

PERSONAL MOBILITY



Company Introduction

Minimotors is a company which manufactures and distributes personal mobility with a professional production system since 1999.

Minimotors created the electric mobility brand 'DUALTRON' and 'SPEEDWAY' to meet the world's needs by making personal mobility more innovative, reliable, and convenient since 1999 and making products loved all over the world. Today a new brand 'FUTECHER' was born.

Minimotors is doing its best to become the world's best electric mobility company.



Brand Introduction

'FUTECHER' is easy to carry and developed for urban lifestyles. The new brand represents the advaned technology of electric scooter in the future, produced and designed by Minimotors.



Please read the user manual carefully.

Do not use the product until you understand its functions.

Do not rent the product to anyone who cannot operate the product.

*For the first time, the user should use it with a slow speed for safety.

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FUTECHEC GUD

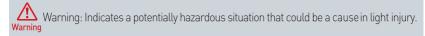
Before Reading Manual

Futecher Gun user manual contents

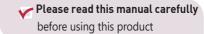
This manual contains important information to help you use your product more safely. For safe use, it is marked as 'Danger', 'Caution'and 'Warning' depending on the degree of danger and the meaning is as below.



Danger: Indicates a hazardous situation that could be a cause of serious injury.



Caution: Indicates a potentially hazardous situation that could be a cause in serious injury.



1) General safety guidelines and restrictions

* Even if the it is within the warranty period, you may be liable for any accident caused by any of the following causes.



1. Be careful of water!

This product and components are not waterproof. Don't let the water get into the product and components.

- *Never use it, if the road is wet due to the rain, snow, hailstone.
- *If you wash or spread water to electric devices, it can result in malfunction or fire.



2. Beware of folding and spinning parts!

If parts of the body, as a finger or hair, get caught in the spinning or folding parts of the product, this may lead to severe injuries. Please be careful.



3 No acrobatics

Stunts and jumps such as jumping and dropping are prohibited as they can cause a great impact on the product and can cause of malfunction and accidents



4. No companion boarding

This product is intended for one adult only, so children, infants, or two people are prohibited from boarding.



5. Don't tune by yourself

Do not open or tune the electric parts (battery, controller or motor system.



6. No companion boarding

Unlicensed, driving after drinking, loading cargo on the scooter is prohibited. (More than bike or bicycle license is required) Please comply with the Road Traffic.Act and related laws and regulations according to the place of use.



7. Beginners and seniors are encouraged to use at low speed

Beginners who are not accustomed to use the product, seniors and others should avoid high speed mode driving and recommend low speed driving. In addition, please use after practice how to ride safely in a wide place.



8. Do not sudden brake with front brake

If there is a risk of overturning, sudden deceleration should be done safely. Do not apply any unusual behaviors or artificial forces, such as stopping with your feet.





9. Do not accelerate downhill

Slow down at downhill. When reducing the speed, to prevent brake overheat, use the brakes properly to reduce the heat on the disk with proper brake use.



10. Do not drive on steep slopes

Acceptable gradeabilityis different for each product. Excessive hill roads exceeding the specification may cause damage to the product(parts) due to temperature cut, overcurrent or low voltage cut, which may cause the product to malfunction.



11. Safety warning when lifting the product

If the product is lifted by holding only the handle, there is a possibility that the product may be damaged due to deformation of the folding part due to load or movement of the product. When lifting the product, be sure to hold the product's body (footrest) with one hand and hold the handle with the other hand so that you do not get hurt in your back or knees.

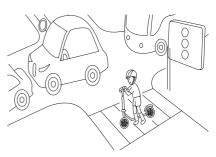


12. Be sure to wear safety equipment

For the safety of passengers, be sure to wear a full face helmet and the other protective gear(knee, elbow, hand, upper body) and do not wear shoes such as slippers, high hillsthat interfere with driving.

