

# Rieju - Nuuk

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Workshop Manual



# Workshop Manual

## **RIEJU - NUUK**

The descriptions and images in this publication are given for illustrative purposes only and are not binding. While the basic characteristics as described and illustrated in this booklet remain unchanged, Rieju S.A. reserves the right, at any time and without being required to update this publication beforehand, to make any changes to components, parts or accessories, which it considers necessary to improve the product or which are required for manufacturing or construction reasons.

Not all versions/models shown in this publication are available in all countries. The availability of each model should be checked at the official RIEJU sales network.

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Rieju S.A. C/ Borrassà 41 E-17600 Figueres GIRONA-SPAIN

[www.riejumoto.com](http://www.riejumoto.com)



This manual for service stations was made by Rieju S.A. to be used by the workshops of dealers and sub-agencies RIEJU. It is assumed that users of this publication for the maintenance and repair of Rieju vehicles has a basic knowledge of the principles of mechanics and technique procedures of vehicle repair. Any significant changes to vehicle characteristics or specific repair operations will be communicated by updates to this manual.

**N.B.** Provides key information to make the procedure easier to understand and carry out.

**CAUTION** Refers to specific procedures to carry out for preventing damages to the vehicle.

**WARNING** Refers to specific procedures to carry out to prevent injuries to the repairer.



**Personal safety** Failure to completely observe these instructions will result in serious risk of personal injury.



**Safeguarding the environment** Sections marked with this symbol indicate the correct use of the vehicle to prevent damaging the environment.



**Vehicle intactness** The incomplete or non-observance of these regulations leads to the risk of serious damage to the vehicle and sometimes even the invalidity of the guarantee.



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# Introduction

# Introduction

This manual try to solve the most common problems found on the drive train from Bosch, currently installed in the models Rieju Nuuk.

When you turn on the bike (or switch on main lights) the dashboard performs a total self diagnostic check. If during this process an error is detected, an indicator in the Display will be switched on. If this error no longer exists, the light will automatically shut off after a driving cycle (charge and discharge of the battery).

## ➤ Rules

This section describes general safety rules for any maintenance operations performed on the vehicle.

## ➤ Safety rules

**Always make sure that your battery is fully functional. Should you have any questions, please contact the vehicle manufacturer or vehicle dealer.**

**Read all safety information and instructions.** If you do not observe the safety information, fire and/or severe injuries can occur.

**Do not open the battery.** This poses the risk of a short-circuit. An opened battery voids all warranty claims.

**Protect the battery against heat** (e.g. including prolonged exposure to sunlight) and fire. Do not operate or store the battery near hot or combustible objects. This poses the risk of an explosion.

**Do not immerse the battery in water.**

**When it is not being used, please keep the battery away from paper clips, coins, keys, nails, screws or other small metal objects that could create a short-circuit between the contacts.** A short-circuit between the battery contacts can result in combustion or a fire. All warranty claims against Bosch for short-circuit-related damage arising in such circumstances shall be deemed null and void.

**Do not place the charger and the battery near combustible material.** Charge batteries only when they are dry and at a location where fires cannot occur. The battery and the charger become warm during charging. This poses a risk of fire.



# Introduction

**If used improperly, liquid can emerge from the battery. Avoid contact with it. If you inadvertently come into contact with this liquid, rinse the affected skin areas with copious amounts of water and seek additionally medical assistance.** Escaping battery liquid can cause skin irritations or burns.

**Batteries must not be subjected to any mechanical impact.** This poses the risk of damaging the battery.

**In the event of damage or improper use of the battery, vapours can emerge.** Ensure an adequate supply of fresh air and seek medical assistance if discomfort persists. The vapours can irritate the respiratory passages.

**Charge the battery only with the original Bosch charger.** If a charger other than the original Bosch charger is used, the risk of a fire cannot be ruled out.

**Use the battery only in conjunction with the original vehicle.** Only this way the battery will be protected against dangerous overloads.

**Use only original Bosch batteries that are approved for your vehicle by the manufacturer.** The use of other batteries can result in injuries and poses the risk of fire.

**Read and observe the safety information and instructions in all operating manuals for the vehicle system as well as the operating manual for the vehicle.**

**Keep the battery away from children.**

**Do not charge a damaged battery and do not use it.** Contact the vehicle manufacturer or vehicle dealer.

## ➤ Maintenance rules

Use original RIEJU spare parts recommended by the Manufacturer. Non-original or non-conforming spares may damage the vehicle.

Use only the appropriate tools designed for this vehicle.

After refitting, make sure that all the components have been installed correctly and work properly.

Use only equipment with metric sizes for removal, service and reassembly operations. Metric bolts, nuts and screws are not interchangeable with coupling

# Introduction

members using English measurements. Using unsuitable coupling members and tools may damage the vehicle.

When carrying out maintenance operations on the vehicle that involve the electrical system, make sure the electrical connections have been made properly, particularly the ground and battery connections



**Before do a maintenance o reparation operation you MUST WAIT 1 minute after switch of the key. This is a time that the VCU needs to save all registers after save this registers the power is switch off and you can proceed without any risk**

## ➤ Components

The scalable powertrain system consists of five components with the following characteristics:

### ○ Battery:

The specially developed lithium-ion battery offers not only high energy density, but also high safety. Thanks to modularity, several battery packs can be operated in parallel.

- Lithium-ion battery
- High energy density and long service life
- Robust, powerful (2.4 kWh, 48 V) and safe
- Modular construction allows expansion of capacity and range



BATTERY	FEATURES
Size	364 mm × 260 mm × 100 mm
Weight	15 kg
Weight Energy content	2.4 kWh per battery pack
Nominal voltage	48 V
Nominal capacity	50 Ah per battery pack
Operating temperature	-8 ... +58 °C (internal cell temperature) -8 ... +40 °C (ambient)
Charging temperature	+5 ... +44 °C (internal cell temperature)
Installation type	Aluminium case, IP65 protection, passive cooling

# Introduction

## ○ Controller:

The control unit is the brains of the powertrain system. It converts the driver's request into intelligent commands for the system components and in this way ensures the perfect response at all times.

- Powerful Bosch control unit
- Compact housing
- Easy integration of vehicle safety systems such as ABS and ESP® (optional, additional Hardware required)



CONTROLLER	FEATURES
Size	142 mm × 123 mm × 43 mm
Voltage	12 V
I/Os	6 analogue input, 8 external switches, 4 CAN interfaces
Communication protocol	CAN bus
Diagnosis	Analysis of system status via diagnosis app or tester interface
Connectivity	Connectivity box can be integrated via CAN

## ○ Display:

The high-quality display can be integrated into every vehicle quickly and easily. All system information is displayed clearly. You can select from four different driving modes: Go, Cruise, Boost, Crawl.

- Intuitive 4.4" liquid crystal display with LED status lights
- The ability to select the driving mode: Go, Cruise, Boost, Crawl
- Display of battery status & range.



DISPLAY	FEATURES
Size	166 mm × 127 mm × 36 mm, 4.4 " LCD
Driving modes	Go, Cruise, Boost, Crawl
Base information	Speed, remaining range, total kilometers, time, temperature, date
Driving data	Trip distance, trip time, average speed, average energy consumption
Battery information	Battery level indicator (segment and %)
Status LED	Lights, turn signal, system alerts, charging status
Connectivity	Bluetooth low energy
Information app	Format of date and time, unit of total/trip distance, trip time, average trip speed / consumption, synchronization with uDrive Connect app
Language versions	DE, EN, IT, FR, ES, NL

# Introduction

## ○ Drive unit:

The powerful 48 V drive converts the energy of the battery into maximum traction and recharges the battery when braking. This creates maximum driving pleasure.

- Powerful 48 V Bosch drive (10.5 kW)
- Light (9 kg), compact and air-cooled
- Integrated inverter



DRIVE UNIT	FEATURES
Size	169 mm × 148 mm
Weight	9 kg
Continuous performance	7.5 kW
Max. performance	10.5 kW
Max. recuperation	7 kW
Max. torque	55 Nm
Max. rotational speed	12,000 rpm

## ○ Charger:

The compact, actively cooled charger ensures fast charging when connected to common 230 V domestic power sockets. You can select from two different charging modes: Standard and Quick.

