### **Company Introduction**

Minimotors Co. LTD., is a company who manufacture and distributepersonal mobility with a professional production system since 1999.

Minimotors Co. LTD., has been making the electric mobility brand ←DUALTRON→ to meet the world people with the aim of making more innovative, more sensuous, and more convenient personal mobility from 1999 to the present and making a product that is loved by people in the world. Minimotors Co. LTD., Is doing its best to become the world best electric mobility company.

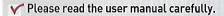


### **Brand Introduction**

The 'SPEEDWAY' brand is a world-class luxury brand produced and designed directly by MINI Motors.

'SPEEDWAY' is easy to carry and developed for urban lifestyles. It has a wide user base since its launch in 2014, and it is a brand of life electric scooter that is steadily loved and innovated repeatedly





Do not use the product until you understand its functions. Do not rent the product to anyone who can't operate the product.

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

### Speedway5 user manual contents



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### **Before Reading Manual**

This manual contains important information to help you to 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 result of serious injury.



Warning: Indicates a potentially hazardous situation that could be a result in light injury.



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

# General safety guidelines and restrictions/!



### 1) Safety guidelines and restrictions

✓ Please read this manual carefully before using this product

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



#### 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.



### 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.



#### 6. Comply with the related laws

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.



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

encouraged to use at low speed

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 vour feet.



#### Do not accelerate downhill

7. Beginners and seniors are

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 gradeability is 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.

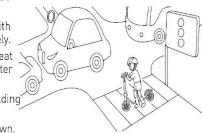


#### 12. Be sure to wear safety equipment

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 hills that 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 to hold 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.
- 10. Be careful that there is a risk of burns due to heat from motor and brake (especially disk rotor) after
- 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.



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### **Product components**



### Check the contents of the package

Upper: Protective Styrofoam, basic tool Bottom: Products, Default battery charger (1.7A)

### **Product size**



\* Errors may occur depending on the measurement method.

### Make a note of the serial number. -



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 office situation.)

### Assembling of the instrument panel, brake

[Tool: 3mm, 5mm hex wrench]



-Adjust the position of the headlight and tighten the fixing bolts with a hexagon wrench.



-Locate the instrument panel and tighten the fixing bolts with a hexagon wrench.



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

### Name of each part

Brake lever (+Electronic brake

Handle



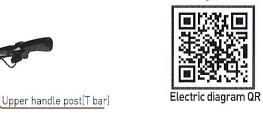
Head light button Direction indicato button Riding mode Horn buttn

Upper handle post[T bar] Motor system

> \* You can download the electric wiring diagram by scanning QR.

\Handle grip





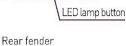
QR lever (Height fixing lever)

Lower handle post (Steering tube)

Front lamp

S button lever(Folding fixing device)

Logo mood light



Charging port

Headlight

Front fender

Front suspension

Front motor

Front, rear 10" tubeless tire

Rear light(Brake light)

Rear suspension

Rear motor

Rear side lamp

Side stan

### How to use the product

### 1) Productunfolding





#### Step1. Turning on the main switch

If the headlight button is pressed before the product is turned on, the instrument panel will not turn orpanel for 2 seconds to turn on the instrument In this state, it is designed not to start. (Built-in shorttime 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.



### Step 2. Turning on the instrument panel

Press the POWER button on the instrument panel. You can set the start mode, cruise mode, electronic brake, and ABS function...



Things to check before power on Before turning the product on, turn on the power with the LED lamp button turned off.



### Step4. Acceleration and deceleration

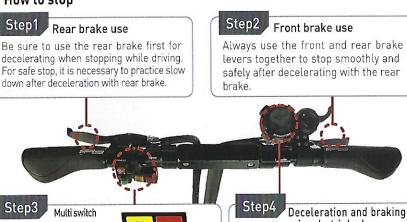
Acceleration can be performed by using the throttle of the instrument panel while driving, and the deceleration or stop can be performed by holding the brakes on the handle.

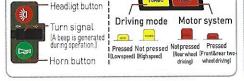
Make sure that the folding lock is firmly locked (S) before driving and push the handle until it clicks. is fastened well. And check the position of the fixing slide, the QR lever locking Caution status and the folding part fixing status.

