnostic folder will be deleted.

2. Select and confirm >Delete all entries<: ↕ ↵.
3. Select and confirm the setting. ↕ ↵
4. Return ESC.

3.11 Settings for >Date<

The ***>Date<*** menu is used to set the date.
For proceeding see section ***>Company address<***.

3.12 Settings for >Time<

The ***>Time<*** menu is used to set the time.
For proceeding see section ***>Company address<***.

4 Diagnostics

4.1 Diagnostics under >ECU communication<

ECU communication is used to exchange data between tester and system.
Communication is necessary for the following tasks:

- reading/deleting fault memories
- displaying parameters
- carrying out actuator tests
- carrying out basic settings
- coding ECUs
- service resets

ATTENTION!

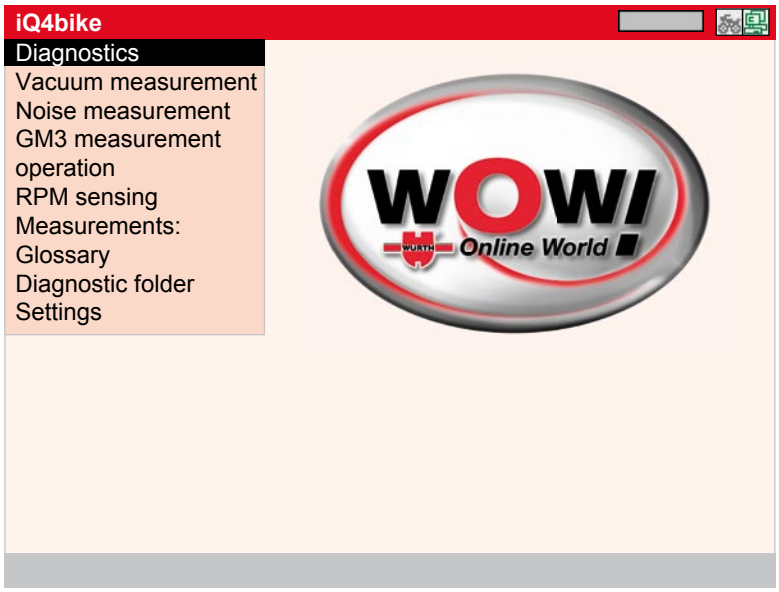
Trouble-free communication is possible only if:
· all pins of the diagnostic connection are correctly assigned.
· the motorcycle is identified correctly
Therefore, identify the motorcycle as exactly as possible.
· voltage of motorcycle electrical system is not lower 11,5 V. Use external power supply if necessary.
· all power consumers are turned off
· the diagnostic plug is connected to the motorcycle
· accessory equipment, radio, CD changer etc. are connected correctly
· ignition ON

NOTE

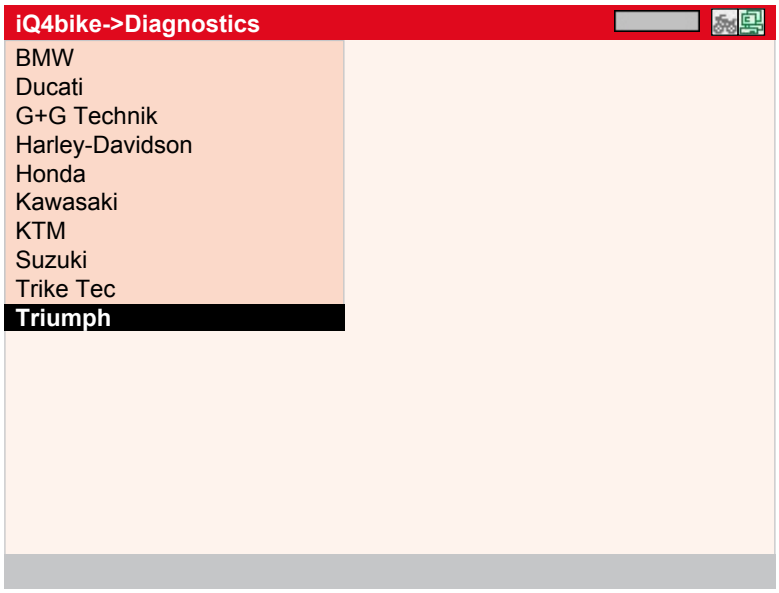
Always turn off the ignition before connecting or disconnecting the diagnostic plug from the motorcycle. If you wish to read out several fault memories one after the other, turn off ignition after every readout process and turn on again for the next process.

Steps:

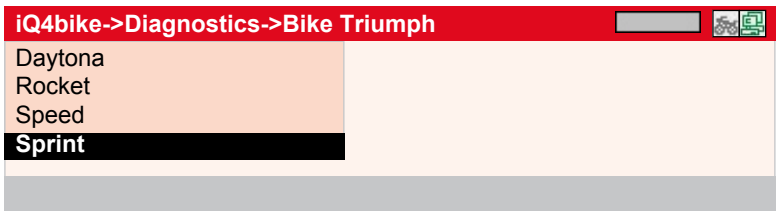
1. Connect the ST2 diagnostic cable to iQ4bike.



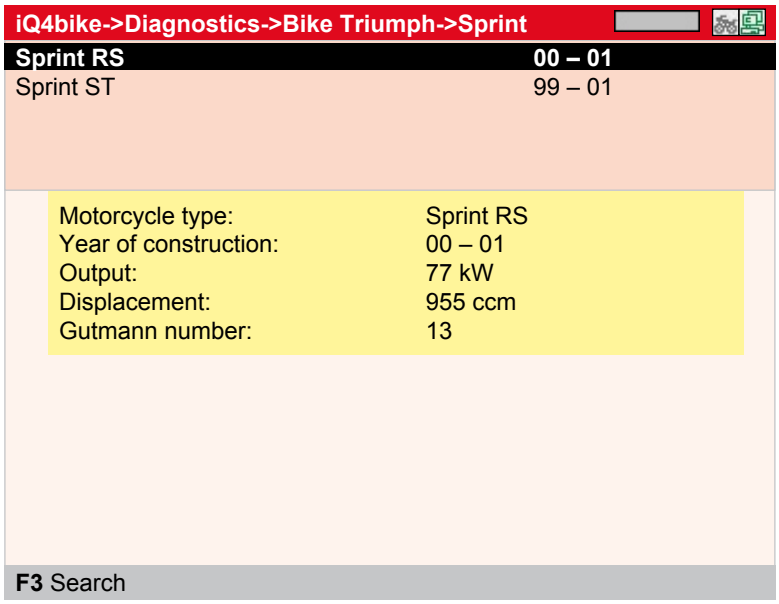
2. Select and confirm ***>Diagnostics<***.



3. Select and confirm the ***manufacturer***.



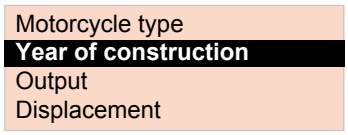
4. Select and confirm the motorcycle group.



NOTE

A light yellow info window appears for approx. 15 s. containing the data of the marked motorcycle. Press F3 Search to open a window with search criteria for the motorcycle identification.

