



User manual

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Table of Contents

1. INTRODUCTION	5
2. THE VIRTO2 PACKAGE	6
2.1 THE VIRTO2 PACKAGE	6
2.2 UNPACKING THE VIRTO2	7
3. SYMBOLS IN THIS MANUAL	8
4. SAFETY	8
4.1 SAFETY REGULATIONS	8
5. USE AND OPERATION	10
5.1 THE VIRTO2	10
5.1.1 <i>Vehicle Identification Number (VIN)</i>	10
5.2 FIRST THINGS FIRST	10
5.2.1 <i>[First time] Charging the batteries</i>	10
LED-DISPLAY CHARGER	11
TROUBLESHOOTING	11
5.2.2 <i>Controls</i>	12
5.2.3 <i>Unlock Virto2</i>	13
5.2.4 <i>Dashboard / menu structure</i>	14
5.2.5 <i>Automatic parking brake</i>	16
5.2.6 <i>Seat on Virto2</i>	17
5.3 DRIVING THE VIRTO2	19
5.3.1 <i>Getting ready / daily check</i>	19
5.3.2 <i>Driving the Virto2</i>	19
5.3.3 <i>Luggage compartment</i>	19
5.3.4 <i>Luggage carrier</i>	19
5.3.4 <i>Tires</i>	20
5.2.5 <i>Brakes (tips and maintenance)</i>	20
5.3.6 <i>Options</i>	21
5.4 MAINTENANCE	22
5.4.1 <i>General</i>	22
5.4.2 <i>Daily maintenance</i>	22
5.4.3 <i>Monthly maintenance</i>	22
5.4.4 <i>Yearly maintenance</i>	22
5.4.5 <i>Battery maintenance</i>	22
6. FAILURES	24
6.1 ELECTRICAL FAULTS	24
6.1.2 <i>Motor controller error</i>	24
6.2 MECHANICAL FAULTS	25
7. TECHNICAL SPECIFICATIONS	26
ATTACHMENT I – EU TYPE APPROVAL CERTIFICATE	27
ATTACHMENT II – WHERE CAN I DRIVE?	28

ATTACHMENT III – WARRANTY MANUFACTURER 29

1. Introduction

Congratulations on the purchase of your new Virto2! You have bought an excellent vehicle, which is constructed and built with care.

You will enjoy the Virto2 most, when following the instructions in this manual, regarding safety, use and maintenance.

This Virto2 is type approved in EU.

The Virto2 is solely meant for 1-person transportation. Explicitly NOT for transportation of objects and/or materials outside the built-in storage compartment.

When using the Virto2, please make sure you are informed of the local law!

M-Products B.V. is NOT responsible for damage and indirect damage as result of operating errors, lack of expert maintenance and any other figurative use of the Virto2.

Responsibility of M-Products B.V. expires also, when you or third parties make any changes to the Virto without prior written permission of M-Products B.V.

Some of the contents and/or pictures in this manual may differ from your specific Virto2. This is depending on the country where you purchased the Virto and the options installed.

Your Virto2 and its accessories may differ from the illustrations in this manual. This depends on the country where you purchased the unit.

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2. The Virto2 package

2.1 The Virto2 package

The Virto2 is delivered in a framework, to optimize use of space during transport.



Picture 2.1 Packaging

The package includes:

- ✓ Virto2
- ✓ Battery pack
- ✓ Battery charger
- ✓ Quick Guide
- ✓ USB stick, with a.m. this manual.
- ✓ Plastic zipper bag, incl:
 - Key-set of the electrics compartment
 - Key-set of the storage compartment

2.2 Unpacking the Virto2

Step 1: Remove all packing material (wrapping foil and plastic bag)



Step 2: Unscrew the 4 screws of the transportation framework.



Step 3: Tilt the side frames outwards until the Virto2 rests on the floor. Remove the frame parts.



Step 4: Loosen the clamp rings and adjust the handle bar to your pleased position.

Step 5: Set and fix the mirrors to your pleased position

3. Symbols in this manual



TIP



CAREFUL !



WARNING !



PROHIBITION !

4. Safety

4.1 Safety regulations



4.01 Carefully read this manual before handling the Virto2. Then you are aware of the function of all components and how to control the Virto2. This is important for ANY person who is going to drive/work with the Virto2!



4.02 It is prohibited to make changes in the Virto2. Prior written permission of M-Products B.V. is always needed.



4.03 Before driving the Virto2, make sure the Daily Check has been done. (Chapter 5.3.1)



4.04 Working on and inspections on the Virto2 only may be executed by authorized and trained maintenance personnel. Before commencing any work on a Virto2 shut off the Virto2 and remove the battery pack.



4.05 The maximum load for the Virto2 is 125 kg (250 pound). This load can only exist of driver and luggage in luggage compartment.



4.06 Prevent battery shortage. Make sure no connection between the terminals is possible. Perform a regular check on the wiring. Substitute damaged wiring with good wiring.



4.07 Only charge the Virto2 with the included battery charger.



4.08 Keep the Virto clean, this could prevent problems.



4.09 The Virto2 should not be cleaned with high-pressure washer. See paragraph 5.4.1. for cleaning instructions.



4.10 Inform yourself about the local law regarding minimum age to drive a Virto2.



4.11 It is prohibited to drive the Virto2 for people who cannot or are inadequate to see the dangers of driving the Virto2.



4.12 Also people with for example balance disorders, dizziness, have difficulties with walking/standing, are under influence of alcohol, medication and/or narcotics are not allowed to drive the Virto2.



4.13 It is not allowed to be on a Virto2 with more than 1 person.



4.14 Do not let children play in the direct surroundings or on a Virto2.



4.15 It is not allowed to step on- or off a riding Virto2.



4.16 Always make turns on an appropriate speed.



4.17 Always keep 2 hands on the steering while driving.



4.18 Storage: heated and dry.



4.19 **DRIVE SAFELY and DON'T TAKE RISKS!** Inform yourself about the local law and rules of conduct.