- High charging power (1.2 kW) and integrated air cooling
- Compact design and two charging modes
- Charging possible from every 230 V domestic power socket



CHARGER	FEATURES
Size	300 mm × 180 mm × 80 mm
Weight	3.5 kg
Power rating	33 A
Voltage Input	230 V AC, Output: 48 V DC
Charging current (one battery)	Quick 20 A, Standard 10 A
Charging times (standard mode)	50 % in ca. 2 h (one/two batteries) 100 % in ca. 4.5 h (one/two batteries)
Charging times (quick mode)	50 % in ca. 1 h (one battery) 50 % in ca. 1.8 h (two batteries)
Installation type	Built in or as home charger incl. status LED, carrying handle and cable management
Protection class	IP66

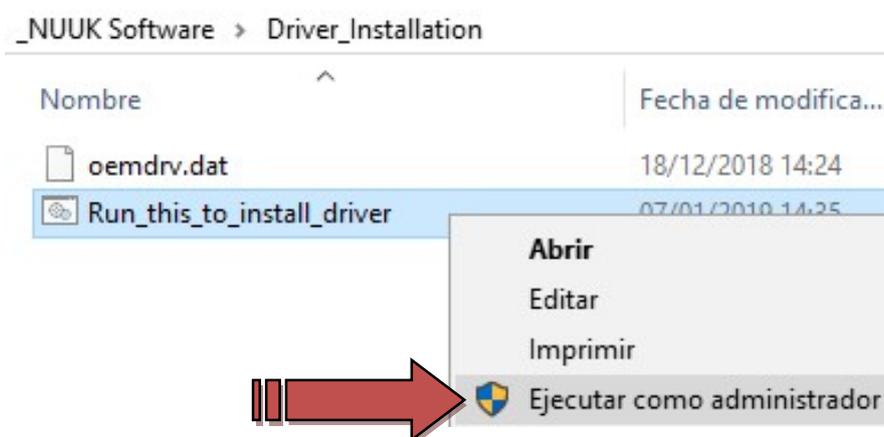
# Diagnosis Software

# Diagnosis Software

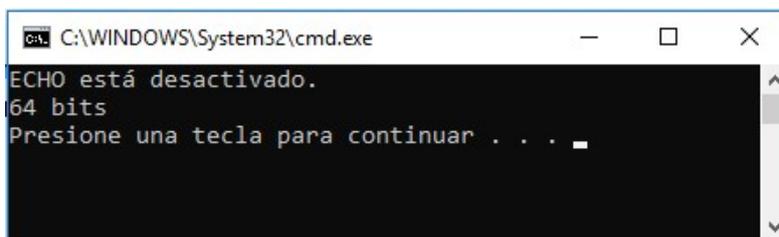
## ➤ Software Installation Process

To ensure a trouble-free installation, please refer to following description of installation process:

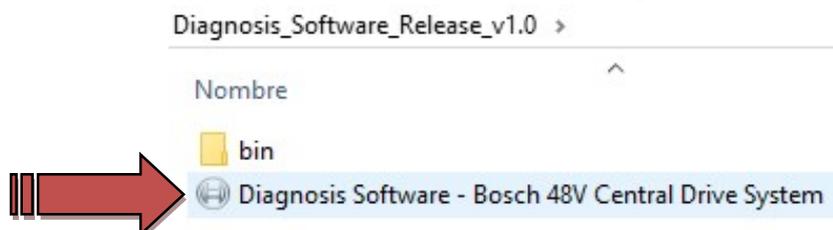
1. Search and open directory “Driver\_Installation”.
2. Install the device driver by run as administrator “Run\_this\_to\_install\_driver.bat” (this will fail if the directory path contains whitespaces).



3. The target system is automatically detected and the correct drivers will be installed. Upon successful completion, press any key.



4. To start the application, double-click the “Diagnosis Software” launcher.

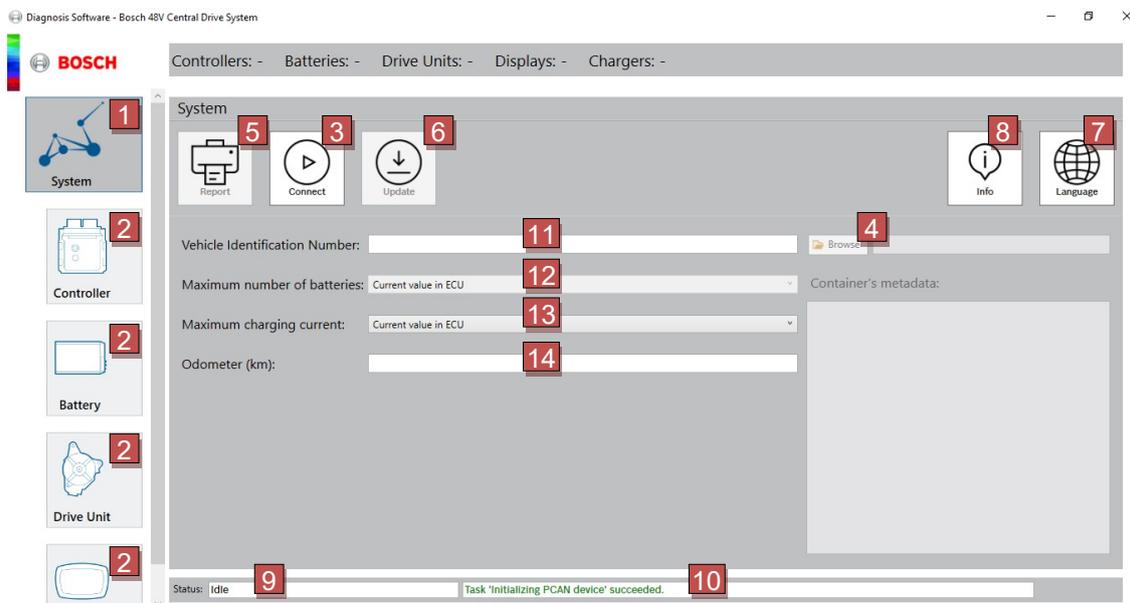


Notice: In case of failure, please contact your support partner.

# Diagnosis Software

## ➤ Software appearance and description

The application is tabbed into a “system” tab [1] and four “component” [2] tabs. Via the connect and disconnect button [3] a connection to a Bosch 48V central drive system can be established and terminated.



The “system view” [1] contains general information about the connected system, allows editing of configuration values [11-14] and selection of system firmware update containers [4]. Additionally the user is able by pressing the report button [5] to generate a diagnostic report for the connected system. To trigger a configuration/firmware update [6] and setting the application language [7] (currently English only) the user may press the corresponding buttons. Clicking on the “Info” button [8] will open up a window with information about application version and support contacts. The status bar [9] informs the user about running action status. Errors of failed actions will be indicated in red in the status result area on the applications bottom [10].

The current vehicle identification number (VIN) will be shown [11].

The “Maximum number of batteries” setting [12] is editable in OEM mode only.

The “Maximum charging current” setting [13] can be changed in order to comply with regional limitations in order not to overheat AC outlets.

The “Odometer” field [14] shows the total distance of the connected drive system. Resetting or reducing the value will be refused by the target ECUs.

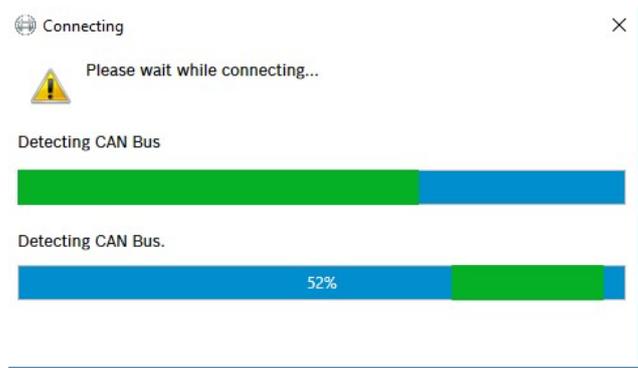
# Diagnosis Software

## ➤ Connect the Bosch diagnostics tool

Diagnostics cable is placed on the front of the bike to access it you must disassemble the front cover on the bike.



1. Take out the front cover (as show on the picture bellow).
2. Unplug connector protection.
3. Turn on ignition key.
4. Connect Bosch diagnosis tool to the bike and with the computer (use harness supplement send by Bosch diagnostic tool)



# Diagnosis Software

## ➤ Software don't connect

- Error: CAN fail

When the CAN fails appear the following Error on the diagnosis software

Task 'Initializing PCAN device' failed: 'Failed to certify selected PCAN device.'

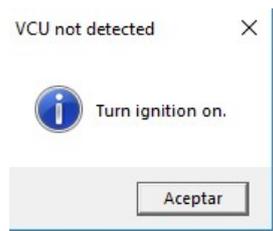
Root causes:

- Divers don't install → Install drivers according “**Software Installation Process**” instructions.
- Software don't connect with Controller → Check correct assembly of cable supplement and status of it (all pins are OK).
- Bosch tool is not connected or don't works correctly. → Check that the led tool has green colour and when we “click” on Connect button the led flashing and change between colour green and red.



Notice: In case of don't solve the issue, please contact your support partner.

- Error: VCU no detected



Turn ignition on and check that the emergency switch of the bike is in on position



Notice: In case of don't solve the issue, please contact your support partner.