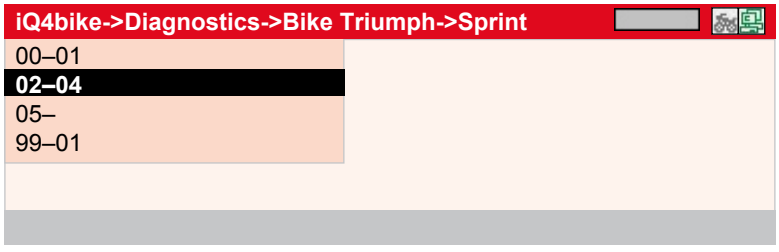
5. Confirm ***>F3<***.



NOTE

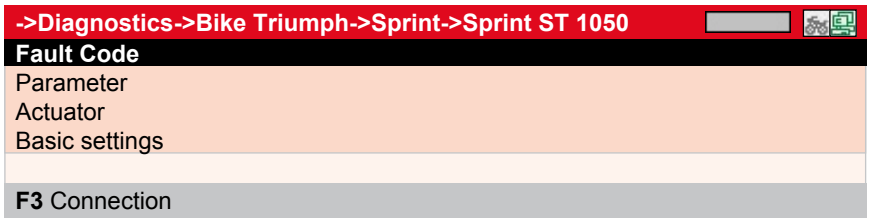
About ***>Diagnostic programme<***:
There is an indication of the diagnostic types possible for the motorcycle.

6. Select and confirm the ***search criterion***, in this case year of construction.

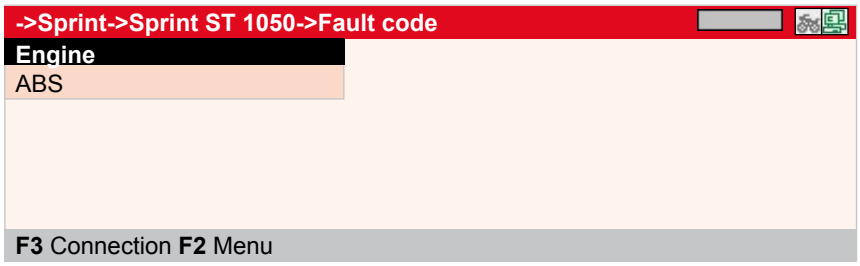


7. Select and confirm the ***year of construction***.

8. Select and confirm the ***motorcycle type***.



9. Select and confirm the ***diagnostic type***. ↕ ↵



NOTE

F3 Connection Location of the diagnostic connection

10. Select and confirm a ***system***. ↕ ↵

NOTE

F1 Info Information about the selected system.

F2 Menu Information on the communication parameters. In case of a complaint, WOW! requires this information to detect and repair the fault.
Leave the info menu with ESC.

ATTENTION!

Modifications of the data can lead to malfunctions.

11. Connect the diagnostic plug.
12. Ignition ON.

ATTENTION!

Follow the instructions on the screen without fail.

13. Continue with ↵.
14. Enter the ***licence number*** and accept with ***>F1<***.

Communication to the ECU is being established.
The sections with the types of diagnoses contain further information.

4.2 Diagnostics under >Fault codes<

If a component malfunction is detected while ECU carries out an internal test, a fault code is set in memory and the corresponding warning lamp is being activated. The iQ4bike delivers the fault code in plain text. It also contains information about the fault code as well as possible reasons and causes. The iQ4bike enables both single and complete check of all components assigned to the motorcycle. The following reasons are possible:

Fault 0	communication OK	No fault saved
Fault xx	communication OK	xx faults saved
Fault --	communication not OK or component module not installed	

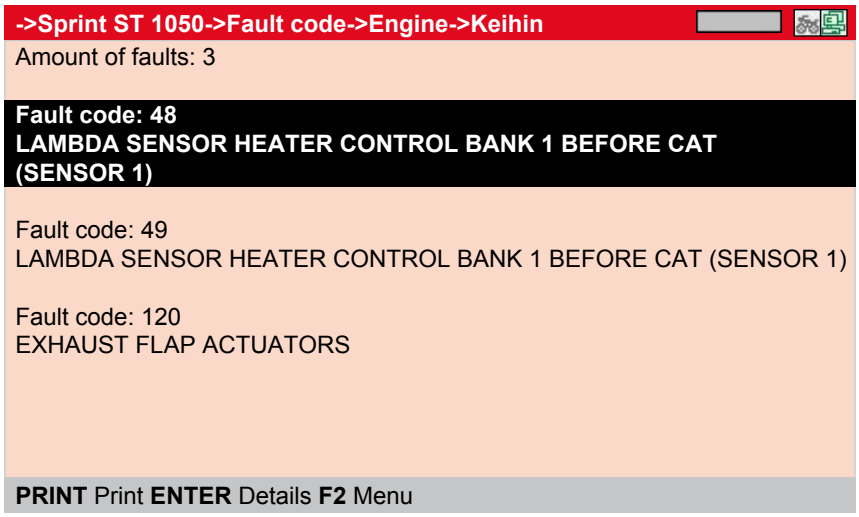
After finishing the overall request, it is also possible to directly read out the individual components.

Steps:

1. Select and confirm the ***component module***.
2. Start the communication with ***>F1<***.

Steps for the individual component retrieval

3. Connect iQ4bike as described in section E - Communication Establishment.
4. Select and confirm ***>Fault code<***.



NOTE

PRINT Print	Printing out the selected fault code.
ENTER Details	Information regarding the marked fault are indicated.
F2 Menu	System info, print, details, send result.

->Sprint ST 1050->Fault code->Engine->Keihin
Fault code 48: LAMBDA SENSOR HEATER CONTROL BANK 1 BEFORE CAT (SENSOR 1) - FAULTYELECTRIC CIRCUIT FUNCTION: - The lambda sensor heater control monitors and controls the function of the sensor heater. GENERAL FAULT CODE DIAGNOSTICS
PRINT Print **ESC** Back

All information can be displayed by scrolling.

Connection to measurements

Example:

Interruption/short circuit in electric circuit

1. Select and confirm.

See section M for taking measurements.

Voltage
Resistance
Current
Voltage/Voltage
Voltage/Current
Temperature
Pressure
Component measurement

2. Return to the desired menu point with ESC.

4.3 Diagnostics under >Parameters<

As the ECU interprets fault reasons differently, it is often not enough only to read out the fault memory. Fault codes are often not stored or the fault text delivers only insufficient comments on the defective component.

Example 1

Engine temperature can be within a range of -30...+120 °C.

If the sensor reports +9.0 °C, but real engine temperature is +80 °C, then ECU will calculate a wrong injection time.

A fault code will not be set, as this temperature is logic for the ECU.

Example 2

Fault text: incorrect lambda probe signal

In both cases, diagnostics is possible only, if the appropriate parameters are read out.