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, holding 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, and breakage of the spring. Do not bounce the throttle lever strongly.



### 3) How to stop





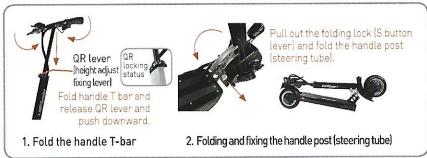
using electric brake

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.

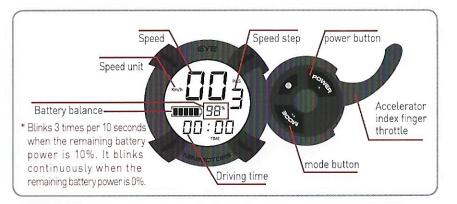
### 4) Product folding



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### How to use the instrument panel





# 1) Speed step setting Can adjust with button.

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

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



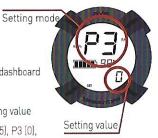
Mode	Discription		
TRIP	Current mileage(Press and hold ● buttor reset to '0')		
ODO	Accumulated mileage		
CHA	Not use		
VOL	Current voltage		
TIME	Drived time		

### 3) Instrument panel detailed function

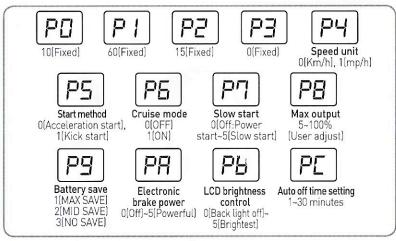
You can change the setting mode by turning on the power of the dashboard and pressing for 2~3 seconds.

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

\* If you change the default setting values P0 (10), P1 (60), P2 (15), P3 (0), correct information will not be displayed.







- 1. Displaying speed unit selection P4: 0 (Km/h), 1 (mp/h)
- 2.Start method selection P5: 0( Acceleration start), 1 (Kick start)
- 3. Cruise mode selection P6: 0(Off), 1(On)
- 4. Slow start P7: 0 [Slow start off: Power start] ~ 5 [Slow start]
- 5. Battery save mode P9: 1 (MAX SAVE), 2 (MID SAVE), 3 (NO SAVE)
- 6. Electronic brake setting mode PA: 0 (Electronic brake off) ~ 5 (Strongest)
- 7. LCD brightness adjustment Pb: 0 (Backlight off) ~ 5 (Highest illumination)
- 8. Auto off time setting PC: 1 ~ 30 minutes

### 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

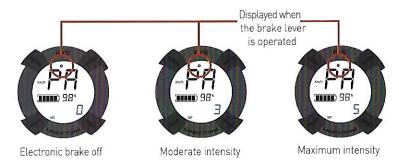
- \* In case of cruise function, please ride in a position where brake can be used immediately so that cruise function is canceled and braking is possible in preparation for safety situation while driving.
- \* When switching from dual drive mode to single mode in cruise mode, it is not possible to cancel cruise mode by using throttle and it is only possible to release by braking.

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Setting mode

### How to use the instrument panel

### 5) Setting of Electronic brake





### \* Be careful of slip during use electronic brake

Please be careful of safety accidents as the two-wheel drive system may cause slip by operating both front and rear electronic brakes at the same time.

\* Precautions when using electronic brake immediately after full battery charge The electronic brakes do not operate when the battery is fully charged, so be sure to check and operate this device. When the battery runs out, the electronic brake will operate normally.

### 6) Self-diagnosis through dashboard



Fault type	Diagnosis	Solution	
0	System error	* If the error information	
0	Motor error	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	
6	Accelerator error		
6	Controller error		
000	None	accidents.	

- \*The number is displayed when the cruise function is executed at a constant speed.
- \* The number 6 displayed when the brake lever is operated. [When the indicator lights, the accelerator does not operate.]

### How to use a charger correctly



### 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.



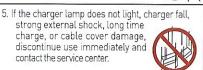
- (Green) Charging complete 3. Be sure to close the chargingport cap when driving or storing except when charging.
- 4. When connecting the connector to the charging port, metallic sparks due to voltage
- difference may be splashed, but this is normal
- 2) How to use a charger correctly \* Failure of 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.