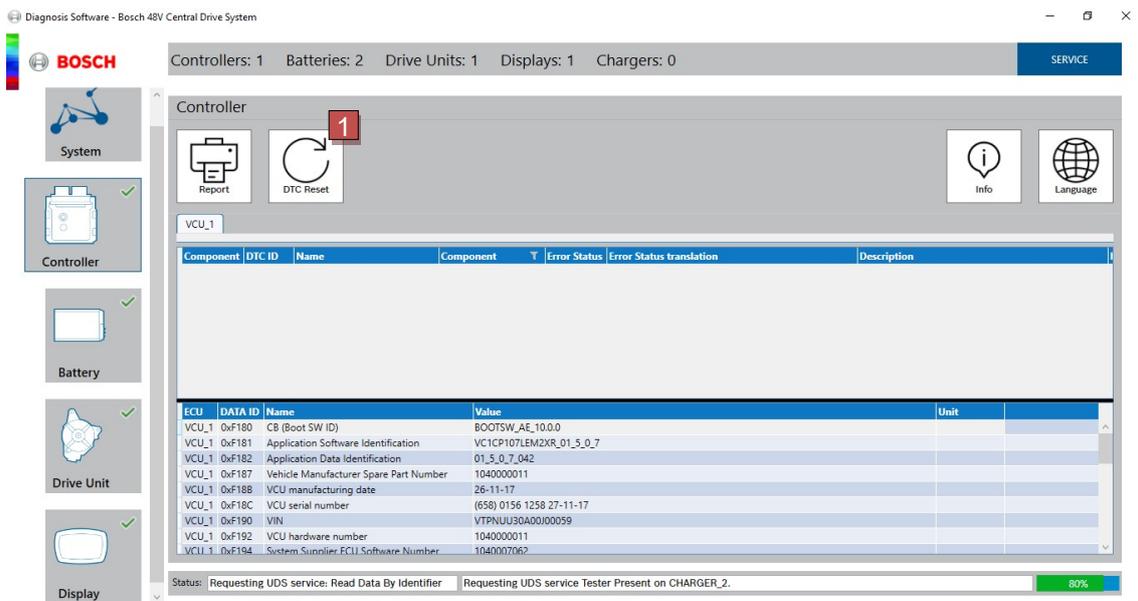
# Diagnosis Software

## ➤ Components information

Once the software is connected to the VCU the software will show the components connect on the system, if one or more components don't are connected means a CAN issue, on this step the software don't has the full information of these components.



To have the full information of the different components (status of components, errors, etc.) is necessary click on each tab of each component. If one tab is not clicked we will not obtain the information of this component.



On each tab we found DTC Reset button when we push this button we erase the historic errors of the component selected, this operation is necessary do on each component with errors.

If we can't erase the error means that it continues active on the bike and is necessary repair it on the bike.

# Troubleshooting

# Troubleshooting

## ➤ Motorbike don't turn ON

**Fail:** We turn the key but the dashboard doesn't turn ON, always is black. Battery doesn't charge.

Connect diagnosis software to the bike.

- Any ERROR is show on the software. → Check switch-on-relay
- Diagnosis software can't connect with the VCU → Check fuse of 15A and check 12V battery.

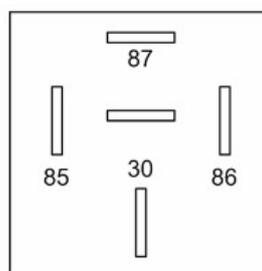
Check switch-on-relay:

If the relay is NOK when we turn the key to ON position front lights will ON.

To access to the switch on relay, remove the upper plastic cover removing 5 screws.



Take out the relay and apply a voltage of 12V to pins 86 and 85; make sure that there is continuity between pins 30 and 87.



If the relay is not working, replace it.

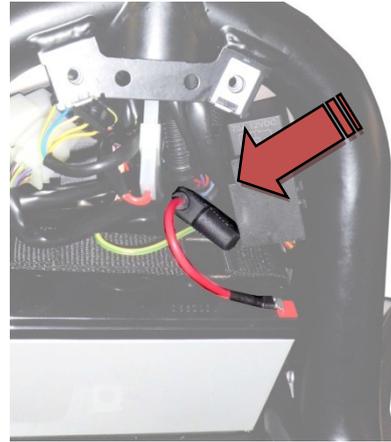
If the relay is working, check harness continuity, check fuse of 15A and check 12V battery.

# Troubleshooting

## Checks fuse 15A:

If the fuse is NOK when we turn the key to ON position front lights will OFF.

To access the fuse of 15A, remove the upper plastic cover removing 5 screws.



If the fuse of 15A is not ok, replace it.

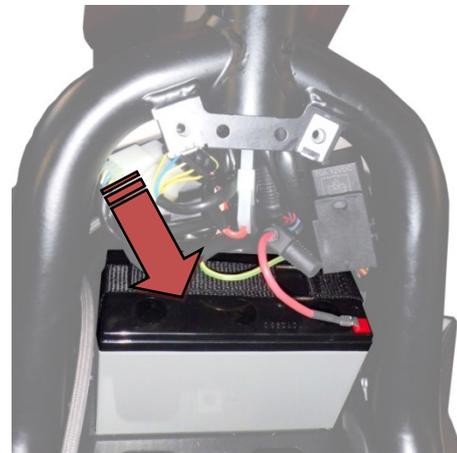
**Attention:** the fuse to use is 15A 32V

## Check 12V battery:

On function of the voltage level of the 12V battery the lights can be ON when we turn the key to ON position.

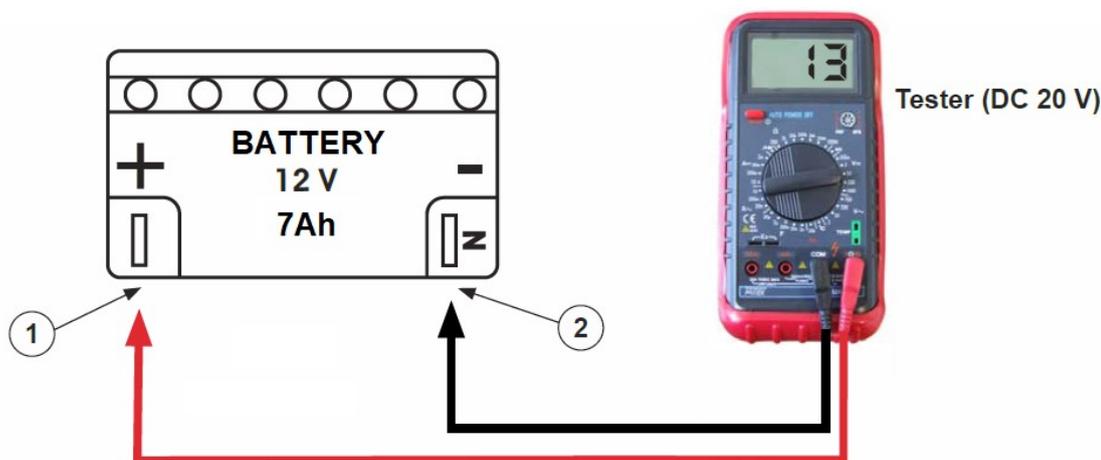
The motorcycle will work normally again once the 12V battery voltage is restored to normal operating level (10V – 13V).

To access to the fuse of 15A, remove the upper plastic cover removing 5 screws.



# Troubleshooting

1. Unplug the battery from the harness.
2. Measure voltage of the battery with one multimeter.



If the voltage is down of 10V replace the battery.

3. Connect Bosch diagnose software, if the battery has work between 7 to 9 V, supply default defect will appear. Make a DTC Reset on the controller.

Diagnosis Software - Bosch 48V Central Drive System

Controllers: 1 Batteries: 2 Drive Units: 1 Displays: 1 Chargers: 0 SERVICE

Controller

Report DTC Reset

VCU\_1 (1 DTCs)

Component	DTC ID	Name	Component	Error Status	Error Status translation	Description	Repair
VCU_1	0x250C00	DFC_BattUnderUErr	12V Battery	0xAC	Failed during current or previous operation cycle; Defect confirmed; Failed since last reset; MIL on request	Supply voltage fault. Deleted when fault becomes inactive.  Failed during current or previous operation cycle; Defect confirmed; Failed since last reset; MIL on request;	1. Che 2. Che 3. Che 4. Clea 5. If fa 6. Clea 7. If fa

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	CB (Boot SW ID)	BOOTSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	1040000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN	1040000011	
VCU_1	0xF192	VCU hardware number	1040000011	
VCU_1	0xF194	System Supplier: ECU Software Number	1040007062	

Status: Idle Task 'Requesting UDS service: Read Data By Identifier' succeeded.

**Check :** With the battery assembled on the bike turn on the key and measure the voltage level, battery will show 13,8V, if the battery don't has this voltage the system don't charge correctly the 12V battery.

# Troubleshooting

**Fail:** We turn the key but the dashboard doesn't turn ON, always is black. Battery charge.

Connect diagnosis software to the bike. If **display is not connected** check CAN drive unit, check DC/DC 48V connector.