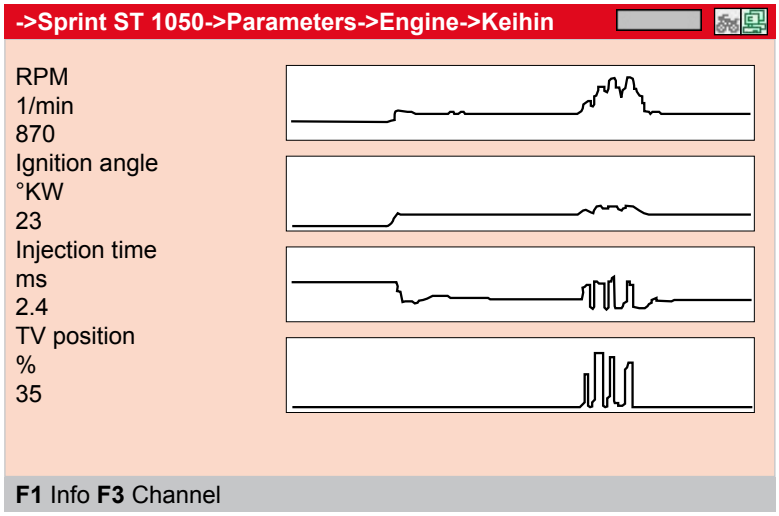
The iQ4bike reads the parameters and displays them in plain text.
Maximum four parameters can be displayed also in diagrams.
A maximum of 8 parameters can be called up but then only with figures and not with diagrams.

A task-oriented parameter selection facilitates the fault diagnosis.

Information about the parameters is stored.

Steps:

1. Connect iQ4bike as described in section E - Communication Establishment.



NOTE

F1 Info Indication of information about the selected parameter.

Info Channel
RPM
Nominal engine rpm
Intake air temperature

2. Select and confirm the ***parameter***.

Info parameter
RPM RPM Is the current engine rpm in 1/min. Sensors register the rpm on the camshaft or crankshaft and forward it in revolutions per minute based on the crankshaft.

NOTE

F3 Channel Selection window with all parameter groups. WOW! has compiled a preselection for special diagnostic tasks. By selecting a group, the parameters can be called up, which are required for the diagnosis. can be called up.

Group selection
All parameters
Basic function
Engine start
xxxxxx

3. Select and confirm the ***group***.

Parameter selection		
1 ▮ rpm		1/min
2 ▮ Battery voltage		V
5 ☐ Injection time		ms
9 ☐ Engine temperature		°C
F1 Help **F2** Unselect **F3** Nom. values		

Steps:

>F2< unselects all parameters marked with ▮.

1. Highlight the parameter with .
2. Select or unselect the ***parameter*** with .
3. Reestablishing communication with ESC.

NOTE

Regard the info message if you want to select more than 8 parameters.

Info message
- The parameters will not be depicted graphically. - The measured values will not be saved in the diagnostic folder.

4.4 Diagnostics under >Actuators<

The ***>Actuator<*** menu is used to activate components in electronic systems. This enables to check basic functions and cable connections of those components.

DANGER!

Follow the instructions on the screen to avoid any damage of the system.

Identification and communication establishment correspond to section E.

NOTE

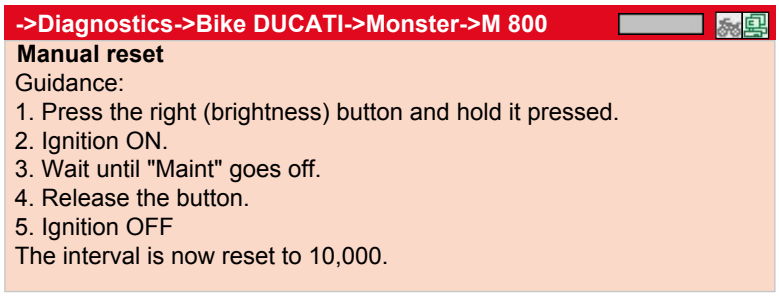
With some manufacturers, the actuator test procedure is automated and predetermined by the ECU.

4.5 Diagnostics under >Service resets<

The ***>Service reset<*** menu is used to reset the service intervals depending on the manufacturer. Here you will find a description for the manual reset or iQ4bike carries out the reset automatically. Identification and communication establishment correspond to section E.

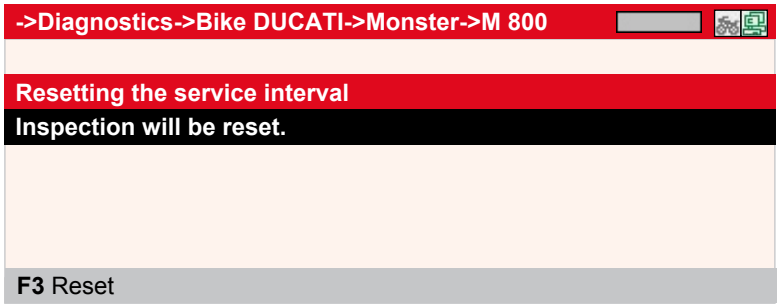
Manual reset

4. Select and confirm ***>Service reset<***.



Automatic reset

Identification and communication establishment correspond to section E.



1. Select and confirm the interval.
2. Press ***>F3<***.

The reset will be done after establishing a communication.

ATTENTION!
Follow the instructions on the screen without fail.

4.6 Diagnostics under >Basic settings<

The ***>Basic settings<*** menu is used to adjust or adapt values of components (according to the manufacturer) which e.g. had to be replaced. Motorcycle identification and communication establishment correspond to section E.

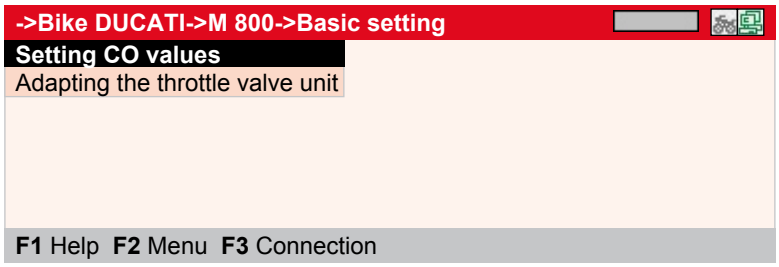
ATTENTION!

The fault memory must be cleared before a basic setting.
Depending on the manufacturer, the basic setting requires certain preconditions.
Strictly follow the notes in iQ4bike.

DANGER!

Wrong basic settings can lead to severe malfunctions.

Steps:



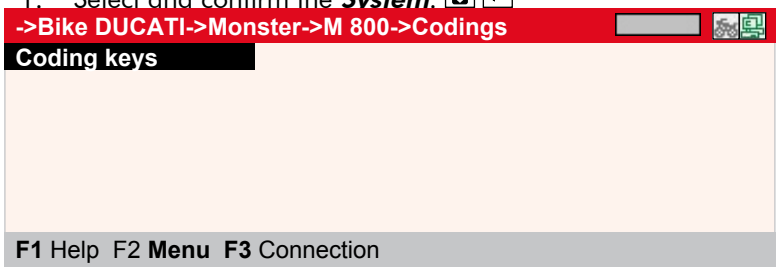
1. Select and confirm ***>System<***.
2. Follow the instructions on the screen.