2) Precaution before driving

- 1. Night driving should be avoided in any case, be sure to wear helmets and other guards (knees, elbows, hands, upper body, etc.) and drive safely.
- 2. Select the mode that suits you and drive. In order to cope with the sudden situation, exercise to slow down tohold the brake at all times.
- 3. When turning left / right, slow down to avoid danger of overturning or slipping., And then slowly turn safely.
- 4. To go to backward, it is safe if you getting off from the product after stopping before moving.
- 5. It is prohibited to use in a slippery place, a crowded place, a steep slope, roads with a risk of accident, uneven road.
- 6. When crossing a pedestrian crossing, get off from the product for pedestrian safety.
- 7. Do not drive in a threat any other means of transport, such as animals, pedestrians, bicycles, motorcycles, cars, etc.
- 8. If you pass the speed bumps and obstacles, be sure to slow down.
- 9. When decelerating or braking, do not stop with using foot, but stop with using brake appropriately.
- Be careful that there is a risk of burns due to heat from motor and brake (especially disk rotor) after driving.
- 11. It is prohibited to drive with all the way by holding the handle with one hand.
- 12. Do not ride or drive when the kick stand is down.



Product components



Checking the components inside of the box

Default battery charger(2A), Default tool, User manual, Electric Scooter(Lithum battery included)

Product size



* Depending on the method of measurement, errors may occur.

Make a note of the serial number.

office situation)



The serial number can be used to check information such as date of purchase, warranty period, etc., and product information can be checked even if the product is lost or stolen.

[May vary depending on branch

Assembling of the instrument panel, brake



- Locate the instrument panel and tighten the fixing bolts.



-Adjust the position of the brake and tighten the fixing bolt with a hexagon wrench.

Name of each part

Futecher Gun





How to use the product

1) Productunfolding



2) How to start



Step1. Check before power on

If the headlight button is pressed before the product is turned on, the instrument panel will not turn on. In this state, it is designed not to start.

(Built-in short-time theft prevention function)

* The power of the instrument panel will turn off automatically after a few minutes of inactivity. At this time, the LED lamp is also turned off, so turn it off with the LED lamp button when you turn it on again, and turn off the main power switch after use.



Step3. Stance for driving

After tilting the kickstand, find a stable position on the footrest and then hold the handle grip comfortably. Be careful not to raise your foot on the rear fender.



Step2. Turning on the instrument panel

Press the POWER button on the instrument panel for 2 seconds to turn it on. You can set the start mode, cruise mode, electronic brake, and ABS function.



Step 4. Acceleration and deceleration

Acceleration can be performed by using the throttle of the instrument panel while driving, and the deceleration or stop can be performed by holding the brakes on the handle.

Before driving, be sure to check the folding part, the handle part, and the part where the main fixing part of the product are all fastened well.



And check the position of the fixing slide, the QR lever locking status, and the folding part fixing status

Throttle malfunction caution

Regardless of whether the throttle is operated or not, the motor sensor may continue to operate, causing malfunctions such as sudden acceleration. In this case, hold the brake lever to cancel the operation. This phenomenon may be caused by corrosion of the throttling, immersion of the throttle, disconnection of the magnet, broken off levers, or breakage of the spring. Do not bounce the throttle lever strongly.

3) How to stop

Step1

Rear brake use

Be sure to use the rear brake first for decelerating. when stopping while driving.

For safe stop, it is necessary to practice slow down after deceleration with rear brake.

Step2

To stop safely

When stopping, slow down, stop safely, and do not apply artificial force.



Step3

Deceleration and braking using electric brake

Set the use and strength of the electronic brake among the detailed functions of the instrument panel before driving. When the brake lever works, the electronic brake works together to increase the braking force.

Check for safe braking

- For safe braking, check whether the brake lever and disc caliper connection (wire damage, external breakage, etc.) are damaged before and after driving, and check brake wear and looseness of brake inner core (inner wire). In the case of hydraulic brakes, it is also necessary to check the oil leakage or deficiency and always check that the braking force is sufficient.
- Due to various factors such as road surface condition and speed, it may not always be possible to come to a complete stop even when the brake is operated as expected.

The electronic brake and ABS functions are auxiliary functions to further increase the braking force. The user should understand the function and expect the operation timing when using this function.

4) Product folding

Fold the handle by pressing the folding lever.



1. Folding handle

Push the handlebar downwards by pressing the fixing stopper.



2. Push in the handlebar

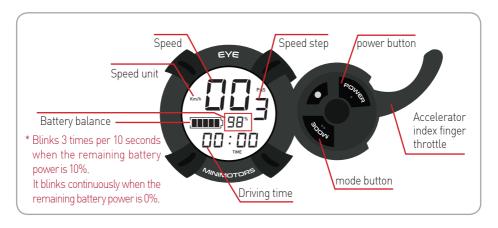
Fold the handlebar.