The screenshot shows the Bosch Diagnosis Software interface for a Bosch 48V Central Drive System. The top status bar indicates: Controllers: 1, Batteries: 2, Drive Units: 1, Displays: 0 (circled in red), Chargers: 0. The 'Controller' section shows a table of DTCs for VCU\_1 (4 DTCs):

Component	DTC ID	Name	Component T	Error Status	Error Status translation	Description	Repair Act
VCU_1	0x280500	DFC_ChgrLampOL	HMI_harness	0x2F	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Defect confirmed; Failed since last reset;	Wiring harness fault btw: HMI and VCU, Deleted when fault becomes inactive, Symptoms: MIL on	1. Check w 2. Clear fa
VCU_1	0x234C00	DFC_CasECURes	CAN	0xAF	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Defect confirmed;	Unknown / untrusted component identified, Deleted when fault becomes inactive, Symptoms: reduced torque or no charge, MIL on	1. Shut do 2. Check c 3. Restar

Below the DTC table is a table of ECU data:

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	CB (Boot SW ID)	BOOTSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	1040000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	1040000011	
VCU_1	0xF194	System Supplier ECU Software Number	1040007062	

The 'Drive Unit' icon in the left sidebar is also circled in red. The status bar at the bottom shows: Status: Requesting UDS service: Read Data By Identifier | Requesting UDS service: Read Data By Identifier 0xF198 on VCU\_1. | 19%

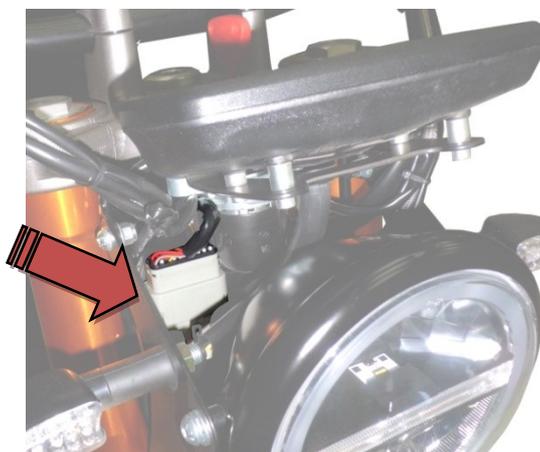
Controller shows the following errors:

**0x2F** : (CAN) Communication fault btw. VCU and HMI, Deleted after T15 reset if fault is inactive,

**0xAF** : Unknown / untrusted component identified, Deleted when fault becomes inactive,

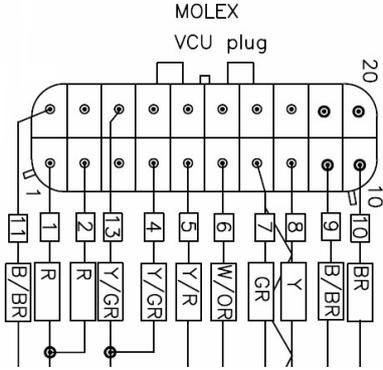
Checks big dashboard connector:

Dashboard connectors are placed rear of the front light, on the lower fork plate.



# Troubleshooting

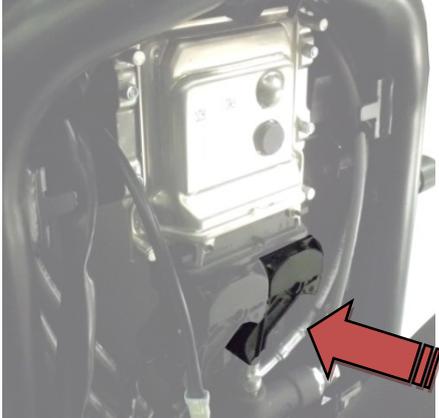
1. Check that the connector is correctly plugged.
2. Check the continuity of the wires.



**Fail:** We turn the key but the dashboard doesn't turn ON, always is black. Battery don't charge and is impossible connect with the diagnose software.

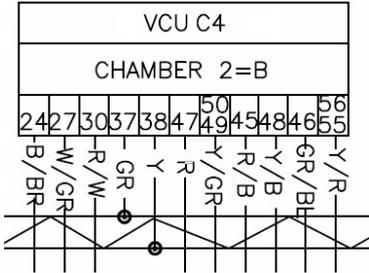
Check VCU C1 connector:

VCU is placed on the top of the bike to access it you will take out the front cover removing 2 screws.



1. Check that the connector is correctly plugged
2. Check the continuity of the wires

2



# Troubleshooting

## ➤ Power batteries don't charge

**Fail:** Motorbike run correct, any error appears on the dashboard but the power batteries don't charge.

Dashboard light (🔋) flashes like as bike are on charge if we connect the diagnosis software any error is present.

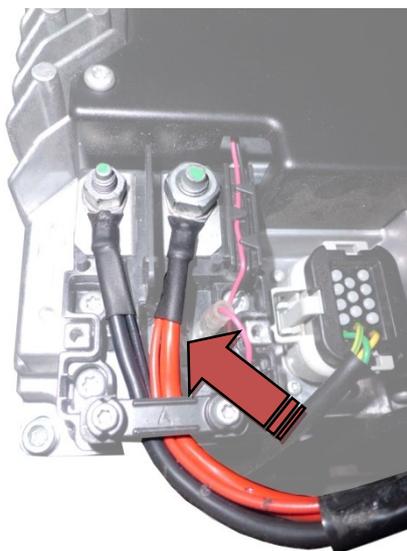
### Check charger power connexions:

This fail is present with the wire black or red is not connected on the charger

To access to the charger, remove the upper plastic cover removing 5 screws. On the charger remove the 2 screws of the charger protection.



Check that the cables are correct connected to the screw (cables connector has poka-yoke connexion, it will impossible assembly in opposite way).



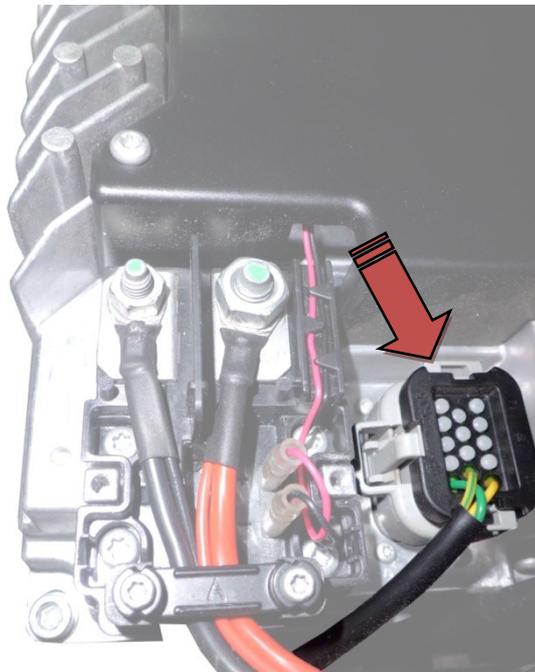
# Troubleshooting

## Check charger CAN connexions:

CAN communication wires are colour coded as green and yellow and twisted together.

To check that CAN communication check the electrical continuity of the CAN wires. Remove the connectors on all affected components and check electrical continuity between the green wire pin in the Display and in the rest of the components, and proceed the same way with the yellow wire pins. Make the readings on the motorcycle side of the connectors. If there is electrical conductivity between the same colour cable pins, CAN communication should be ensured.

Check can connector and assure that they are correctly plugged on the charger.



Notice: In case of don't solve the issue, please contact your support partner.

Dashboard light (🟢) don't flash, dashboard is black, diagnosis software any error is present, when we turn the key to ON position on the dashboard appear the following message:

Charging not possible. Set your vehicle up on a safe parking position.

# Troubleshooting

## Check side stand:

Check that the bike is with the side stand. If the bike is with the central stand the charge of the bike it will not activated if you want charge with the central stand you will need open also the side stand to start the charge.

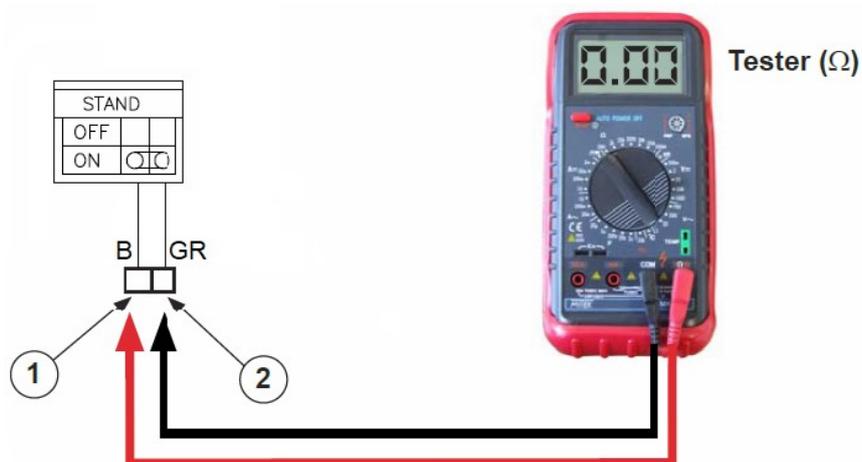
If the side stand is open but the charges don't start you must check the side stand switch.

## Check side stand switch:

Connector of side stand switch is placed up of the electrical motor. Remove the right motor cover removing 5 screws.