4.7 Diagnostics under >Codings<

The ***>Coding<*** menu is used to code ECUs and components.
Codings are necessary, if components were replaced or additional functions in an electronic system must be activated.
Motorcycle identification and communication establishment correspond to section E.

Steps:

1. Select and confirm the ***System***.



NOTE

F1 Help	Information about the system and assistance for the coding procedure.
F2 Menu	Information on help, connection, data and problem detection
F3 Connection	Location of the diagnostic connection

2. Follow the instructions on the screen.

5 Measurements:

Measurement equipment in iQ4bike serves for measuring voltage, resistance, current, pressure and temperatures on motorcycle components.
The ***>Component measurement<*** menu contains pre-set measuring parameters for different components.

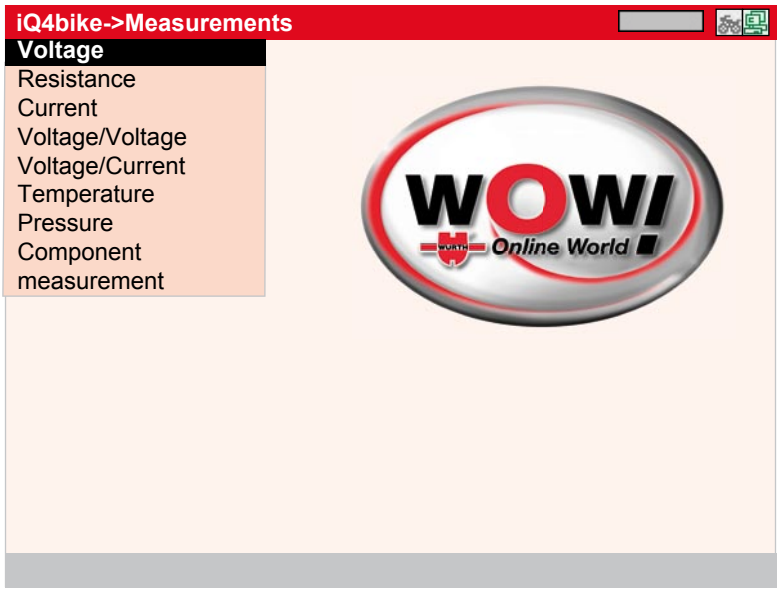
Measuring ranges		
Voltage/Time	0...200 V	0...100 s
Resistance/Time	0...1000 kOhm	0...100 s
Current/Time	0...400 A	0...100 s
Pressure	0...2000 bar	
Temperature	-30...+550 °C	

ATTENTION!

Before the following measurement, reset the measured value with F1.
The amps clamps recognise the technical direction of current and therefore have an arrow showing the connecting direction.

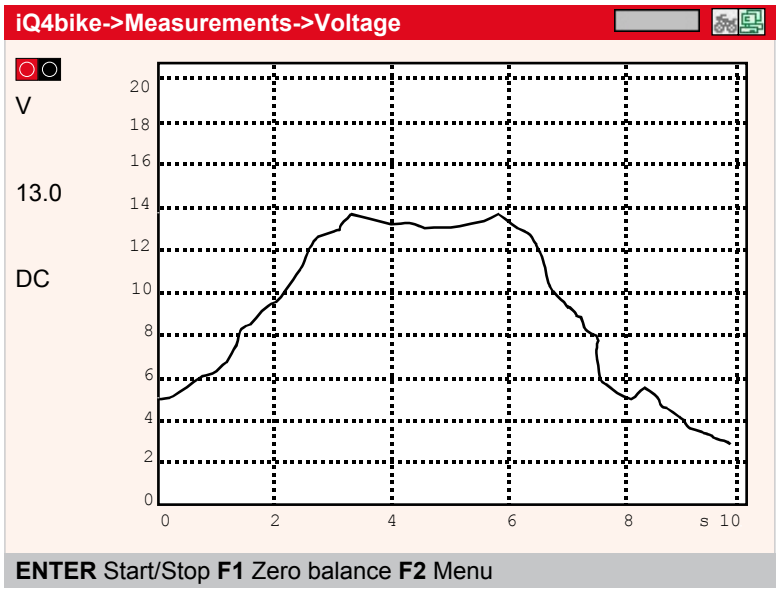
DANGER!

Regard the test- and safety regulations for every measurement. Carry out resistance measurements only on de-energised components!



- Select and confirm the ***measuring mode***.

5.1 General settings



0 - 20	Measuring axis
V, A, Ohm, °C	Measuring unit
13.0	Measured value
AC/DC	Voltage type
0 — 10	Time axis

ATTENTION!

Use the green/black port.

Modification of the measuring axis with ⇕.

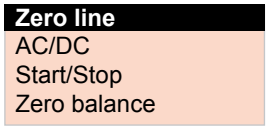
Modification of the time axis with ⇦ ⇨.

NOTE

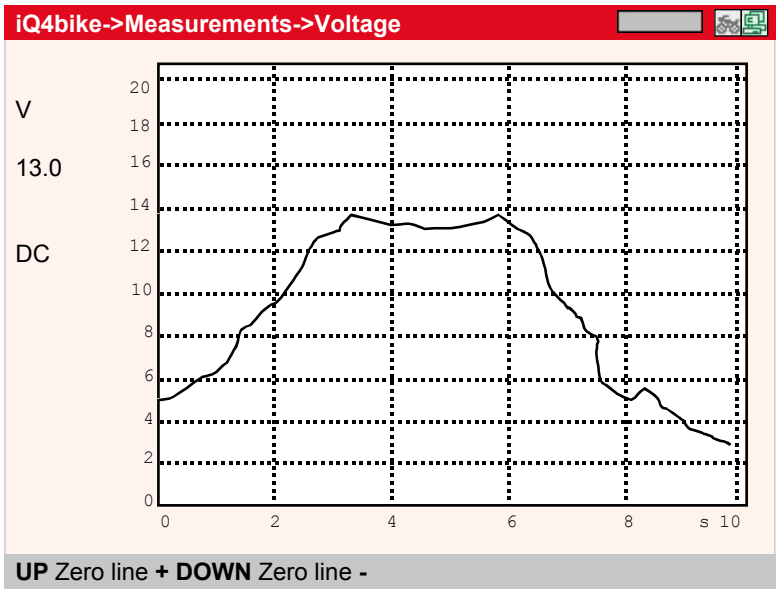
ENTER Start/Stop	The current indication will be recorded, like a snapshot function. Press ENTER again to continue the measurement.
F1 Zero balance	Measured value will be reset.
F2 Menu	Setting of zero line, trigger level, trigger position and voltage type. The setting functions are shown in the footer.

5.2 Settings under F2

Zero line



1. Select and confirm ***>Zero line<***.



Zero line up with .

Zero line down with .

NOTE

The setting function will be aborted and the standard display in the footer will be called up if no arrow button is pressed within 5 s.