5. Use and operation

5.1 The Virto2

5.1.1 Vehicle Identification Number (VIN)

On the right-hand side of the Virto2, a VIN number is hammered. This is the unique number of the vehicle. The VIN is hammered behind the front wheel into the frame at the right side of the vehicle.

This VIN is used for i.a. insurance and type approval purposes, but also for identification when contacting M-Products or dealer in case of faults, questions, repairs, etc.

Attention: making changes or additions to the VIN or even complete removal is NEVER allowed!

5.2 First things first

After unpacking things, the following must be done before the Virto2 can be used.

5.2.1 [First time] Charging the batteries

The Virto2 is powered by a 24V AGM 110Ah or Li-NCM 70Ah or 140 Ah battery pack (depending the specification of the pack). This battery pack only may be charged via supplied battery charger. Only this charger will assure optimal condition of the battery pack.

New batteries must be charged a couple of times before they reach their maximum capacity (thus driving range) therefore the range of a Virto2 with a new battery pack could be less than expected.

Battery indicator on the dashboard

If the indicator has 2 bars left it is time to search for a place to charge your battery pack. Do NOT drive until the Virto2 shuts off automatically: this could damage the batteries.

How to connect the battery charger?

Charging with standard charger.




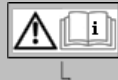



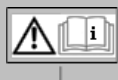


Photo of STANDARD battery charger

Charging

1. Switch off the main power OFF
2. Connect charger to a 110-230 power supply
LED-1 will light orange
3. Connect charger to the charging socket of the Virto2 (located under the seat)

(Disconnect in reverse order)

LED-Display Charger					
Operating state during the charge process					Note
	<80%	>80%	100%		
Deep-discharge start	blinken				
Main charge	X				
Recharge	X				
End of charge / Charge retention	X				
Operating state in chase of a fault					Error number
	<80%	>80%	100%		
Battery missing				X	1
Battery error	blinken			X	2
Time error	X			X	3-4
Control error		X		X	10-14
Temperature error			X	X	6

Troubleshooting	
Error number	Procedure
1,2,3,4	Check battery and battery wiring
6,11-13	Have the charger checked

Charger can be left connected until the Virto2 is used again.

If Virto2 is not use for a longer time, make sure Virto2 is charged once a month. To do this disconnect charger from 110-230 V and reconnect again. Charger will start a new charging cycle automatically. In this way you keep your batteries in a good condition.

Charging place

Charging the batteries must be done in a well-ventilated space. It is the customers responsibility to use a place that meets this requirement.

Also make sure the charger is connected to a wall socket with the correct voltage.

Warnings

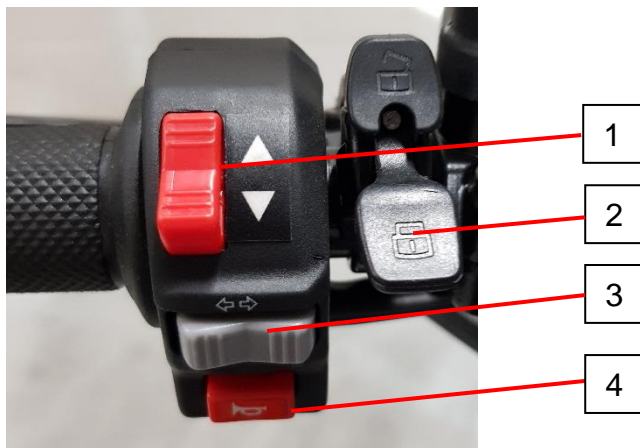


- Do not drop the battery pack, battery/batteries or charger.
- Use a well-ventilated space to charge the batteries.
- Do not expose the batteries/battery pack to heat or direct sunlight.
- Charge the batteries within temperature range of 15-25°C.
- Prevent the batteries/battery pack and charger come into contact with water.
- Do not cover the battery charger.

When charging multiple battery packs one after another:
Battery chargers must be reset after each charging cycle. This can be done by disconnecting battery charger from 110-230V power supply and connect before connecting another battery pack. Follow connect/disconnect instructions mentioned in paragraph 5.3.1.

5.2.2 Controls

Almost ready to drive. Find below the explanation of the Virto2 controls.



Controls – Left handlebar switch

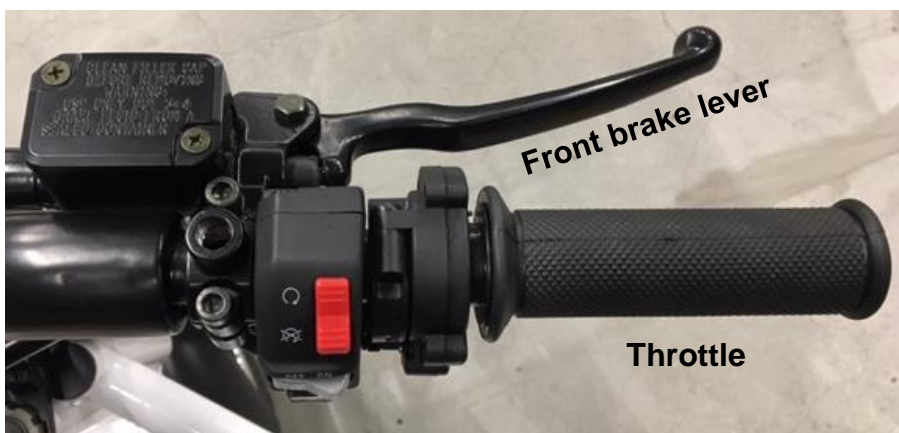


Controls – Right handlebar switch

1. FWD / REV switch, changes driving direction
2. Automatic parking brake, standard position is unlocked.
3. Blinker switch to activate left or right blinker
4. Horn switch
5. Main power / emergency switch. **While driving, only use in case of emergency. All power will shut down and motorbrake will act immediately, which will cause emergency braking.**
6. FWD driving sound on/off. Switching this button on, will activate a beeping sound, driving in forward direction
7. Start / Stop button. Pressing this button will activate or shut down the Virto2