3. Folding handlepost

How to use the instrument panel





1) Speed step setting Can adjust with button.

selected speed step value is selected.

While the instrument panel is on, press 📶 to set the speed step. The setting is completed when the

2) Functions and settings for each main screen mode Can adjust with button.





Mode	Discription		
TRIP	Current mileage(Press and hold ● button to reset to '0')		
OD0	Accumulated mileage		
CHA	Not use		
VOL	Current voltage		
TIME	Drived time		

3) Instrument panel detailed function

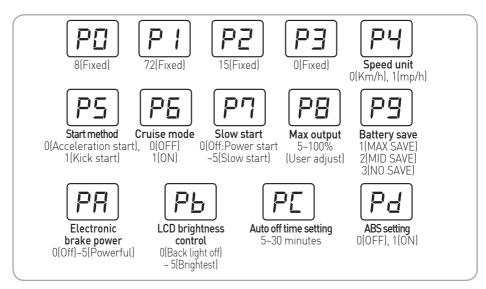
You can change the setting mode by turning on the power of the dashboard and

In the setting mode, press once to change the internal setting value

* If you change the default setting values P0 (8), P1 (48/52)(It depends to the scooter battery), P2 (15), P3 (0), correct information will not be displayed.



Setting value



4) Features of cruise mode (automatic driving)

The cruise control function allows you to maintain the driving speed automatically. Take advantage of cruise features, The advantage of being able to reduce fatigue when traveling long distances and to increase mileage of driving due to constant speed driving.

(1) The start of the cruise function

Select the Cruise function section of the dashboard as 'Settings' and set the throttle to the same Acceleration. The cruise function will start.

(2) End of cruise function

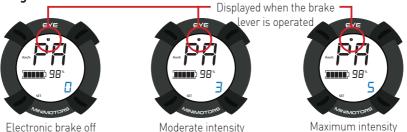
When you hold and release the brake while cruise mode is in effect, the cruise mode is automatically released.

Precautions when using the cruise function

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- 1. In case of cruise function, please ride in a position where brake can be used immediately so that cruise function is canceled and braking is possible in preparation for safety situation while driving.
- 2. It is permanently dual drive mode and can be released via throttle and brakes.
- * It is not recommended that cruise function is disabled via the throttle.

5) Setting of Electronic brake



How to use the instrument panel **ACAUTION**



* Precautions when using electronic brake after a full battery charge **ACAUTION**

The electronic brakes do not operate when the battery is fully charged, so be sure to check and operate this device. When the battery is used a little, the electronic brake will operate normally.

6) ABS function setting guide

All electric scooters are subject to sudden braking, causing the wheels to stop spinning (Tire Lock). As a result, the slip of tire can cause the driver to fall down, which can cause accidents. This product is equipped with ABS brake function to reduce the tire lock, enabling more secure braking.





ABS OFF

ARS ON

(1) ABS function ON

Set the ABS function part Pd of the dashboard to 1.

(2) ABS function OFF

Set the ABS function part Pd of the dashboard to 0.

* If Pd - ABS function 1 (ON), PA - electronic brake function will operate maximum,

when the ABS function is disabled, the previously set electronic brake actuation value is applied.

* ABS brake is an abbreviation of Anti-Lock Brake System. It uses the principle that maximum static friction force is larger than kinetic friction, so that braking distance (distance from breaking to stopping) is shorter than that of normal brake. It has the advantage that the vehicle does not slip well when wheel is rotating, and it is a brake assist system that can stop more safely without wheel lock and slip.

* Precautions when using the ABS function



ABS has the advantage of being able to stop at the shortest braking distance that can be obtained from the tires and road conditions.

However, due to the principle of repeatedly holding and releasing the brake several times in a second, a lot of vibration occurs in the motor and the body.

Repetitive vibration caused by this may cause frequent loosening of the motor, rim, fixing part, and body fixing bolt.

7) Self-diagnosis through dashboard



Fault type	Diagnosis	Solution	
2	System error	* If the error information appears, immediately stop using the product and take the scooter to the service center before use. Excessive use can result in damage to the product and safety accidents.	
4	Motor error		
6	Accelerator error		
6	Controller error		
688	None		

- * The number 🕕 is displayed when the cruise function is executed at a constant speed,
- * The number 3 is displayed when the brake lever is operated. (When the indicator lights, the accelerator does not operate.)