5.3 Voltage type

Zero line
AC/DC
Start/Stop
Zero balance

1. Select and confirm ***>AC/DC<***.

NOTE

AC — If AC is selected then only the alternating voltage values of a signal are indicated e.g. the harmonics of an alternator.

DC — If DC is selected all voltage values of a signal are indicated e.g. battery, throttle position sensor etc.

Coupling
Channel 1: DC

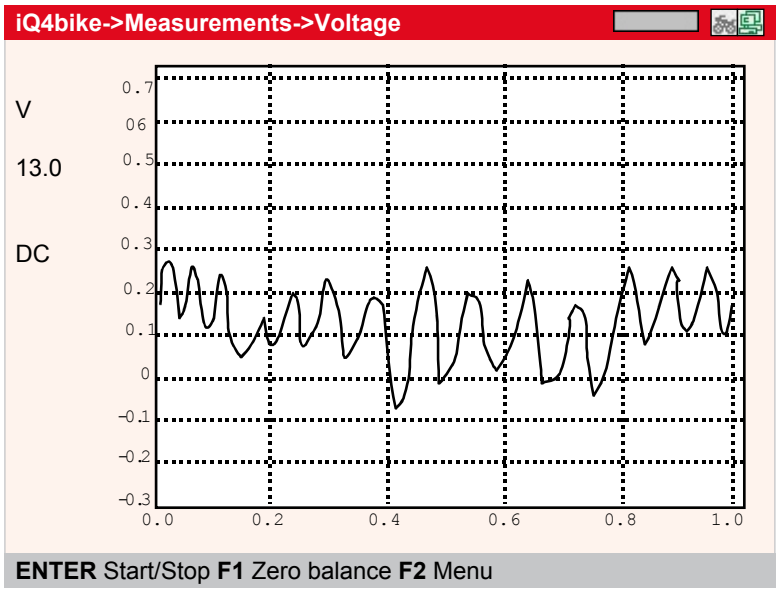
2. Confirm >Channel 1: xx< with ↵.

Coupling
DC
AC

3. Select and confirm ***>AC<***.

Coupling
Channel 1: AC

4. Return ESC.

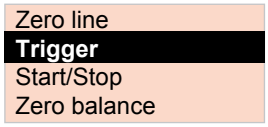


5. Adjust measuring range and zero line according to the signal.

5.4 Trigger

NOTE

If the time axis is set smaller 1,0 s, the trigger can be selected. The voltage curve depiction requires a trigger. As soon as the signal reaches a predefined voltage the trigger releases a new image. After starting the tool, iQ4bike is set to automatic triggering. Sometimes the trigger point has to be shifted in order to stabilise very fast signals. The necessary settings can be done under F2.



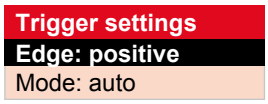
1. Select and confirm ***>Trigger<***. ↕ ↵

Trigger edge

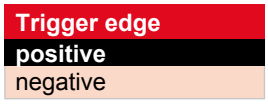
2. Select and confirm ***>Edge: xx<***. ↕ ↵

NOTE

>Edge: positive<	The trigger orientates on increasing voltages.
>Edge: negative<	The trigger orientates on decreasing voltages.
	An offset of the trigger edge causes a movement of the diagram to the left or right.



3. Select and confirm ***>positive< or >negative<***. ↕ ↵

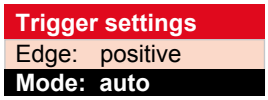


4. Accept the setting with ESC.

5.5 Trigger mode

NOTE

After tool start, iQ4bike is set to automatic triggering. If a signal indication is unclear or very unsettled, iQ4bike can be set to manual triggering.



1. Select and confirm ***>Mode: xx<***. ↕ ↵

2. Select and confirm ***>Auto< or >Manual<***. ↕ ↵
3. Accept the setting with ESC.

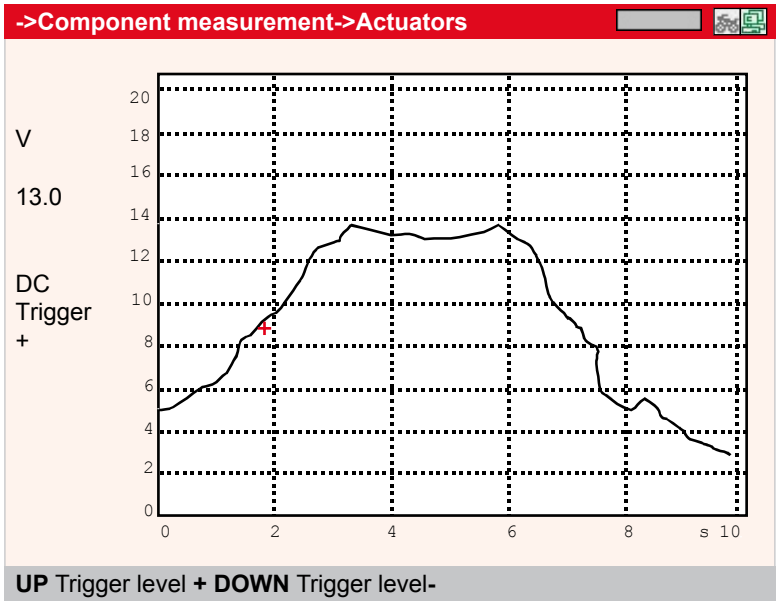
5.6 Trigger level

NOTE

It is possible to move the trigger level in the trigger mode >manual< in order to reach the optimal signal curve stabilisation.

Zero line
Trigger level
Trigger
AC/DC
Start/Stop
Zero balance

1. Select and confirm ***>Trigger level<***.



UP Trigger level **+ DOWN** Trigger level**-**

The trigger level is indicated by a red cross.

Raise the trigger level with t

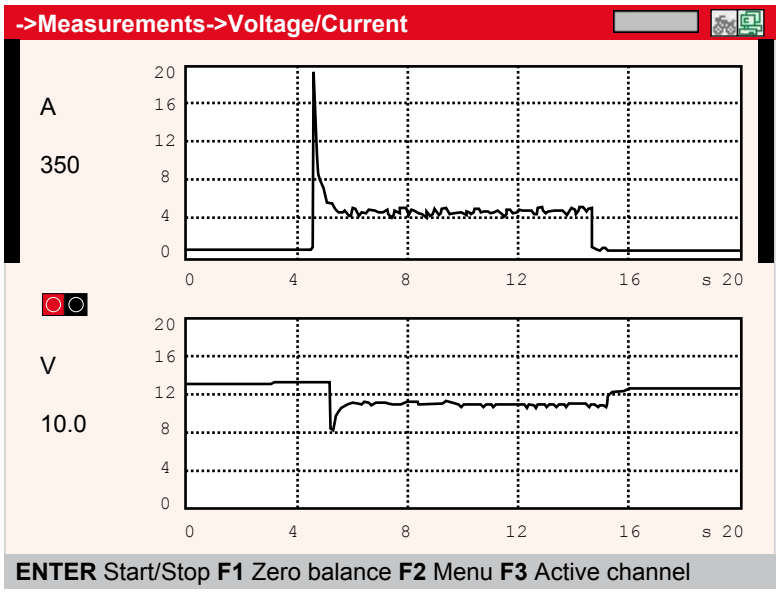
Lower the trigger level with .