Steer – Left handlebar



Steer – Right handlebar

5.2.3 Unlock Virto2

Unlocking of Virto2 can be done in 2 ways:

1. Unlock Virto2 with password

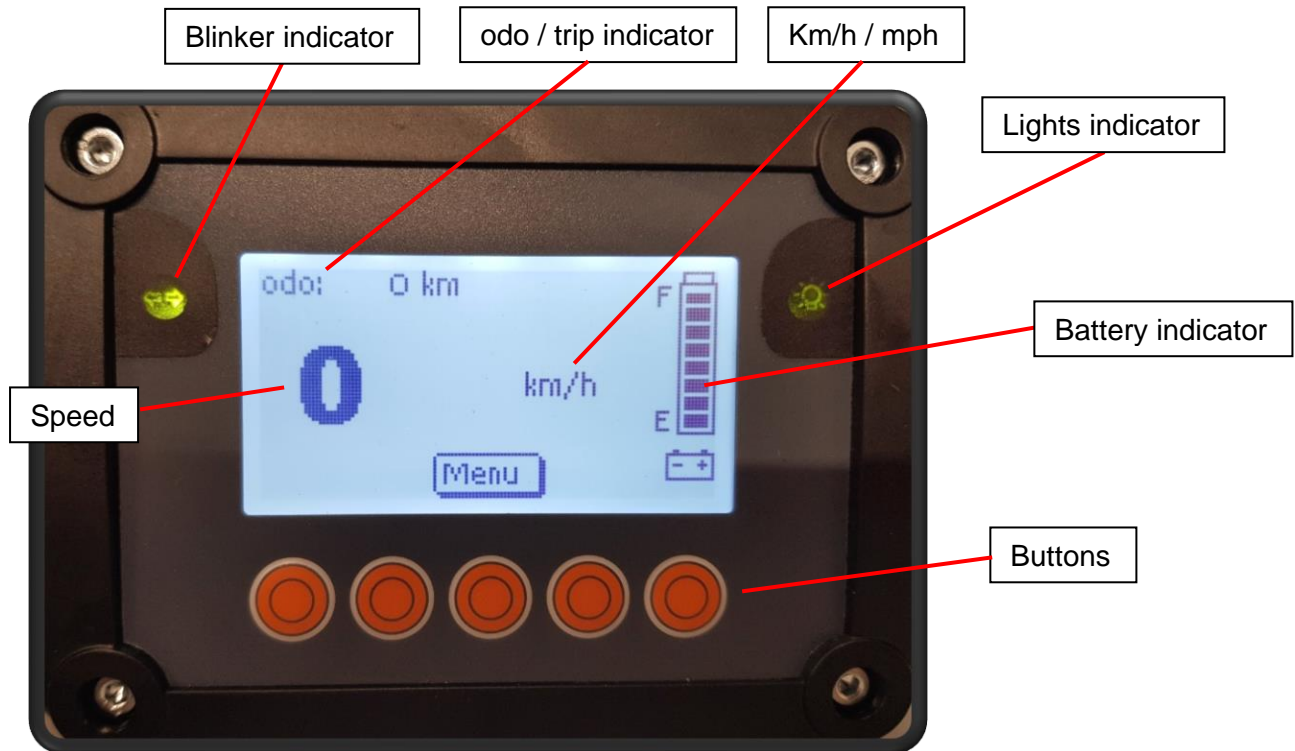
- a. Press start/stop button (right handle bar, button 6)
- b. Display will show a small Bluetooth logo blinking in the top left corner
- c. Press one of the 5 buttons → display ask for password
- d. Enter password: standard is 00000. Wrong password or password lost? Display will show “wrong password” but also a button to select “PUK”. Selecting PUK allows you to unlock the Virto2 with the PUK code (unique code, delivered with your Virto2)

2. Unlock Virto2 with Bluetooth

- a. Press start/stop button (right handle bar, button 6)
- b. Display will show a small Bluetooth logo blinking in the top left corner, indicating that Virto2 is searching for any paired Bluetooth devices.
- c. When Bluetooth device is found, Virto will unlock automatically

5.2.4 Dashboard / menu structure

The Dashboard on the Virto2 will display mandatory information on the vehicle status, but also will display error codes in the event of a motor controller error and can be used to personalize some settings.



Dashboard

Change password

Virto2 can be unlocked with a password. Standard password for every Virto2 is 00000. To change this password go to menu → about → PUK → Enter PUK code
After entering correct PUK code, go to menu → about → Password to change the Virto2 password.

Pair new Bluetooth device

Virto2 can also be unlocked with a Bluetooth device. To do this, a Bluetooth device needs to be paired with the Virto2 and the Virto app has to run in the background.
To pair a new Bluetooth device go to menu → Bluetooth → allow new BT devs → set value to true
Search for the Virto2 in your Bluetooth device and connect within 20s.
Download Virto2 app from Appstore. This app needs to stay active in the background to unlock Virto2 automatically.

Error code

In the event of a motor controller error, the display will show this error code blinking in the center of the display. This code can be used in combination with the error list in the failures section (chapter 6) to do troubleshooting.

Battery indicator

The battery indicator in the display, give the user information about the state of charge of the battery. When the battery is below 10%, the indicator will warn with a flashing lightning symbol. If battery is further discharge and reaches a critical level, the Virto2 will decrease speed to 5km/h. To reset this low speed activation, the Virto needs to be charged.