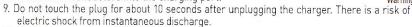
4.Children and pets should not be allowed to approach the charger when they come into contact with them, as they may cause an electric shock.



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



- 7. Use only genuine charger.
- 8. Do not insert conductors into the charging port.



- 10. Do not remove the terminal during charging. 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.
- \* Short-circuit Caution: Be careful not to short-circuit the battery because short-circuiting of the battery is very dangerous.
- \* Overcurrent Note: The battery of this product is designed to automatically shut off the power supply to protect the battery when the over current is over 210A.
- \* Low Voltage Caution. The battery of this product is designed to be automatically shut off when Caution

the voltage drops below 44V. Do not use the product in the low voltage state.

### Safety precautions for Lithium battery

- 1. Care Lithium batteries should be protected from direct exposure to children and pets.
- Performance ① Lithium battery is affected by external temperature. In winter, when the temperature is low, the performance of the battery is 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 inflammable material.
- ⓐ Lithium battery should be charged at  $0 \sim 45$  °C and discharged within  $-10 \sim 60$  °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 ~ 2 hours. This is to prevent condensation from occurring inside the product due to 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°C)0
  - (2) When storing for more than 3 months, charge the remaining battery level to  $70 \sim 80\%$  (do not store full charge).
- 5. Trouble symptom, safety① Lithium battery should be discontinued immediately if it is damaged or leakage of battery, sour odor, appearance deformation, etc., and 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 evolve. Do not spray water or immerse the product in order to evolve, which is more dangerous.
- ③ Lithium battery pack has very high energy density, so if you charge the battery for a long time in case of short-circuit, leakage, bad battery, etc., there is a possibility of ignition. Therefore, you should avoid charging for a long time without a person, and charging must be done while the person is aware that the risk of unexpected fire can be avoided.
- **6. Misuse** If the lithium battery is short-circuited or 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 point 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 and prohibit recharging, reinstalling, or using other applications.
- 9. Disposal Disposal When disposing of the lithium battery, the battery should be separated from the product at the point of purchase or near the point so that the charge and discharge terminals are not short-circuited. Dispose of it as industrial waste when disposing of it.



### Battery disassembly prohibited

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

## Safety guidelines before driving



### 1) Required checking before use

#### 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.
- Check the fastening condition and clearance of the QR lever on the handle.



#### 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.
- If there is an unusual feeling or noise during operation, check for breakage, wear and deformation of the inner wire of the brake cable.
- Check that the bolts and nuts of the brake fixing parts are not loose, and that the disc is not deformed or damaged.





#### 3. Check tire pressure and uniaxial condition

- Check the front and rear tires for wear and punctures and check the proper air pressure (45 to 50 psi) for the tire. When the shortage of air is shortened, the possibility of puncture increases, so check always.
- 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 free from loosening. Check the fastening condition and clearance of the folding and fixing parts of the handle (QR lever, fixed shaft).
- \* 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 this case, 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 accurate diagnosis, professional counseling is available..

- Unusual heating of the motor
- Brake braking status error
- Error messages on the instrument cluster
- When the throttle is returned to its original position
- When the throttle is returned to its original position
- abnormal noise is generated
- Product smoke, ignition, sour odor
- When rain or wet with water or in a similar situation.
- When other driving is judged to be unreasonable

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#### 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 car swing arm, tires, tubes, wheels, bearings, headset bearings, discs, brake pads, cables and folding parts, various brackets and other consumable parts requiring periodic inspection and always check.

Fatigue failure par	ts and m	naintenance parts replacement cyc	e
	SPEEDWAY V		
	No	Parts name	Replacement cycle / km
<b>D</b> -0	1	HANDLE T BAR	2YEARS / 5,000
У	2	STEERING TUBE	2YEARS / 5,000
4	3	FOLDING FRAME	2YEARS / 10,000
<b>(1)</b> -2	4	FOLDING MOUNT	2YEARS / 5,000
/inside / @inside	5	FOLDING LOCKING SET	2YEARS / 3,000
inside	6	FRONT SUSPENSION BOARD	2YEARS / 10,000
® inside	7	FRONT SUSPENSION	2YEARS / 7,000
( ) inside	8	REAR SUSPENSION ARM	2YEARS / 10,000
4 inside	9	BATTERY	2YEARS / 20,000
inside	10	Other chassis components	If the exterior is damaged or deformed