ATTENTION!

After leaving the programme, the standard settings will be set again.

5.7 2-channel multimeter

The two-channel multimeter is used to make reference measurements on components. Settings and operation are the same as described beforehand.



ATTENTION!

Use the red/black port.

NOTE

F3 Active channel — Black bars on the left and right mark the active channel. Settings can be done only here. For proceeding see above.

5.8 Temperature

This measurement enables diagnoses, which are causally correlated to temperature curves.

ATTENTION!
The HGS infrared thermometer is required (optional equipment), article no. 301038.

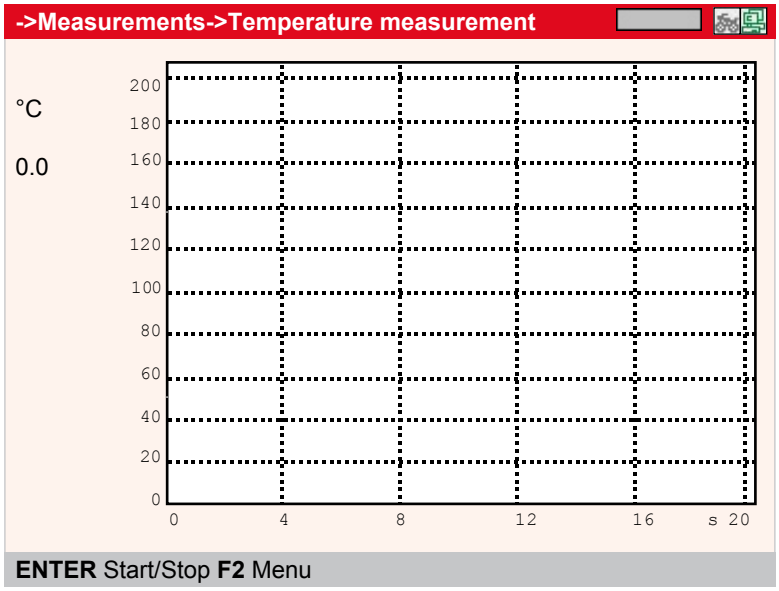
Examples:

Applications	Component	Diagnostics	Range up to °C
Lubrication system	Oil pan	Engine temperature	150
Cooling system	Radiator/Thermostat	Flow rate	120
Ignition	Single coils	Deviation	120
Exhaust system	Manifold	Mixture/Misfirings	500
	Catalyst	Efficiency	500
Drivetrain	Bearing/Sleeve	Wear	120
Brakes	Discs/Drums	Efficiency	500
Tyres	Tread	Adjust steering geometry	80

Calibration

1. Press ***F2***.

ATTENTION!
If used for the first time, iQ4bike must be once calibrated to the infrared thermometer.



Zero line
Temperature adjustment
Start/Stop

2. Select and confirm ***>Temperature adjustment<***.
3. Follow the instructions on the screen.

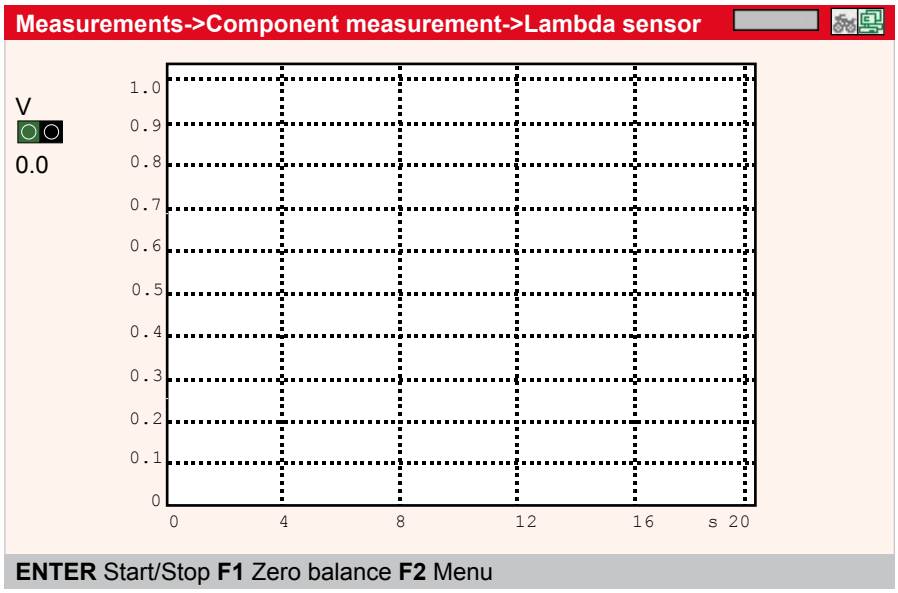
Info message
Adjustment low temperature

NOTE
Put in the temperature values with the virtual keypad.

5.9 Component measurement

To ease the measurement procedure, the measuring ranges for the appropriate component are pre-set in the ***>Component measurement<*** menu.

1. Select and confirm ***>Component measurement<***.
2. Select and confirm the component.



ATTENTION!
Use the green/black plug sockets on iQ4bike.

6 Glossary

The glossary contains information about automotive and technical terms. Input via virtual keypad.

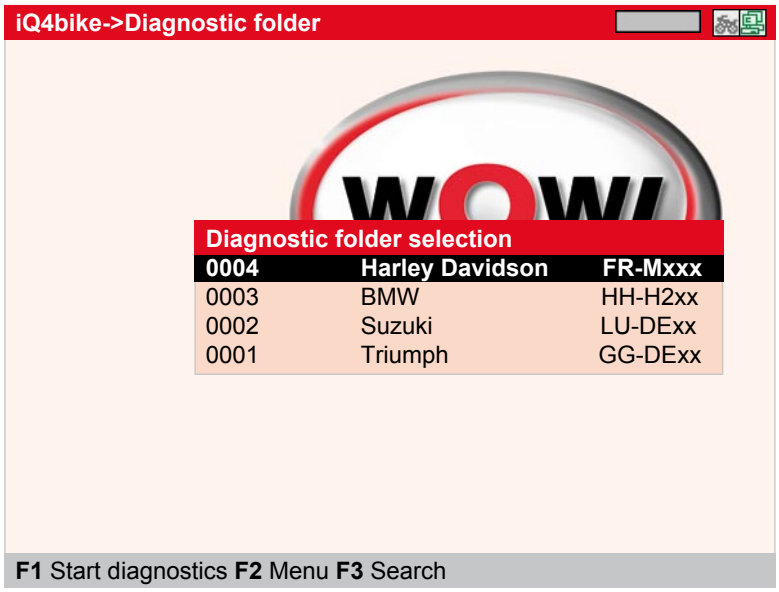
7 Diagnostic folder

All values determined during the communications with the systems are automatically saved in the diagnostic folder.