Menu structure

Toggleing the menu by using the 5 round buttons will give access to the following menu

- ❖ **Menu**
 - ❖ **User interface**
 - ❖ **Contrast**
Contrast of the display can be set lighter or darker
 - ❖ **Language**
Toggleing the number to set another language (standard English)
 - ❖ **Imperial units**
False = km/h, True = mph
 - ❖ **Odometer**
 - ❖ **Odometer (km)**
Shows overall driven distance in km's
 - ❖ **Tripmeter (km)**
Shows driven distance trip in km's
 - ❖ **Odometer (mi)**
Shows overall driven distance in miles
 - ❖ **Tripmeter (mi)**
Shows driven distance trip in miles
 - ❖ **Reset trip**
Set value to "true" to reset trip distance
 - ❖ **About**
 - ❖ **Firmware version**
Shows firmware version of display
 - ❖ **OEM settings**
Require OEM password to unlock OEM settings
 - ❖ **Dealer settings**
Require Dealer password to unlock dealer settings
 - ❖ **PUK**
After entering PUK code, the Virto2 password can be changed in the about menu
 - ❖ **Bluetooth**
 - ❖ **Allow new BT devs**
Set this value to "true" allows the user to pair a bluetooth device during 20s.
 - ❖ **Remove all BT devs**
Set value to "true" to forget all paired Bluetooth devices.
 - ❖ **Connected phone**
Shows current connected phone. This value shows only a connected phone when Virto2 is unlocked with bluetooth.

5.2.5 Automatic parking brake

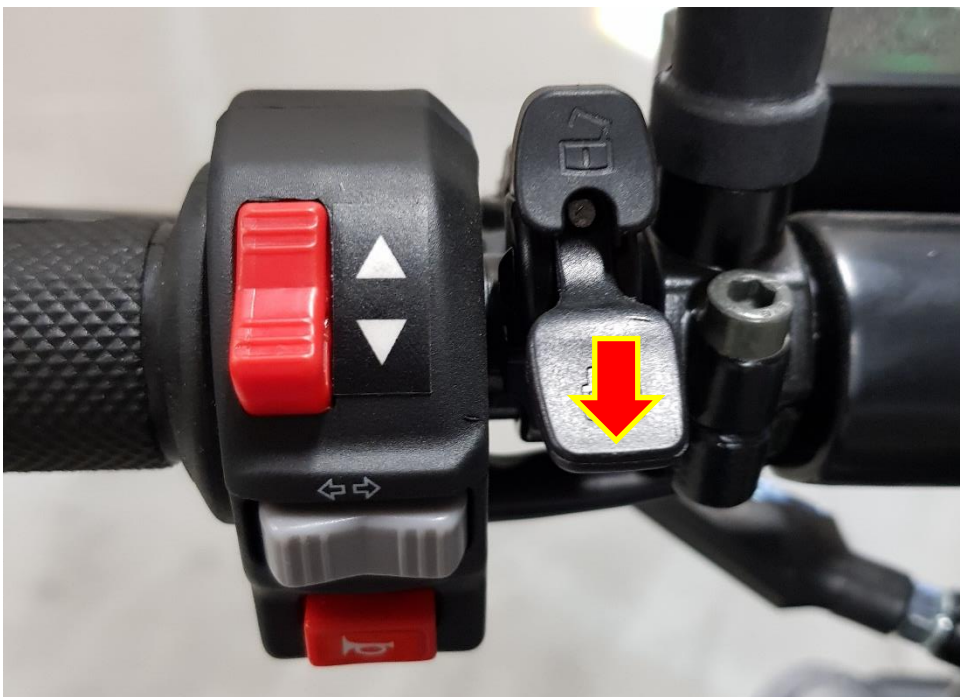
The Virto2 is supplied with an automatic park brake that act on the drive motor.

The park brake automatically releases when throttle is activated and is automatically activated when Virto2 is stopped. Standard leave lever in unlocked position. To release the brake, power is needed.

In the event of an electrically error or empty battery, the brake will not release automatically.

To release the brake manually, use the parking brake switch on the left handlebar. Push the lever downwards in locked position, this will manually release the brake.

Pay attention! Only change the lever to locked position with an emergency situation. Never drive with a manually released brake, this can cause damage to brake and motor.



Manually release parking brake by pushing switch downwards

5.2.6 *Seat on Virto2*

The Virto2 is supplied with a seat. To set the seat at the correct height, follow the following steps

1. Pull out the lever and pull up the seat to adjust to the right height.



2. Push the lever back to secure the seat at the right height.



5.2.7 *Electrical compartment*

The electrical compartment is located behind the driver position. It can be unlocked by turning the key to the left. Switch off main power before opening.