1. Unplug side stand switch.
2. Connect the multimeter on the wires black (1) and green (2) of the stand switch.
3. With the multimeter on  $\Omega$  position measure the resistance of the switch.
4. With the side stand on run position the resistance will open circuit.
5. With the side stand on rest position the resistance will  $0\Omega$



If resistance values are NOK replace the side stand switch.

# Troubleshooting

**Fail:** Motorbike run correct for a time but battery of 12V is discharging, ERROR appears on the dashboard and the power batteries don't charge.

1. Check battery voltage when we turn the key to ON position voltage of the battery don't change to charging voltage level (around 13,7V)
2. Connect diagnosis software to the bike. If **Error 0xAF** appears, check fuse 40A 58V.

Diagnosis Software - Bosch 48V Central Drive System

Controllers: 1 Batteries: 2 Drive Units: 1 Displays: 1 Chargers: 0

Controller

VCU\_1 (1 DTCs)

Component	DTC ID	Name	Component T	Error Status	Error Status translation	Description	Rep
VCU_1	0x250300	Unknown DTC Code		0xAF	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Defect confirmed; Failed since last reset; MIL on request;		

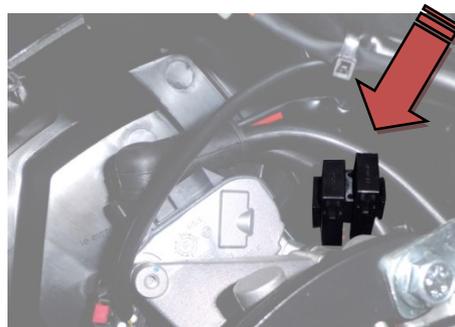
  

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	C8 (Boot SW ID)	BC0T5W_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	1040000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	1040000011	
VCU_1	0xF194	System Supplier ECU Software Number	1040007062	

Status: Requesting UDS service: Read Data By Identifier Requesting UDS service: Read Data By Identifier 0xFD18 on VCU\_1. 54%

Check fuse 40A 58V:

Fuse is placed up of the electrical motor. Remove the motor cover, both sides, removing 7 screws.



**⚠ WARNING:** You must use one fuse 40A/58V.

(Rieju part number: 0/000.910.3503)



If fuse is NOK replace it.

# Troubleshooting

**Fail:** Motorbike runs correct, any error appears on the dashboard but km range is too small and bike doesn't have full power.

One of the 2 batteries (on the models with 2 batteries) is not connected or fail.

Connect diagnosis software to the bike.

If on the diagnose software only appears one battery check:

1. 2 batteries are correct plugged.
2. CAN of batteries.

Diagnosis Software - Bosch 48V Central Drive System

**BOSCH** Controllers: 1 Batteries: 1 Drive Units: 1 Displays: 1 Chargers: 0 SERVICE

Controller

Report DTC Reset Info Language

VCU\_1 (1 DTCs)

Component	DTC ID	Name	Component	Error Status	Error Status translation	Description	Repair Act
VCU_1	0x281D00	DFC_BmsECUN/HV/VoltBattLo	48V battery	0x27	Defect detected at this time: Failed during current operation cycle: Failed during current or previous operation cycle: Failed since last reset.	Not enough 48V batteries connected. Deleted after T15 reset if fault is inactive. Symptoms: reduced torque or no charge, MIL on	1. Make su 2. Check C 3. Clear fau 4. If fault s 5. Restart s

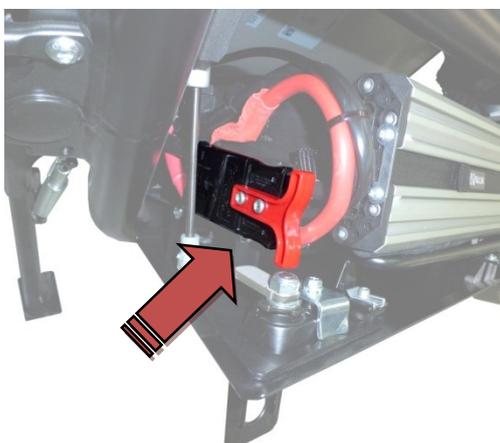
  

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	CB (Boot SW ID)	BOOTSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	1040000011	VC1CP107LEM2XR_01_5_0_7
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	1040000011	
VCU_1	0xF194	System Supplier ECU Software Number	1040007062	

Status: Idle Task [Periodic] Requesting UDS service: Read DTC succeeded.

Check batteries are correct plugged:

Check that the batteries are correctly plugged (connector to the end) and the correct status of the connector (any pin has defective).



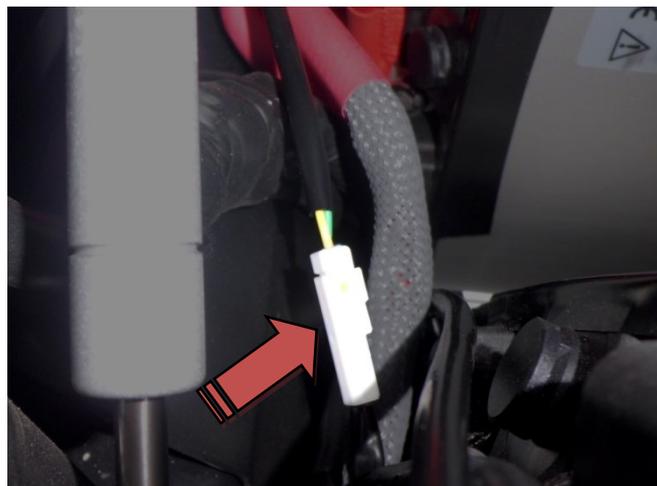
# Troubleshooting

## Check CAN connector of batteries:

CAN communication wires are colour coded as green and yellow and twisted together.

To check that CAN communication check the electrical continuity of the CAN wires. Remove the connectors on all affected components and check electrical continuity between the green wire pin in the Display and in the rest of the components, and proceed the same way with the yellow wire pins. Make the readings on the motorcycle side of the connectors. If there is electrical conductivity between the same colour cable pins, CAN communication should be ensured.

Check can connector and assure that they are correctly plugged and connector leg is not broken



2 CAN connectors (one for each battery) are placed rear of the batteries.

**Note:** if diagnose show errors make a Make a DTC Reset on the controller and/or batteries.



# Troubleshooting

## ➤ Motorbike don't run

**Fail:** We turn the key the dashboard is ON, but the motorbike doesn't run. Dashboard error light is ON. If we put the bike to charge, charge led flashes but really the system doesn't charge.

Connect diagnosis software to the bike. If **Error 0xAF** appears and any component is affected, check fuse 7,5A 58V.

Diagnosis Software - Bosch 48V Central Drive System

Controllers: 1 Batteries: 2 Drive Units: 1 Displays: 1 Chargers: 0

Controller: VCU\_1 (1 DTCs)

Component	DTC ID	Name	Component T	Error Status	Error Status translation	Description	Res
VCU_1	0x250300	Unknown DTC Code		0xAF	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Defect confirmed; Failed since last reset; MIL on request;		

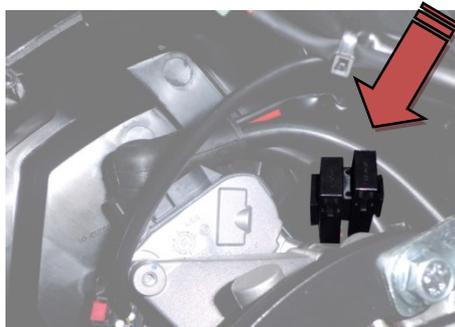
  

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	CB (Boot SW ID)	BOOTSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	104000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	104000011	
VCU_1	0xF194	System Supplier ECU Software Number	1040007062	

Status: Requesting UDS service: Read Data By Identifier Requesting UDS service Tester Present on CHARGER\_2 80%

Check 40A 58V:

Fuse is placed up of the electrical motor. Remove the motor cover, both sides, removing 7 screws.



**WARNING:** You must use one fuse 7,5A/58V.

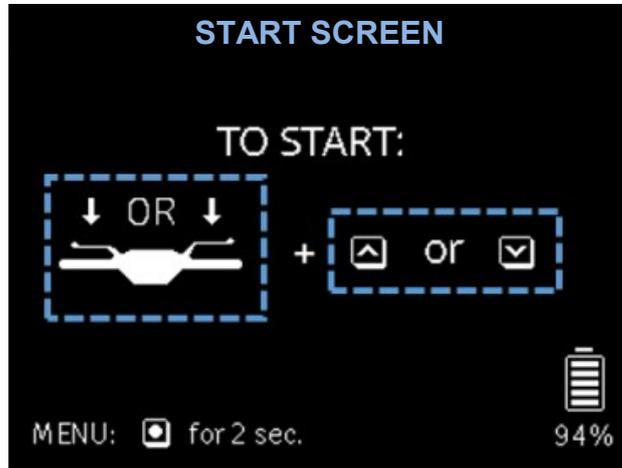
(Rieju part number: 0/000.910.3502)

**Foto fusible**

If fuse is NOK replace it.