The ***>Diagnostic folder<*** menu is used to call up the stored motorcycle data. They can be displayed directly in iQ4bike or printed out via PC with ***>WOW! Portal<***.

Printing the diagnostic folder

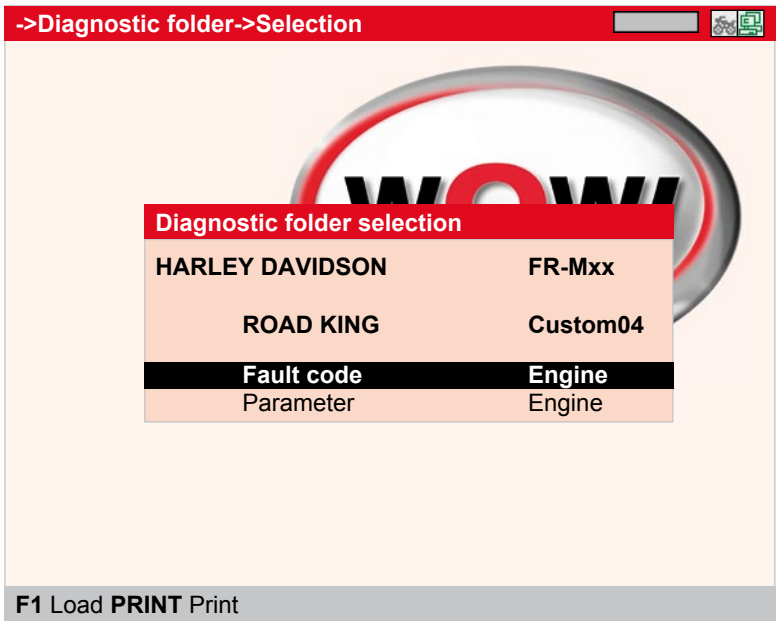
1. Select and confirm ***>Diagnostic folder<***.



NOTE

F1 Start diagnostics	Diagnostics will be started.
F2 Menu	Subsequent input of a licence number.
F3 Search	Search for a data set by entering a licence number, model or manufacturer.

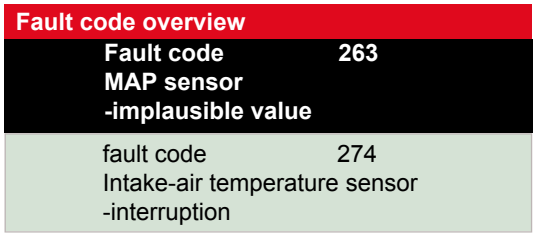
2. Select and confirm the motorcycle.



NOTE

F1 Load	Indication of the marked entries in iQ4bike.
PRINT Print	The displayed fault codes will be printed.

3. Select and confirm the ***diagnostic type***, here fault code.



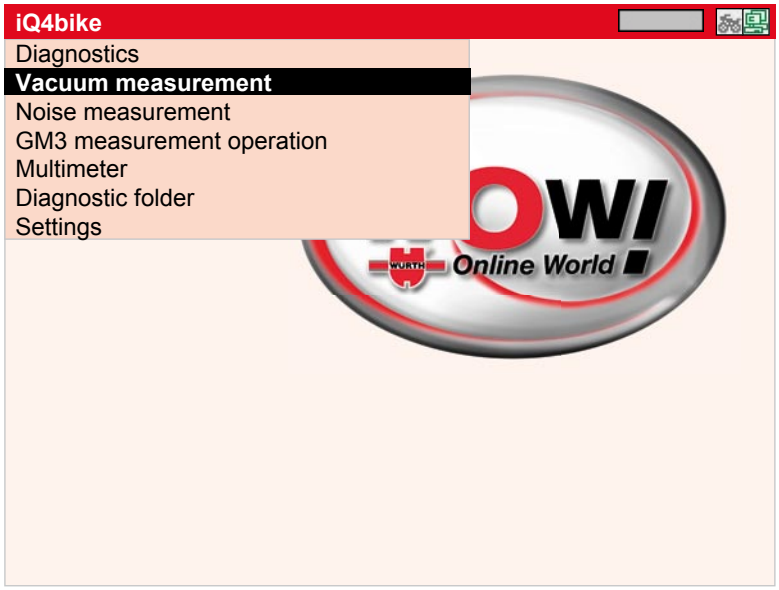
NOTE

ENTER Details	The stored information about the fault code will be called up.
PRINT Print	The displayed fault codes will be printed.

4. Return with ESC.

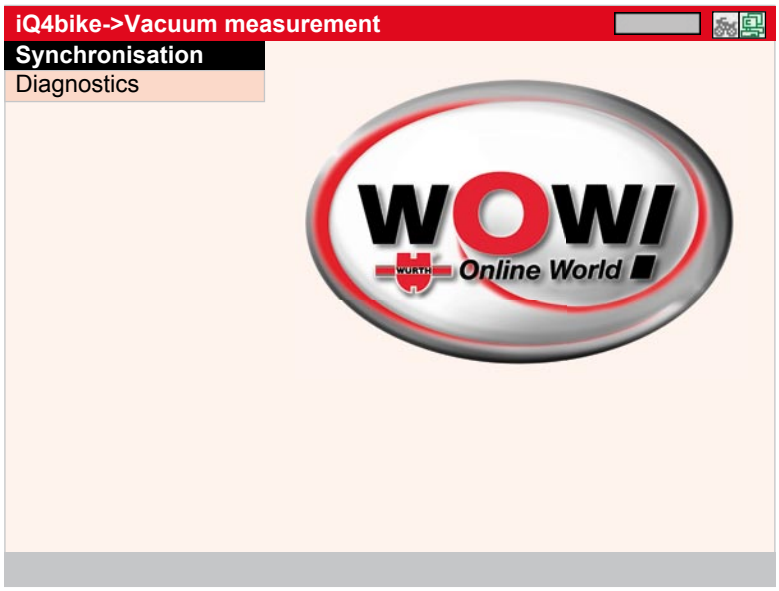
8 Vacuum measurement

The ***>Vacuum measurement<*** menu is used to take measurements and settings.



1. Select and confirm ***>Vacuum measurement<***.

Synchronisation



NOTE

The ***>Synchronisation<*** menu point is used to compare the cylinder vacuum in bar diagrams and then synchronised with the appropriate settings of the throttle valves. The engine rpm is measured through pulsating the intake air.