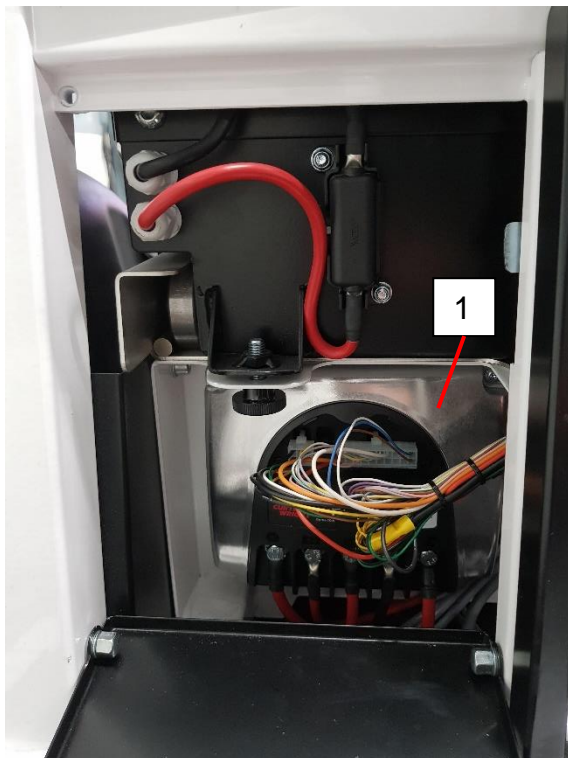
Step1: Switch off main power button



Step 2: Unlock electric compartment



Step 3: Open electric compartment

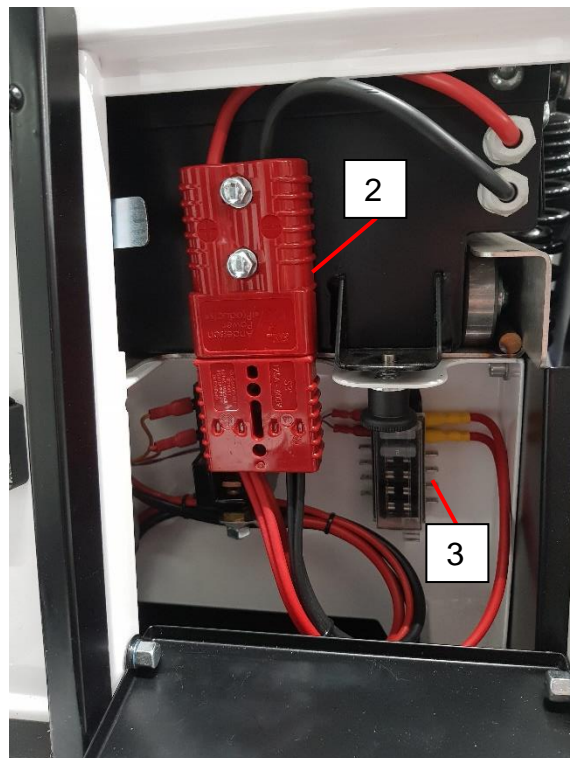


Step 4: Electrical compartment left side:

1. C3 motor controller

Electrical compartment right side:

2. Battery connector
3. Fuse box



5.3 Driving the Virto2

5.3.1 *Getting ready / daily check*

Make sure the battery charger is disconnected, and the battery pack is properly inserted and secured into battery compartment.

Check the Virto2's mechanical- and electronic functions before departure. Do not drive when parts do not work, are missing or loose.

5.3.2 *Driving the Virto2*



- Do not drive into puddles.
- Do not drive roads and/or slopes with higher than +10% inclination.
- Always keep both hands on the handlebars.
- Avoid obstacles, these could damage the Virto2.

Getting on

- Switch off main power.
- Step on the Virto from the side of the vehicle, with both hands on the handlebars.

Drive

- Switch on main power.
- Press start/stop button, to turn on the Virto2.
- Slowly increase speed.
- Lean into corners at appropriate speed. (like driving a scooter)
- Always brake with both brakes.

Park

- Park the Virto2 on a horizontal / flat surface.
- Press start/stop button to turn off the Virto2 .
- Switch off main power.

5.3.3 *Luggage compartment*

Luggage compartment

- Maximum weight to be put into luggage compartment is 15 kg.
- The front compartment can be used for storing the battery charger.

5.3.4 *Power supply handlebar*

- Power of USB plug is limited to 2 AMPS.

5.3.5 *Luggage carrier*

- Maximum weight to be put on the luggage carrier is 15kg.
- Luggage carrier is supplied with holes to mount accessory. To use these holes, the plastic cover has to be drilled.

Attention: the maximum load on the Virto2 is 125 kg. This INCLUDES the 15 kg weight in the luggage compartment and driver weight.

5.3.4 Tires

Regularly (preferably daily) check the tire pressure.



Underinflating may result in drastically shortened range of the Virto2 and shorten the lifespan of the tires. Also the handling gets worse.

Inflate tires to 2,8 BAR (40 psi) front- and rear tires.



The above mentioned tire pressure may NOT be exceeded!

5.2.5 Brakes (tips and maintenance)

Prevent braking hard: anticipate.



Especially prevent hard braking the first 30km: braking hard in this period can result in decreasing braking power and squeaky sounds while breaking.

Also lifespan of the brake pads and discs will decrease.

Always brake with both brakes.

Bleeding the brakes

Unless you are experienced with this task: let your dealer do the bleeding of the braking system.

- Make sure to catch all (old) braking oil and make sure to dispose of old fluid in an environmentally friendly manner.

Perform these steps for each wheel.

1: Disassemble the caliper on a way the vent valve is pointing upwards.

2: Open the vent valve.

3: Gently squeeze the brake and close the vent valve before releasing the brake lever again.

4: Repeat point 2 and 3 until no more air comes out of the valve and the brake fluid you see is clean and new.

Attention: make sure the fluid level in the brake fluid reservoir is never below LOW

5: When done make sure the fluid level in the reservoirs is at the correct level.

Replacing brake fluid

Advised to be done by your dealer.

- Only use DOT4 braking fluid.
- Make sure to catch all (old) braking oil and make sure to dispose of old fluid in an environmentally friendly manner.

Replacing brake pads/discs

Advised to be done by your dealer.

5.3.6 Options

Attention: the availability of the below mentioned options depends on the model and accessories purchased with the Virto2.

Lithium NCM battery

Standard, the Virto is supplied with an AGM battery 110Ah.

Optional, there is the option to supply the Virto2 with a 24V 70Ah battery, which will perform about the same as the AGM battery.

Optional, there is also the option to supply the Virto2 with a 24V 140Ah battery, which will double the capacity of the 70Ah Lithium option.

Multiple battery packs and change cart

It is optional to purchase multiple battery packs.

Because of weight of the AGM batteries, to change battery pack, a battery change cart is needed for an easy and safe change.