# Troubleshooting

**Fail:** We turn the key the dashboard is ON, but we can pass of the START screen. Dashboard error light is ON. Motorbike doesn't charge.



Connect diagnosis software to the bike. If **drive unit is not connected** check CAN drive unit, check DC/DC 48V connector.

A screenshot of the Bosch 48V Central Drive System diagnosis software interface. The top status bar shows "Controllers: 1 Batteries: 2 Drive Units: 0 Displays: 1 Chargers: 0". The "Drive Units: 0" is circled in red. The left sidebar has icons for System, Controller, Battery, Drive Unit (circled in red), and Display. The main area shows a table of error codes for VCU\_1 (4 DTCs).

Component	DTC ID	Name	Component T	Error Status	Error Status translation	Description	Repair Act
VCU_1	0x232F00	DFC_Edrv_Reg_RE_TO	CAN	0x27	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Failed since last reset;	(CAN) Communication fault btw. VCU and EM, Deleted after T15 reset if fault is inactive, Symptoms: MIL on	1. Check Cf 2. Clear fau
VCU_1	0x232D00	DFC_Edrv_Pred_RE_TO	CAN	0xAF	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Defect confirmed; Failed since last reset;	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Failed since last reset;	1. Check Cf 2. Clear fau

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	CB (Boot SW ID)	BOOTSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	104000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	104000011	
VCU_1	0xF194	System Supplier ECU Software Number	1040007062	

Controller shows the following errors:

**0x27** : (CAN) Communication fault btw. VCU and EM, Deleted after T15 reset if fault is inactive,

**0xAF** : (CAN) Communication fault btw. VCU and EM, Deleted after T15 reset if fault is inactive,

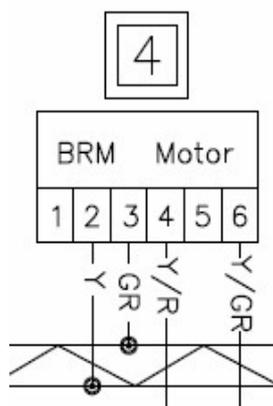
# Troubleshooting

## Check CAN drive unit:

CAN drive unit is placed on the electrical motor. Remove the motor cover, both sides, removing 7 screws.



1. Check that the connector is correctly plugged
2. Check the continuity of the wires



## Check DC/DC 48V connector:

DC/DC is placed up to the rear fender, to access it:

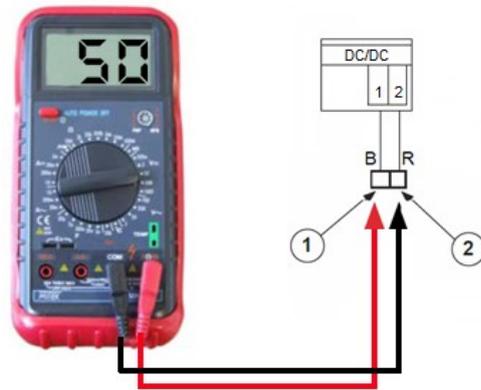
- 1) Remove the motor cover, both sides, removing 7 screws.
- 2) Remove the metal rear support fender, removing 6 screws.
- 3) Remove rear plastic fender, removing 6 screws.



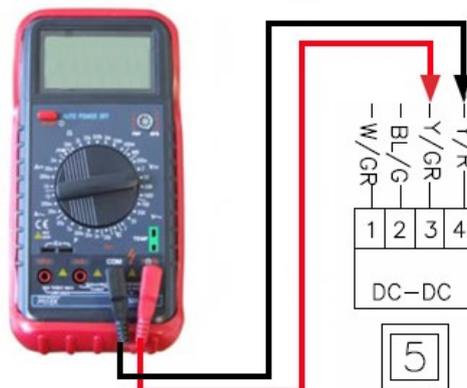
# Troubleshooting



1. Check connector 2 wires (cables black / red) is connected



2. Connect the multimeter on the wires black (1) and red (2) of the DC/DC converter.
3. With the multimeter on 200 DC V position measure the voltage.
4. Multimeter will shows 50V, if voltage is NOK check wires continuity
5. Check connector 4 wires (cables black / red / Green / Yellow) is connected



6. With the multimeter on 20 DC V position measure the voltage.
7. Multimeter will shows 13,5V between cables Red / Black of DC/DC.
8. Multimeter will shows 9,75V between cables green / yellow.

# Troubleshooting

9. If voltages are NOK contact your support partner.

If on the diagnosis software **Errors** appears on controller and battery check power wires of driver unit.

The screenshot shows the Bosch Diagnosis Software interface for a Bosch 48V Central Drive System. The main window displays two error codes:

Component	DTC ID	Name	Component	Error Status	Error Status translation	Description	Rep
VCU_1	0x260200	DFC_CoPOMSM/SecStae	VCU	0x27	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Failed since last reset;	Diagnostics information fault. Deleted after T15 reset if fault is inactive. Symptoms: reduced torque or no charge, no torque, MIL on	1. C 2. R
VCU_1	0x261900	DFC_EITSSHOF#	48V battery	0xAF	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Defect confirmed; Failed since last reset;	48V battery fault. Deleted after T15 reset if fault is inactive. Symptoms: reduced torque or no charge, no torque, MIL on	1. R 2. S 3. C 4. C 5. If

Below the error codes, there is a table for VCU data:

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	C8 (Boot SW ID)	BO0TSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	1040000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	1040000011	
VCU_1	0xF194	System Supplier ECU Software Number	1040007062	

System shows the following errors:

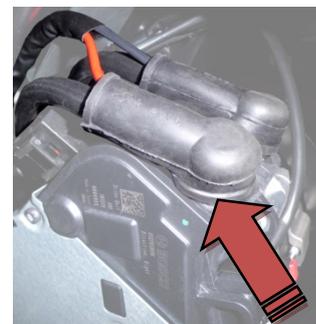
**0x27** : Diagnostics information fault, Deleted after T15 reset if fault is inactive,

**0xAF** : 48V battery fault, Deleted after T15 reset if fault is inactive,

**0x2F** : Precharge fault, Deleted after T15 reset if fault is inactive,

Check power wires of driver unit:

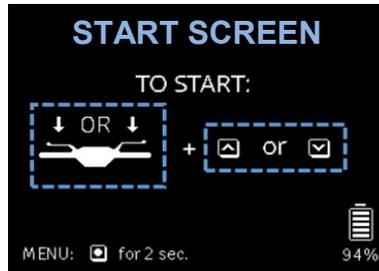
Power wires are placed up of the electrical motor. Remove the motor cover, both sides, removing 7 screws.



Checks that the wires don't are placed in opposite way.

# Troubleshooting

**Fail:** We turn the key the dashboard is ON, but we can pass of the START screen. Dashboard error light is OFF. Motorbike doesn't charge.



Connect diagnosis software to the bike. If **Drive Unit is, Battery and Display are not connected** check positive cables of the drive unit.

Diagnosis Software - Bosch 48V Central Drive System

Controllers: 0 Batteries: 0 Drive Units: 0 Displays: 0 Chargers: 0

Controller

Component	DTC ID	Name	Component	Error Status	Error Status translation	Description	Repair Action
VCU_1	0x260200	DFC_CoPOMSHMSecStae	VCU	0x27	Defect detected at this time; Failed during current operation cycle; Failed during current or previous operation cycle; Failed since last reset;	Diagnostics information fault, Deleted after T15 reset if fault is inactive, Symptoms: reduced torque or no charge, no torque, MIL on	1. Clear fault 2. Restart sys

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	CB (Boot SW ID)	BOOTSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	D1_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	1040000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	1040000011	
VCU_1	0xF194	System Supplier ECU Software Number	1040007062	

Status: Idle Task 'Requesting UDS service: Read Data By Identifier' succeeded.

Check power wires of driver unit:

Power wires are placed up of the electrical motor. Remove the motor cover, both sides, removing 7 screws.



Checks that the red wires are correctly connected to the engine, check wires continuity.

# Troubleshooting

**Fail:** We turn the key the dashboard is ON, but dashboard error light is ON and motorbike doesn't run. Motorbike doesn't charge.

Connect diagnosis software to the bike. If **Drive Unit is not connected** check earth cables of the drive unit.