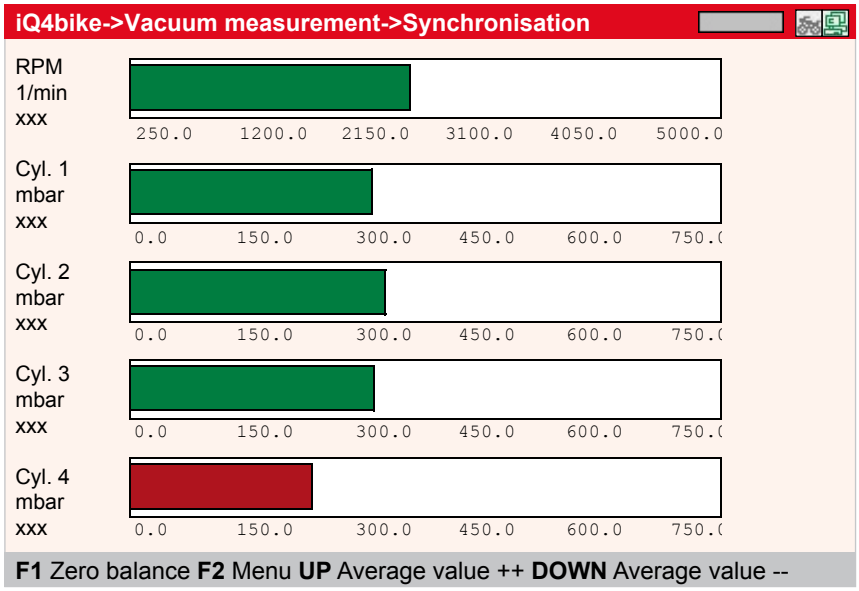
Steps:

2. Connect the vacuum module to ST2.
3. Connect the test adapters to the test connections of the intake ports according to size.
   Connect the ***1st connection*** at the vacuum module to the first engine cylinder. Connect the other connections accordingly.
4. Select and confirm ***>Synchronisation<***.

ATTENTION!

Press F3 to reset the display before starting the engine.

5. Engine ON.



Diagnostics

Connect iQ4bike as described above.

NOTE

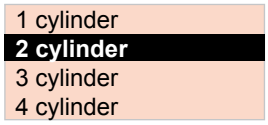
F1	Zero balance	Before starting the engine, the displayed values will be reset to zero.
F2	Menu	Setting the differential pressure: Tolerance input for the pressure indication: Tolerance range: fine 10 mbar average 20 mbar coarse 30 mbar
UP	Average value ++	Setting of the measuring sensitivity using the cursor
DOWN	Average value --	Setting of the measuring sensitivity using the cursor

NOTE

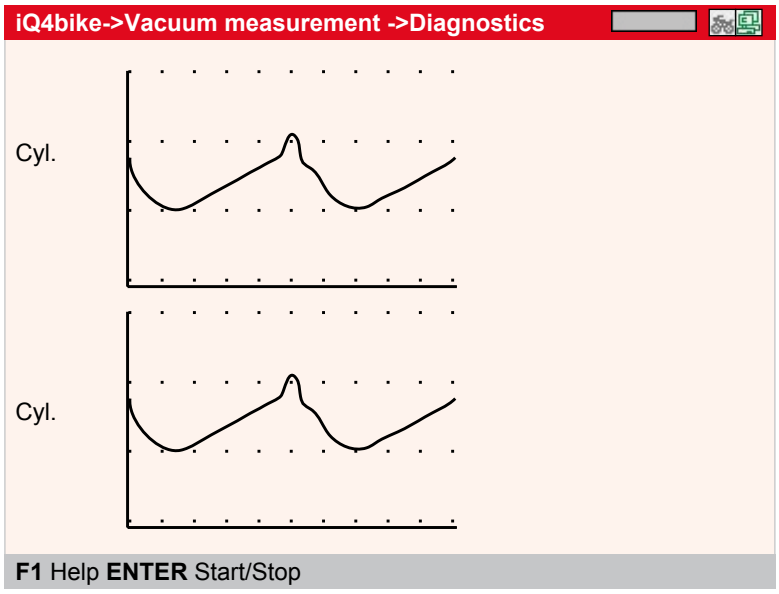
Use the >Diagnostics< menu to depict the pressure curve graphically. The curve allows an evaluation of the mechanical condition of the engine. Press >F1 Help< to access golden images and difference images and compare them to the measured ones.

Steps:

1. Select and confirm ***>Diagnostics<***.



2. Select and confirm the number of cylinders, 2 in this case.



NOTE

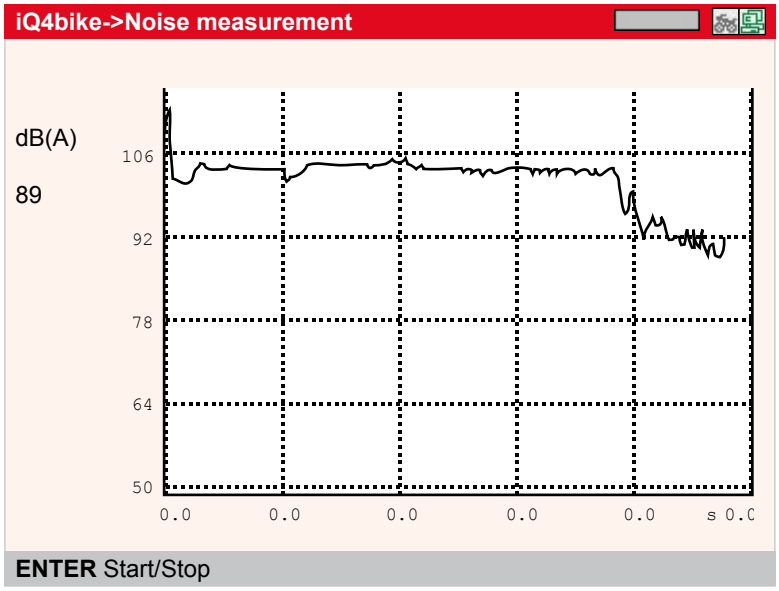
F1 Help	Examples for golden images or rather difference images are indicated.
Enter Start/Stop	Measurement will be stopped. Press ENTER again to continue the measurement.

9 Noise measurement

The ***>Noise measurement<*** menu is used to measure the sound intensity of a motorcycle.

Steps:

1. Connect the microphone to ST2.
2. Select and confirm ***>Noise measurement<***.
3. Hold the microphone at an angle of 45° and a distance of approx. 1 m to the exhaust.



NOTE

F3 Start/Stop — Measurement will be stopped. Press ENTER again to continue the measurement.

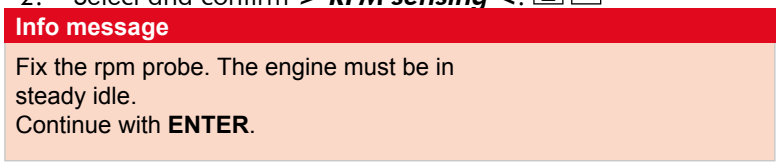
10 RPM sensing (option)

In the ***>RPM sensing<*** menu, the tool indicates the engine rpm by using a Hall sensor rpm sensing cable, art. no. S43111. HDE is a module used to pick up the engine rpm without contact.

Steps:

1. Connect iQ4bike with Hall-sensor rpm cable through ST2 port.

2. Select and confirm ***> RPM sensing <***. ↕ ↵



NOTE

For further probe adaptation, see HDE operation manual.

3. Continue with ↵.
4. Return ESC.

NOTE

The indicated rpm value must be adapted depending on the ignition system. Use the arrow buttons.

UP RPM correction + Adaptation of the rpm indication up
DOWN RPM correction - Adaptation of the rpm indication down