Tow accessory

The back of the Virto2 is design to add a towbar or tow accessory like ECC-13. Ask your dealer for the possibilities



5.4 Maintenance

5.4.1 General

The plastic body panels are made from high quality plastic and therefore resistant to UV-radiation. Even after a long time. The material will not discolor.

The body panel material is comparable quality regarding to normal scooter- or motor parts. The material is resistant to oils, fatten and several chemicals. Salt water, sun, spilled fuel, oil and temperatures (slightly) below 0°C is no problem.

Cleaning



- Prevent water coming into contact with electrical parts of the system.
- Do not use other cleaning products or methods than mentioned below.

The cleaning can be done with water and if desired with addition of common car cleaning shampoo. Scratches can be treated with the commonly available polishes and/or wax for paint, leather or wood.

5.4.2 Daily maintenance

- Check daily for defects, bent or broken parts. Let these defects be repaired quickly to prevent more damage or physical accidents.
- Check if the Virto2 is moving freely. (f.e. brakes: pads may not touch the discs when you are not braking)
- Keep the Virto2 clean.
- Check the electrical system for damages.
- Check moving parts if they are still functioning.
- Check brake fluid levels.
- Check if throttle is interrupted when braking
- Store the Virto2 in a dry and sheltered space, 5 - 40C°.

If defects are found: repair them before using the Virto2.

5.4.3 Monthly maintenance

- The batteries have to be charged regularly. Do not drive until the battery is fully empty.
- When the Virto2 is not in use for a long time, still check the batteries regularly and charge them is necessary.
- Disconnect the battery pack when Virto2 is not in use.
- Check the Virto2 for wear and tear. Check the steering column and the suspension for play on the bearings.

5.4.4 Yearly maintenance

- Contact your Virto dealer

5.4.5 Battery maintenance

When the Virto2 will not be used for a long time, the battery pack must be disconnected and charged fully. Check the battery level every month and charge when needed. To keep the batteries in optimal condition, charge the battery pack when battery indicator shows 3 bars or less. (test when driving the vehicle!)

At least charge the battery pack every month!

The battery pack may be connected to the charger 24/7. For example when Virto2 is not used for a longer period.

Installing new battery pack:



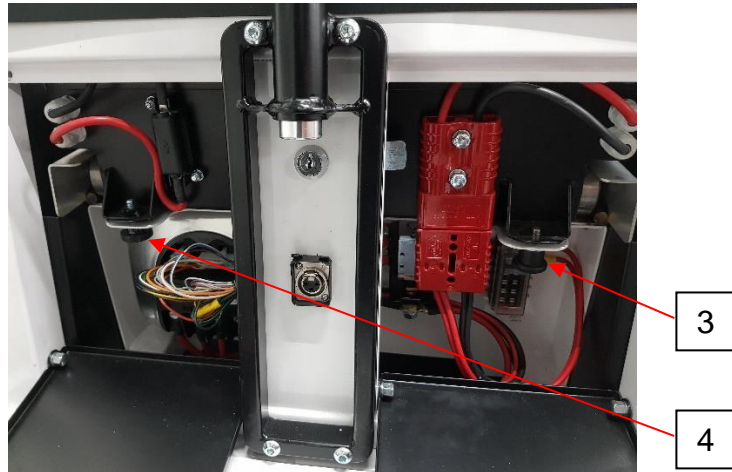
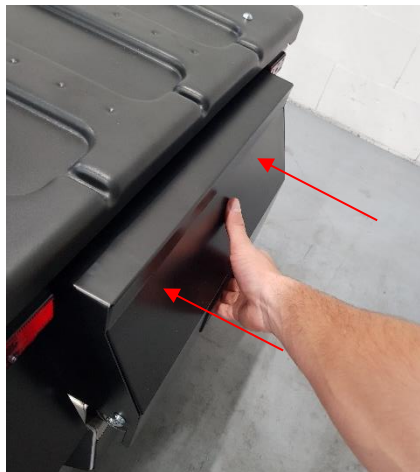
Step1: Switch off main power button



Step 2: Unlock electric compartment



Step 3: Open electric compartment



1. Switch of main power button.
2. Unlock electric compartment by turning the key to the left.
3. Open the electric compartment by giving some pressure at the bottom of the plate.
4. Battery pack needs to be inserted into the Virto2 from the back of the Virto2. To make this easy, bring the battery pack up to the right height of the Virto2.
5. Carefully slide the battery pack into the Virto2.
6. Make sure the pin on the left side secures the battery pack.
7. Double fix the battery pack by mounting the grip knob on the right side of the battery pack. To make this easier apply some force to the back of the battery pack and push the battery further in the compartment simultaneously with inserting the grip knob.
8. Connect battery pack with Virto2 by connecting the red connectors.

6. Failures

6.1 Electrical faults

Problem	Possible cause	Possible solution
Doesn't drive	Battery pack empty	Fully charge battery pack
	Fuse	Replace fuse with fuse of same rating
Drives halting	Contact your Virto Dealer	
No power	Fuse battery pack	Check and replace fuse with fuse with same specs
	Main relays stuck	Reset main relay by removing ignition key and restart again
Battery pack doesn't charge	Charger connected properly?	Connect charger properly following instructions
	Charging multiple packs after another?	Reset charger (switch off and on again after 5 seconds)
	Charger still switched on after last charging cycle?	Reset charger (switch off and on again after 5 seconds)
Lights do not work	Fuse	Check and replace fuse with fuse with same specs
	Lights broke?	Let the lights be replaced by your dealer.

6.1.2 Motor controller error

The display of the Virto2 will show the error number in the event of a motor controller error. Below list can help trouble shooting.