The screenshot shows the Bosch Diagnostic Software interface for a Bosch 48V Central Drive System. The top status bar indicates: Controllers: 1, Batteries: 2, Drive Units: 0 (circled in red), Displays: 1, Chargers: 0. The 'Drive Unit' icon in the left sidebar is also circled in red. The main window displays a table of error codes for the VCU (4 DTCs):

Component	DTC ID	Name	Component T	Error Status	Error Status translation	Description	Repair Act
VCU_1	0x232F00	DFC_Edrv_Req_RE_TO	CAN	0x27	Defect detected at this time: Failed during current operation cycle; Failed during current or previous operation cycle; Failed since last reset;	(CAN) Communication fault btw. VCU and EM, Deleted after T15 reset if fault is inactive, Symptoms: MIL on	1. Check C2 2. Clear fau
VCU_1	0x232D00	DFC_Edrv_Pred_RE_TO	CAN	0xAF	Defect detected at this time: Failed during current operation cycle; Failed during current or previous operation cycle; Defect confirmed: Failed since last reset;	Defect detected at this time: Failed during current operation cycle; Failed during current or previous operation cycle; Failed since last reset;	1. Check C2 2. Clear fau

Below the error codes, there is a table of ECU data:

ECU	DATA ID	Name	Value	Unit
VCU_1	0xF180	CB (Boot SW ID)	BOOTSW_AE_10.0.0	
VCU_1	0xF181	Application Software Identification	VC1CP107LEM2XR_01_5_0_7	
VCU_1	0xF182	Application Data Identification	01_5_0_7_042	
VCU_1	0xF187	Vehicle Manufacturer Spare Part Number	1040000011	
VCU_1	0xF188	VCU manufacturing date	26-11-17	
VCU_1	0xF18C	VCU serial number	(658) 0154 1258 27-11-17	
VCU_1	0xF190	VIN		
VCU_1	0xF192	VCU hardware number	1040000011	
VCU_1	0xF194	System.Sunrise.ECU Software Number	1040000762	

VCU show the following errors:

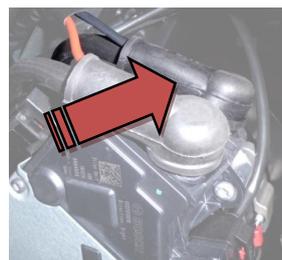
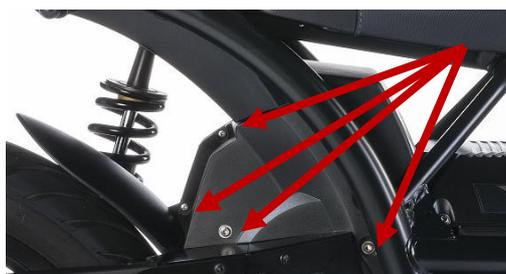
**0x27** : (CAN) Communication fault btw. VCU and EM, Deleted after T15 reset if fault is inactive,

**0xAF** : (CAN) Communication fault btw. VCU and EM, Deleted after T15 reset if fault is inactive,

**0xAE** : (CAN) Communication fault btw. VCU and EM, Deleted after T15 reset if fault is inactive,

Check earth cables of the drive unit:

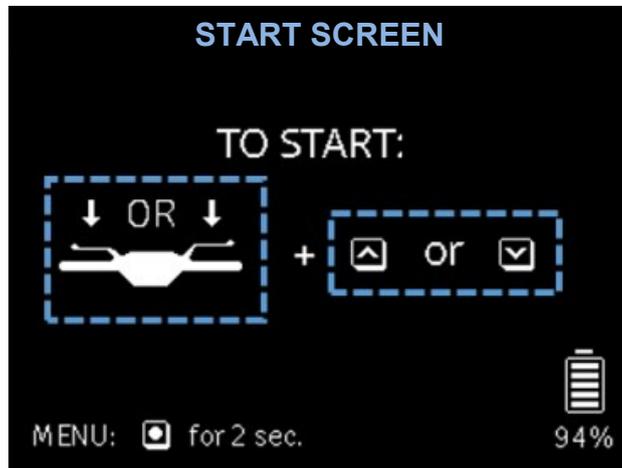
Power wires are placed up of the electrical motor. Remove the motor cover, both sides, removing 7 screws.



Checks that the red wires are correctly connected to the engine, check wires continuity.

# Troubleshooting

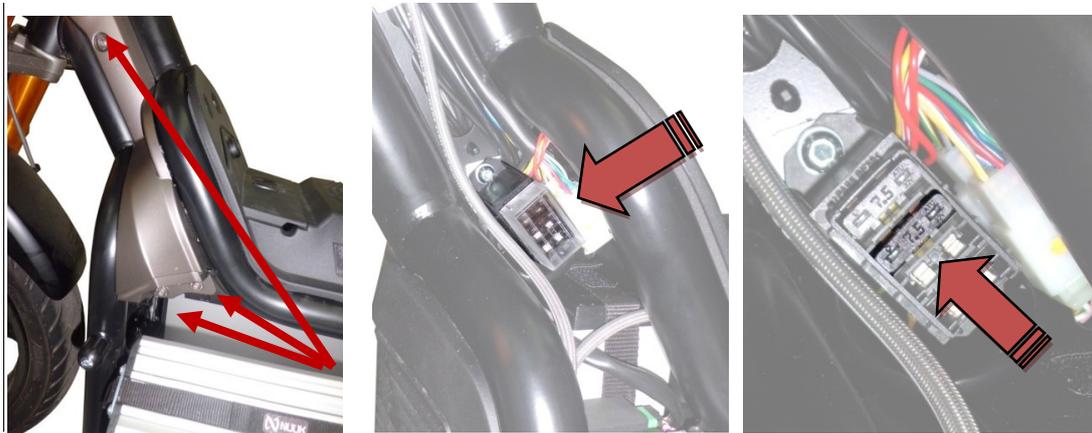
**Fail:** We turn the key the dashboard is ON, but we can't pass the START screen. Dashboard error light is OFF. Motorbike doesn't charge. We can't connect with diagnose software tool.



Checks fuse 7,5A:

If the fuse is NOK when we turn the key to ON position front lights will ON.

To access the fuse of 7,5A, remove the left lateral plastic cover, open the battery holder and removing 3 screws.

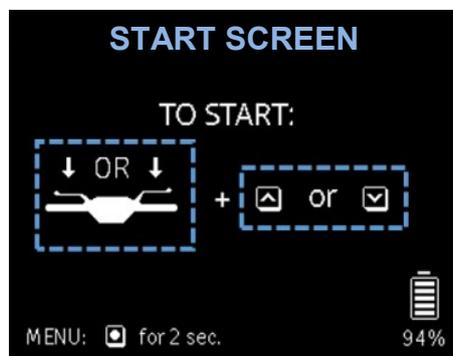


If the fuse of 7,5A is not ok, replace it.

**Attention:** the fuse to use is 7,5A 32V

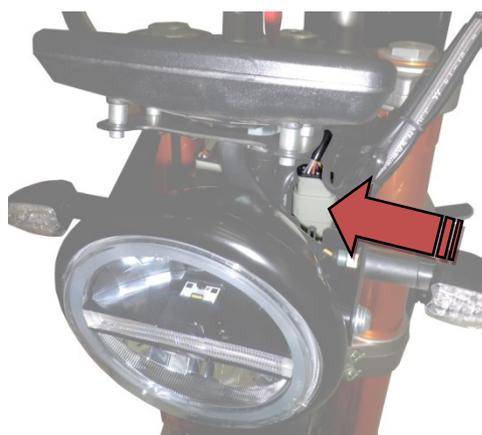
# Troubleshooting

**Fail:** We turn the key the dashboard is ON, but we can pass of the START screen. Dashboard error light is OFF. Motorbike charge. We can connect with diagnose software tool but any Error appears.

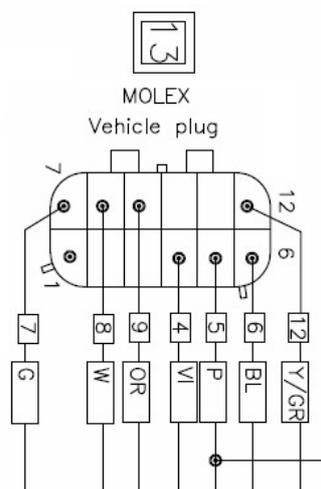


Checks small dashboard connector:

Dashboard connectors are placed rear of the front light, on the lower fork plate.



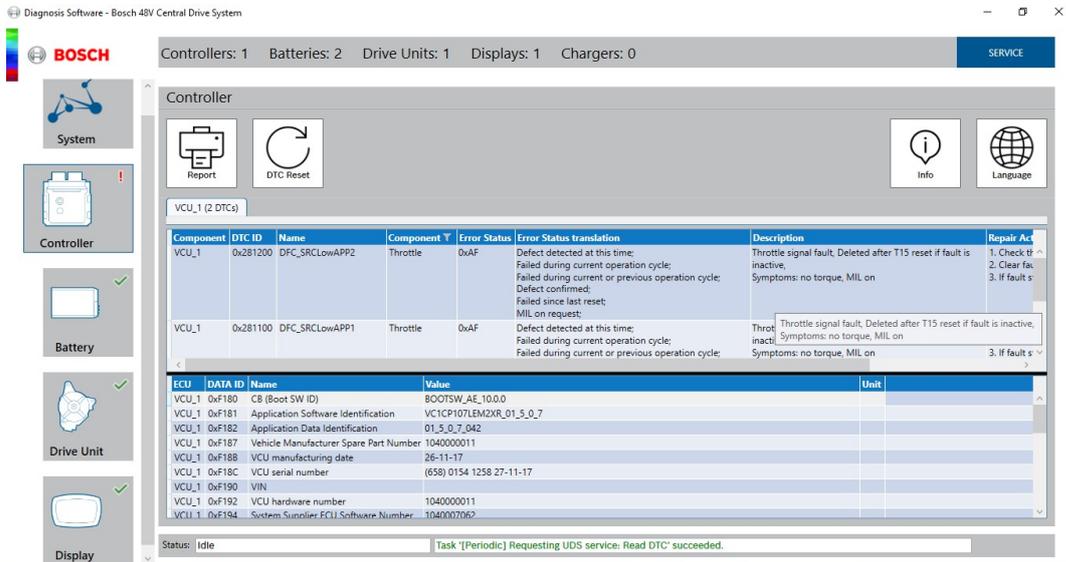
1. Check that the connector is correctly plugged.
2. Check the continuity of the wires.