#### 2. External damage inspection by driving environment

- ① Replace parts that may be damaged by external driving environment, such as deformation of parts, cracks due to compression, and signs of exceeding fine gold or life expectancy.
- ② If the product is exposed to strong sunlight for a long time, discoloration may occur.
- 3 In case of heavy driving such as normal 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, fatique breakdown phenomena Please check and replace the parts replacement schedule for each product 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, 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 revolutions (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 is 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.

### Important checklist



### 3) Maintenance by self-maintenance (Tool: 3mm, 5mm hexagon wrench)

#### 1. Brake adjustment method

Hold the brake wire with the long nose and use the hexagon wrench to unscrew the brake arm wire fixing bolt and lift the brake arm upwards to narrow the braking distance and to better catch the brake.

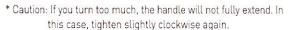
If you hear a sharp hissing sound when you hold the brake, dust or sand particles on the ground will spill out on the surface of the brake pad, the surface of the disc, or warping due to heat or external impact. At this time, clean the inner surface of the disc



by turning the wheels with a clean, dry cloth, or straightening the bent discs.

#### 2. How to adjust handle bar clearance

If there is a gap in the handle, turn the 1/4 turn counterclockwise using a hexagon wrench to check the tucked bolt when the handle is folded, then test it by unfolding the handle.





### 3. How to check the folding lock device (S button lever)

Make sure that the folding lock (S button lever) is fully inserted with a clicking sound. Check the fastening condition of the bolts and nuts of the near fixing parts.

\* Caution: If folding lock device (S button lever) is not inserted correctly, it may cause damage due to folding parts or collision.



(Unlocked status)



(Locked status)

### Easy-wheel system



\* Completely separable hub motor design By designing the rim and hub motor to be completely separable it is possible to replace only the rim without replacing the entire motor when the rim breaks, thus improving the maintenance and maintenance of the product. (Patent pending)

# **Product Specification**

Product Name	Speedway5	SPEEDWAY
Motor	MAX 3600W BLI	OC DUAL HUB MOTOR
Battery type	Li-lon battery pack	
Battery capacity	59.2V 23.4Ah	
Charging time (1.7A)	13hr+	When using standard charger(1.7A)
Charging time.5A)	3hr+	When using quick charger(6.5A, option)
Max mileage	120km	75kg load, 25km/h flat road continuous riding basis
Max Speed	60~65km/h	Speed adjustment function on the throt- tle display. Single, Dual mode seletion on the handlebar.(Single, Dual motor selec- tion function)
Folding	One touch quick folding	
Gradeability	Around 37%	Weight, road condition, battery status, tem- perature can affect to the gradeability
Max load	100kg	
Product weight	Around 30.84kg	
Unfolding size	1220 x 575 x 1180mm	Length x Width x Height
Folding size	1250 x 250 x 400mm	Length x Width x Height
Instrument panel	Multifunction smart LCD instru- ment panel (Bettery level, TRIP, ODO, Time Speed display and mode change.)	Cruise / Electric brake / Auto save function(3minutes)
LED Light	Dual LED headlight, front light, taillight, brake light are built in	DC to DC converter is built in(12V 3A output)
Brake	Disc brake and front and rear elextric brake	Common use for front and rear wheel
Suspension	Air suspension	Basic: Motor shaft distance 3 steps, arm angle 3 steps Option - Separate purchase] Rubber elastic 5 Steps exchange
Tire	10inch tubeless tire(Air pressure 45~50psi)	ALARY 1/8 MOSTALING CONTROL OF INPRO-
Product material	Frame and handle: Aviavion aluminur	m forging alloy, 6063, 6082, Shaft: SCM440, Polypropylene

<sup>\*</sup>The specification can be changed by manufacturer without notice to improve the quality and safety for users.

Memo



**MEMO** 

<sup>\*</sup>The distance can be affected by loaded weight, wind direct (wind speed), road condition, slope and tire condition.