Trip Code	Trip Type	Description & Reference
0810	7	Throttle Error. Refer to Section 2.7.1
0E21 – 0E36	7	Throttle Error. Refer to Section 2.7.1
1310	3	High Motor Current. Refer to Section 2.3.1
1330	2	Traction Motor Stalled. Refer to Section 2.2.3
1360	3	Very High Motor Current. Refer to Section 2.3.1
1500	9	Solenoid Brake Short Circuit. Refer to Section 2.9.1
1502	9	Solenoid Brake Open Circuit. Refer to Section 2.9.2
1600	10	High Battery Voltage. Refer to Section 2.10.1
1701	4	Line Contactor Open Circuit. Refer to Section 2.4.1
1705	4	Line Contactor Short Circuit. Refer to Section 2.4.2
170C	4	Line Contactor Coil Short Circuit. Refer to Section 2.4.3
170D	4	Line Contactor Coil Open Circuit. Refer to Section 2.4.4
1D02	7	Cycle Power. Refer to Section 2.7.2
1D04	7	Both Direction Switches Active. Refer to Section 2.7.3
1E08	6	Inhibit 1 Active (Latched). Refer to Section 2.6.1
1E09	6	Inhibit 2 Active (Latched). Refer to Section 2.6.2
1E0A	6	Inhibit 3 Active (Latched). Refer to Section 2.6.3
2B04	3	High Motor Voltage. Refer to Section 2.3.2
2C00	1	Low Battery Voltage. Refer to Section 2.1.1
2C01	8	Watchdog Error. Refer to Section 2.8.5
2C02	1	Low Voltage Cut-Out. Refer to Section 2.1.2
2C04	10	High Battery Foldback. Refer to Section 2.10.2
2D01	2	Demand Drive Mismatch. Refer to Section 2.2.2

2D01	2	Demand Drive Mismatch. Refer to Section 2.2.2
2F01	7	Drive Command Active At Start-Up. Refer to Section 2.7.4
2F10	7	Lift Or Lower Command Active At Start-Up. Refer to Section 2.7.5
3100	1	Low Bridge Voltage. Refer to Section 2.1.3
3105	10	High Bridge Voltage. Refer to Section 2.10.1
3106	10	Very High Bridge Voltage. Refer to Section 2.10.3
3A00	8	Bad Settings. Refer to Section 2.8.2
3A06	7	Invalid Settings. Refer to Section 2.7.1
3A08	8	Bad Nameplate Settings. Refer to Section 2.8.3
3B01	2	Motor Open Circuit. Refer to Section 2.2.1
3D02	3	Motor Shorted High. Refer to Section 2.3.3
3D03	3	Motor Shorted Low. Refer to Section 2.3.4
4401	-	Record Of Controller Error. Refer to Section 2.8.4
7802	3	Motor Temperature Foldback. Refer to Section 2.1.2
7804	3	Timed Current Foldback. Refer to Section 2.1.1
7810	3	Motor Temperature Cut-Off. Refer to Section 2.1.3
7820	3	Controller Temperature Foldback. Refer to Section 2.1.4
7902	3	Controller Temperature Cut-Off. Refer to Section 2.1.5
7904	7	Belly Button Active At Start-Up. Refer to Section 2.7.6
7905	7	Belly Button Input Invalid. Refer to Section 2.7.7
7906	7	Belly Button Input Mismatch. Refer to Section 2.7.8
7907	7	Belly Button Input Configuration Error. Refer to Section 2.7.9
7908	3	Motor Thermistor Open Circuit. Refer to Section 2.3.5
7910	7	Belly Button Input Data Timeout. Refer to Section 2.7.10
791D	7	Throttle Input Data Timeout. Refer to Section 2.7.1
7944	5	Lift/Lower Input Data Out Of Range. Refer to Section 2.5.5
794D	7	Throttle Input Data Out Of Range. Refer to Section 2.7.1
9100	5	Lift Contactor Coil Open Circuit. Refer to Section 2.5.1
9102	5	Lift Contactor Coil Short Circuit. Refer to Section 2.5.2
9110	5	Proportional Valve Open Circuit. Refer to Section 2.5.6
9114	5	Proportional Valve Over Current. Refer to Section 2.5.7
9120	5	Lower Valve Open Circuit. Refer to Section 2.5.3
9121	5	Lower Valve Short Circuit. Refer to Section 2.5.4
9200	3	High Bridge Current. Refer to Section 2.3.6
9300	-	Keyswitch Service Speed Limit Active. Refer to Section 2.1.6
9301	-	Active Service Speed Limit Active. Refer to Section 2.1.6
9500 – 950A	5	Lift/Lower Error. Refer to Section 2.5.8
9510 – 951A	7	Brake Pedal Error (C3-36V Only). Refer to Section 2.7.11
All Other Codes	8	Controller Error. Refer to Section 2.8.1

When the Virto2 after checking above instructions still not operates properly, contact your dealer and have the VIN number of your vehicle within reach when calling.

6.2 Mechanical faults

In case of mechanical faults, always contact your dealer immediately.

7. Technical specifications






General	
Manufacturer	M-Products B.V.
Dimensions	
Width Virto	820 mm
Length Virto	1699 mm
Height Virto	1421 mm
Height standing platform	190 mm
Properties	
Maximum load	125 kg (driver + luggage in compartment)
Weight empty	135 kg (excl. batteries)
Speed	Max 20 km/h (depends on purchased model and local regulations)
Batteries	
Type	24 Volt AGM or Lithium NCM
Capacity	24V 110 Ah AGM
Optional	24V 70 Ah Lithium NCM
	24V 140 Ah Lithium NCM
Battery charger	
Charger standard	110/ 230V, 50-60 Hz, 24V – 12A
Engine	
Type	Benevelli TX1
Voltage	24 Volt BLDC
Power	1200 Watt
Type	51E12507508C51x800x
Tires	
Front	110/70-11 Tubeless
Rear	110/70-11 Tubeless

ATTACHMENT I – EU Type Approval Certificate

ATTACHMENT II – Where can I drive?