# Troubleshooting

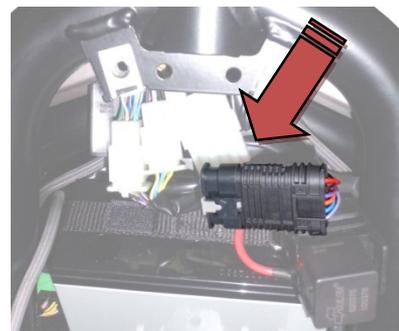
**Fail:** Dashboard error light is ON, motorbike doesn't run. Motorbike charge.

Connect diagnosis software to the bike. If **Error 0xAF** appears and any throttle component is affected, check throttle.

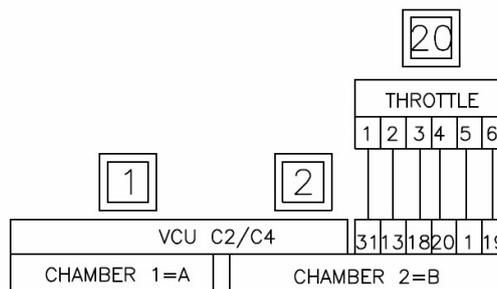


## Throttle check:

To access to the throttle connector, remove the upper plastic cover removing 5 screws.

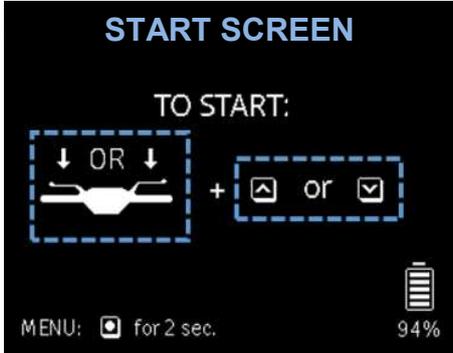


1. Check that the connector is correctly plugged
2. Check the continuity of the wires



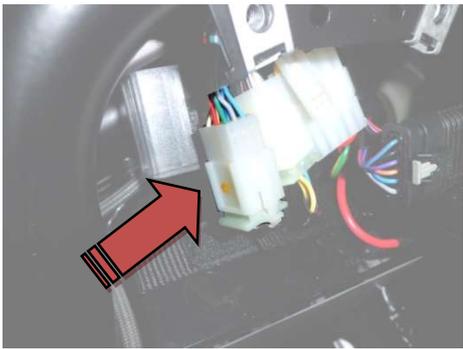
# Troubleshooting

**Fail:** We turn the key the dashboard is ON, but we can pass of the START screen. Dashboard error light is OFF. Motorbike charge. We can connect with diagnose software tool but any Error appears.



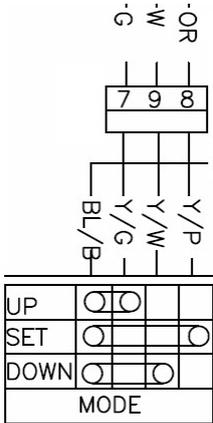
Mode switch check:

To access to the mode switch connector, remove the upper plastic cover removing 5 screws.



1. Check that the connector is correctly plugged.
2. Check mode function.
3. Check the continuity of the wires.

If the connector is unplugged turn lights and horn it will not works.



# Troubleshooting

## ➤ Motorbike run and charge

**Fail:** Any Error on the motorbike function but main lights doesn't works.

Turn lights works correctly.

Checks fuse 7,5A:

To access the fuse of 7,5A, remove the left lateral plastic cover, open the battery holder and removing 3 screws.



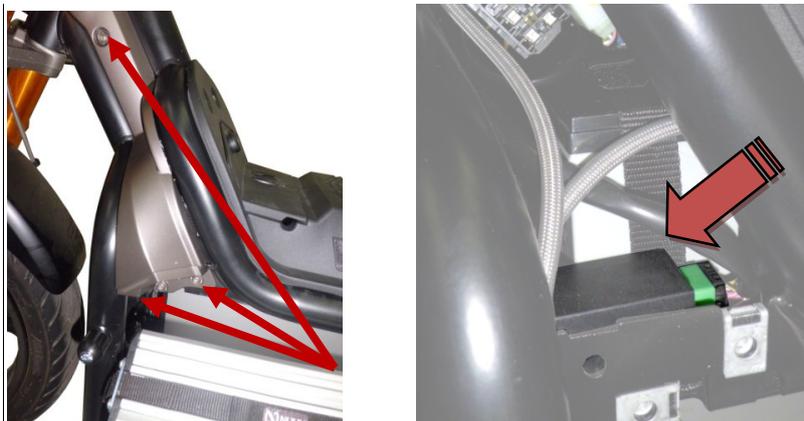
If the fuse of 7,5A is not ok, replace it.

**Attention:** the fuse to use is 7,5A 32V

**Fail:** Any Error on the motorbike function but main turn lights doesn't works.

Checks turn light box:

To access the turn light box, remove the left lateral plastic cover, open the battery holder and removing 3 screws.





Pre-Delivery

# Pre-Delivery

Carry out the listed checks before delivering the motorcycle.

## ➤ Aesthetic inspection

Appearance check:

- Paintwork
- Fitting of Plastic Parts
- Scratches
- Dirt

## ➤ Electrical system

- Main switch
- Lights: high-beam lights, low-beam lights, taillights (front and rear).
- Headlight adjustment according to the regulations currently in force
- Front and rear stop light buttons and relative light
- Turn indicators and relative telltale
- Instrument lighting
- Instrument panel lights
- Horn
- Electrical start u
- Engine stopping with emergency stop switch



### CAUTION

**TO ENSURE MAXIMUM PERFORMANCE, THE BATTERY MUST BE CHARGED BEFORE USE. INADEQUATE CHARGING OF THE BATTERY WITH A LOW LEVEL OF ELECTROLYTE BEFORE IT IS FIRST USED SHORTENS BATTERY LIFE.**



### WARNING

**THE BATTERY ELECTROLYTE IS POISONOUS AS IT MAY CAUSE SERIOUS BURNS. IT CONTAINS SULPHURIC ACID. AVOID CONTACT WITH YOUR EYES, SKIN AND CLOTHING. IF IT ACCIDENTALLY COMES INTO CONTACT WITH YOUR EYES OR SKIN, WASH WITH ABUNDANT WATER FOR APPROX. 15 MIN. AND SEEK IMMEDIATE MEDICAL ATTENTION.**

**IF ACCIDENTALLY SWALLOWED, IMMEDIATELY DRINK LARGE QUANTITIES OF WATER OR VEGETABLE OIL. SEEK IMMEDIATE MEDICAL ATTENTION.**

**BATTERIES PRODUCE EXPLOSIVE GASES; KEEP CLEAR OF NAKED FLAMES, SPARKS OR CIGARETTES. VENTILATE THE AREA WHEN**

# Pre-Delivery

**RECHARGING INDOORS. ALWAYS WEAR EYE PROTECTION WHEN WORKING IN THE PROXIMITY OF BATTERIES.**

**KEEP OUT OF THE REACH OF CHILDREN CAUTION.**

**NEVER USE FUSES WITH A CAPACITY HIGHER THAN THAT RECOMMENDED. USING A FUSE OF UNSUITABLE RATING MAY SERIOUSLY DAMAGE THE VEHICLE OR EVEN CAUSE A FIRE.**

## ➤ **Levels check**

Level check:

- Hydraulic brake system liquid level.

## ➤ **Road test**

Test ride:

- Cold start.
- Instrument panel operation.
- Response to throttle control.
- Stability when accelerating and braking.
- Front and rear brake efficiency.
- Front and rear suspension efficiency.
- Abnormal noise.

## ➤ **Static test**

Static control after the test ride:

- Minimum seal (turning the handlebar)
- Uniform steering rotation
- Charge of the bike



**CAUTION**

**CHECK AND ADJUST TYRE PRESSURE WITH TYRES AT AMBIENT TEMPERATURE.**

**NEVER EXCEED THE RECOMMENDED INFLATION PRESSURES AS TYRES MAY BURST.**

## ➤ **Functional inspection**

Functional Checks:

- Hydraulic braking system: lever travel
- Engine: proper general functioning and no abnormal noise check
- Other: papers check, chassis number check, licence plate fitting lock check, tyre pressure check, rear-view mirror and any accessory fitting.



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