How to use a charger correctly

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1) Basic charging method

1. Open the chargingport cap and connect it to the connector of the charger and connect it to the household outlet









- 3. Be sure to close the chargingport cap when driving or storing except when charging.
- 4. When connecting the connector to the charger port, there may be metallic sparks due to voltage difference, but this is normal.

2) Basic charging method * Failure of the charger and abnormal conditions can cause electric shock and fire. Learn the correct usage and prevent safety accidents in advance.

1. Manufacturers and sellers are not responsible for any problems arising from any disassembly, modification, or mixing with other chargers.



2. The charger is forbidden to be used in places subject to high humidity, heat, flammable materials, confined spaces, or where there is no ventilation such as in a car.



3. The charger is not waterproof. It is thoroughly controlled to prevent § moisture from entering the charger.



4. Children and pets should not be allowed to approach the charger when they come into contact with them, as they may cause an electric shock.



5. If the charger lamp does not light, charger fall down, strong external shock, long time charge, or cable cover damage, discontinue use immediately and contact the service center



6. Unplug the charger when you are away from the home for long periods.



WARNING

- 7. Use only genuine charger.
- 8. Do not insert conductors into the charging port.
- 9. Do not touch the plug for about 10 seconds after unplugging the charger. There is a risk of electric shock from instantaneous discharge.
- 10. Do not remove the terminal during charging. Otherwise you may charge the internal circuit of the charger and cause malfunction.
- 11. Do not operate the product during charging.
- 12. Charging terminals should be firmly contacted during charging and should not be used if terminals are corroded or damaged.
- 13. When disconnecting the charger from the product, it is safe to hold the terminal without holding the wire.
- 14. Be sure to keep the charger disconnected from the product after the charging is complete. The charger must be disconnected if it is not used for longer than a few days, as there is a risk of overcharging when charging more than the time indicated on the product specifications.

Safety precautions for Lithium battery

- 1) Care Lithium batteries should be protected from direct exposure to children and pets.
- **2) Performance** 1. Lithium battery is affected by external temperature. In the winter, when the temperatures are low, the performance of the battery may be temporarily deteriorated and the mileage and power output is reduced.
 - 2. Lithium battery has a characteristic that discharge performance is reduced by more than 15% when charging / discharging 300 times or more. If usage time is shortened due to long usage, it should be replaced with a genuine one through the nearest point.



- 3) Charging 1. Lithium battery should be used only with genuine battery and charger supplied from the manufacturer. Any problems caused by use of battery made by the manufacturer, mixed use, or using the charger are not covered by the manufacturer.
 - 2. Charging the lithium battery with a non-genuine charger may cause malfunction or fire.
 - 3. The lithium battery should be charged in a well-ventilated, dry place and around the charger in a place where there is no flammable material.
 - 4. Lithium battery should be charged at $0 \sim 45$ °C and discharged within -10 ~ 60 °C. Charging or discharging at a temperature outside this range may cause malfunction, fire or explosion.
 - 5. In case of moving from cold outside to warm indoor, please charge it after 1 \sim 2 hours.

This is to prevent condensation from occurring inside the product due to the temperature difference.

- 4) Storage 1. Lithium batteries should be kept away from snow, rain and direct sunlight.
 - Do not store or charge them in a trunk or hot room.
 - Select a dry place and store at room temperature $(10 \sim 20 \,^{\circ}\text{C})$.
 - 2. When storing for more than 3 months, charge the remaining battery level to 70 ~ 80% (do not store full charge).
- **5) Trouble symptom, safety** 1. Lithium battery should be discontinued immediately if it is damaged or there is leakage of battery, sour odor, appearance deformation, etc. Please contact the place of purchase to get technical support and service.
 - 2. If overheat, smoke, or ignition is detected in a product with lithium battery, immediately stop charging and use, move the product outdoors as soon as possible, and then use a fire extinguisher to extinguish flames. Do not spray water or immerse the product in any situation, which can lead to more danger.
 - 3. Lithium battery pack has very high energy density, so if you charge the battery for a long time and there is a case of short-circuit, leakage, bad battery, etc., it can lead to ignition.
 - Therefore, you should avoid charging for a long time without a person being present to avoid the risk of unexpected fire.
- 6) Misuse If the lithium battery is short-circuited, the polarity is changed, or if the battery is impacted, malfunction or fire may result.
 - If you think that the battery has been impacted, you should stop charging and using it and visit the nearest service center for inspection.
- **7) Water inflow** It should be controlled to prevent water inflow into the lithium battery.