INFORM YOURSELF ABOUT THE LOCAL TRAFFIC RULES

The Netherlands

DO / WEL	DON'T / NIET
<p><i>Virto2 has to drive on bicycle/moped lane or roadway when bicycle/moped lane is not there</i> Een Virto2 moet rijden op het fiets/bromfietspad of op de rijbaan als een fiets/bromfietspad ontbreekt</p>	<p><i>Roads assigned with below traffic signs are NOT to drive with a Virto2</i> De wegen met de volgende verkeersborden zijn NIET bedoeld voor de Virto2</p>
<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Obligatory bicycle/moped lane Verplicht (brom)fietspad <i>When available must use this lane</i> Hier moet u op dit (brom)fietspad rijden</p>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Highway/freeway Auto (snel)wegen</p>
<div style="text-align: center;">  </div> <p>Not obligatory bicycle lane Onverplicht fietspad <i>Virto2 MAY use this lane</i> De Virto mag gebruik maken van dit fietspad</p>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Walkway/bridle way Voetpad of ruiterspad</p>

En verder / and additional:

- *driver license obliged* / Rijbewijs nodig
- *no helmet (when speed <25 km/h)* / Geen helmplicht
- *minimum age 16 year* / Minimum leeftijd 16 jaar
- *lights obliged with poor visibility/in dark* / Verlichting bij slecht zicht en donker verplicht
- *keep right as possible* / Zoveel mogelijk rechts houden
- *don't drive 2 Virto's aside* / Niet met meerdere voertuigen naast elkaar rijden
- *Don't phone/text etc. when driving* / NIET telefoneren/social media tijdens het rijden

ATTACHMENT III – Warranty manufacturer

M-Products B.V. fully supports the quality of Virto2. Including through the use of reliable parts that we buy from reliable suppliers.

M-Products B.V. staat volledig achter de kwaliteit van de Virto2. Onder andere door het gebruik van betrouwbare onderdelen die we kopen via betrouwbare leveranciers.

Op de Virto2 wordt 1 jaar fabrieksgarantie gegeven, behalve op:

The Virto2 comes with 1 year Factory Warranty, except for the following:

- a. *Parts with high wear and tear, like: tires, brake discs, brake pads, batteries. The batteries come with a half-year factory warranty.*
Aan slijtage onderhevige onderdelen zoals: banden, remschijven, remblokken, accu('s). Op accu's wordt een half jaar fabrieksgarantie gegeven.
- b. *All damage caused by neglecting the regulative maintenance program.*
Alle schade die voorkomt uit het negeren van het voorgeschreven onderhoudsprogramma.
- c. *All damage which is the result of repairs, adjustments or maintenance which are not advised and/or carried out by M-Products B.V. or a dealer of M-Products B.V.*
Alle schade die het gevolg is van reparaties, aanpassingen of onderhoud dat niet door M-Products B.V. wordt voorgeschreven, of niet door (een dealer van) M-Products B.V. is uitgevoerd.
- d. *All damage as result of competition purposes, racing, off road or use on unimproved roads.*
Alle schade die het gevolg is van competitiedoeleinden, race, terreinrijden of gebruik op niet normaal bedoeld wegdek.
- e. *All damage as a result of higher load of the Virto then described in this manual, or damage as a result of accidents.*
Alle schade die voorkomt uit hogere belasting dan in het instructieboekje staat beschreven, of schade die voorkomt uit ongevallen.
- f. *All damage as a result of assembling and use of parts that are not advised or mounted by (a dealer of) M-Products B.V.*
Alle schade die voorkomt uit het monteren en gebruiken van onderdelen die niet zijn voorgeschreven door M-Products.
- g. *All damage as result of normal use of the Virto2, like light scratches on footrest or body parts, coloring of varnished/painted parts by sunlight, etc.*
Alle schade die voorkomt uit normaal gebruik van de scooter zoals krassen op de treeplank, verkleuren van gelakte delen door zonlicht enz.
- h. *All damage as result of incorrect usage of the Virto2 like referred in this manual.*
Alle schade die ontstaat uit het niet correct gebruiken van de scooter zoals beschreven in het instructieboekje
- i. *All damage as result of natural disasters, theft, fire, etc.*
Alle schade die voorkomt uit natuurrampen, diefstal, brand enz.
- j. *All damage as a result of (applying of) chemical products, salt, oil, smoke, seawater, excreta, etc.*
Alle schade die voorkomt uit chemische producten, zout, olie, rook, zeewater, vogeluitwerpselen en dergelijke.

M-Products cannot be held liable for:

M-Products B.V. kan niet aansprakelijk worden gesteld voor:

1. *Costs of recurring maintenance costs during warranty*
Kosten van periodiek onderhoud tijdens de garantieperiode
2. *Delivery costs*
Afleveringskosten
3. *Costs coming forth from any unsound work and/or poorly executed work*
Kosten voortkomend uit enig werk wegens voordien ondeugdelijk en/of slecht uitgevoerd werk

- 4. Additional costs made regarding a claim by, for example towing costs, telephone costs, hotel/diner costs, lost income, costs for replacement vehicle or any other costs during the repair period.*

Bijkomende kosten gemaakt in verband met een schadeclaim door bijvoorbeeld wegsleepkosten, telefoonkosten, hotel/dinerkosten, gedeelde inkomsten, kosten voor vervangend vervoer of enig andere kosten tijdens de reparatieperiode.

To keep this warranty, it is important the Virto2 is (demonstrably) well maintained according the mentioned information in the user manual and that the Virto has been treated well.

Om deze garantie te behouden is het belangrijk dat de Virto2 (aantoonbaar) goed is onderhouden volgens de opgegeven richtlijnen en dat er netjes mee omgegaan is.

M-Products B.V.