 There is a risk of fire or electric shock if the charger is connected while moisture is present.
- **8) Caution** Disconnect the battery from the main unit except when recharging and reinstalling. Do not use for any other purpose.
- **9) Disposal** When disposing of the lithium battery, the battery should be separated from the product at the point of purchase or near the service center and the charge and discharge terminals are not short-circuited. Dispose of it as industrial waste.



Battery disassembly prohibited

Battery disassembly, modification, and repair are not covered under warranty.

1) Required to check before using

1. Check throttle and handle

- Operate the accelerator throttle lever about 2~3 times to check whether it returns to the home position.
- Be careful that excessive throttle leaning and manipulation of the throttle can cause malfunction due to internal parts damage.



2. Check brake and cable

- The brake braking force is sufficient to check the operating condition. If the braking force is significantly lowered, use it immediately after inspection and action.
- Check that the brake pad is not worn, that the cable is not loose, that the cable is not damaged, and that there is no leakage in the case of hydraulic brakes.
- If there is an unusual feeling or noise during operation, check for breakage, wear, and deformation of the inner wire of the brake cable.





3. Check tire pressure and abnormal tread wear

• Check the front and rear tires for wear and punctures and check the value marked on the surface of the tire.



• It is necessary to judge the replacement time by observing the appearance of the tire such as tire damage, uneven wear.



4. Tightening check such as folding part and handle part

- Make sure that the bolts and nuts of all parts of the product are tight and safe from loosening. Check the fastening condition and clearance of the folding and fixing parts of the handle
- Check that the fixed shaft is working smoothly and check that it is correctly positioned where the fixed shaft and the body are in contact before use, and check the deformation of the connecting part and the related parts. If there is any abnormality, stop using it immediately and use it after inspection.



* In these cases, stop driving immediately.

If you encounter any of the following situations while driving, stop driving immediately and contact your nearest branch or service center for proper measures.



If you provide pictures and videos to get an accurate diagnosis, professional counseling is available.

Abnormal noise is generated

Product smoke, ignition, sour odor

- Unusual heating of the motor
- Brake braking status error
- Error messages on the instrument panel

- When the throttle is not returned to its original position When other driving is judged to be unreasonable
- When the battery doesn't fully charge and shorter riding distance after a full charge (Battery explosion may cause due to faulty battery cell or battery cell breakdown)

When rain or wet with water or in a similar situation

2) Maintenance and self-maintenance

Electric products can be damaged by various factors.

The life span of each part varies depending on driving habits and driving environment.

Parts that exceed the service life may cause accidents, Let's manage various parts and prevent safety accidents in advance.

1. Check the replacement timing of consumable parts

① The components and suspension parts of the tires, tubes, wheels, bearings, headset bearings, discs, brake pads, cables and folding parts, various brackets and other consumable parts require periodic inspection and must always be checked.

Parts Replacement Schedule						
2	SPEEDWAY MINI4 PRO					
1	No	Parts name	Replacement cycle / km			
T	1	HANDLE T BAR	2YEARS / 5,000			
	2	STEERING TUBE	2YEARS / 5,000			
0 -2	3	FOLDING JOINT	2YEARS / 7,000			
	4	FOLDING MOUNT	2YEARS / 7,000			
③inside	5	FRONT SUSPENSION FORK ASSY	2YEARS / 7,000			
5	6	REAR SUSPENSION ARM	2YEARS / 10,000			
inside 6	7	BATTERY	2YEARS / 20,000			
4 inside	8	Other chassis components	If the exterior is damaged or deformed			

Fatigue breakdown and maintenance parts may differ from the example conditions depending on the driving environment and the operating conditions.

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Also check parts other than the replacement cycle at all times to check for any signs of abnormality.

2. External damage inspection by driving environment



- Replace parts that may be damaged by the external driving environment, such as deformation of parts or tiny cracks due to pressure.
- ② If the product is exposed to strong sunlight for a long time, discoloration may occur.
- ③ In case of jumps, slight impacts such as turning, collision, etc., when driving frequently or for a long time in a poor road condition or driving for thousands of kilometers or more, fatigue breakdown phenomena may happen so please check the parts replacement schedule for each product and replace accordingly for safety.
- 4 Fatigue breakdown and maintenance parts may differ from the example conditions depending on the driving environment and the operating conditions.

Also check parts other than the replacement cycle (maintenance parts) at all times to check for any signs of abnormality.



Important notice

* Metal vibration may occur due to motor vibration and the vibration of the brake disc and pad during the load section that accelerates during driving. (About 15 ~ 30Km, different for each product)

This is a phenomenon in which all rotations (fans, automobiles, ships, etc.) are vibrating at a specific rotational frequency (rpm) rather than the product.

However, if the continuous noise or metal noise is large, there is a possibility that the disk will become bent and deformed.

- * Please note that after running, there is a risk of burns due to the heat on the motor and brake (especially disk rotor) side.
- * Be careful that the bolts of the motor, rim, and motor shaft may become loosened due to the ABS function.
- * For inspection and repair, remove the side cover, attach the power switch, and attach it with the product's standard bolt. When tightening, carefully remove the cover of the wiring. Bolts other than the rule bolts (long bolts) can cause serious damage to the battery casing (battery cells), which can cause fire or safety accidents.
 - Folding parts and joints where movement occurs due to product characteristics can naturally damage the surface or paint surface during use, especially when operating in incorrect operation and form.

3) Maintenance by self-maintenance

1. How to adjust the brakes

Hold the brake wire end and rotate the brake adjustment nut clockwise. The more you turn, the better braking and excessive turns may cause the brake pads to come into contact with normal driving.



2. How to adjust the handlebar gap (mudu-bolt or plate bolt)

If there is a free gap on the handle, use a 2.5mm or 3mm hexagon wrench to fine-tune the adjustment bolt that is visible when the handle is folded, then extend the handle to check the free gap condition.

If there is a gap, rotate it a little until there is no gap.



* Caution: When adjusting for free gap, do not fully unfold the handle when the bolt is protruding more than necessary, and excessive coupling may cause external damage to the T-bar. This case, tighten slightly clockwise again.

If the T-bar and handlebar do not engage normally due to excessive protrusion, tighten the adjusting bolt slightly clockwise again to reduce the protrusion.



Handle not developed due to excessive loosening of adjustment bolts)



(Excessively loose adjustment bolts damage the exterior of the T bar)



(Mudu-bolt)



(Plate bolt)

Product Specification

Product Name	Futecher Gun Pro	Futecher Gun		
Motor	Max 1760W / Rated 800W BLDC HUB MOTOR	Max 1470W / Rated 600W BLDC HUB MOTOR		
Battery Capacity	52V20.8AH	48V15.6AH	Li-lon battery	
Product Weight	Around 20.8kg	Around 19.2kg	Battery weight included	
Battery Weight	Around 5.6kg	Around 4kg		
Charging Time(1.75A)	11hr+	8.5hr+	When using 1unit 1.75A charger	
Charging Time(6.5A)	3hr+	2hr+	When using 1unit fast charger(6.5A)	
Max Speed	50km/h	45km/h	75kg,fully charged,flat road.	
Mileage(ECO)	65-75km	45-55km	*Max mileage varies depending on the driving environment.	
Gradeability	Around 51%(Around 27°)	Around 35%(Around 19°)	Gradeability depends on the weight of rider, road conditionbattery condition, temperature.	
Max Load	120kg			
Folding	Handle post one touc	Handle post one touch double folding		
Unfolded Size	1040 x 545 x 1160mm		Length x Width x Height	
Folded Size	1040 x 193 x 340mm		Length x Width x Height	
Instrument Panel	EYE throttle is applied as the default option.(Bettery level, TRIP, ODO, Time, Speed display and mode change.)		Cruise / Electronic brake / Auto save function / ABS	
Controller	52V30A X 1 Power controller	48V27A X 1 Power controller		
Light	Handlebar LED lights,side cover,tail light,brake light		DC to DC converter is built in (12V 5A output) / RGB lights (remote control)	
Suspension	Front and rear suspension			
Brake	Drum b	Drum brake		
Tire	8 inch (200x50)		Pneumatic Tire (Front) Solid Rubber Tire (Rear)	
Product material	Frame and handle:Aviavion 6061 aluminum			

^{*}The specification can be changed by manufacturer without notice to improve the quality and safety for users.

^{*}The distance can be affected by loaded weight, wind direct (wind speed), road condition, slope and tire condition.

MEMO

FUTECHER GUN Electric Scooter User Manual

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www.dual-tron.com

