

SUNRUNNER[®]

APT[®] Power Assist Folding Electric Bicycle

USER MANUAL

Model: SFB-18



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Introduction

Thank you for purchasing the *SUNRUNNER*[®] *APT*[®] Power Assist Folding Electric Bicycle (hereinafter referred to as “E-Bike”) tactfully designed and manufactured by PIHSIANG MACHINERY MFG. CO., LTD. (hereinafter referred to as “PMMC”).

The user’s manual contains all kinds of important information concerning the operation and the safe use of your E-Bike. Please read this manual carefully and thoroughly before riding your E-Bike and make sure that you have learned all the instructions of the E-Bike. If you have any queries about the spare parts for the maintenance or any other concerns of your E-Bike, please contact your authorized dealer for assistance.

Features



1. Saddle
2. ON (I) -OFF-ON (II) Switch (Main Switch)
3. Battery Gauge
4. Handle
5. LiFePO₄ Battery Case (w/ Light)
6. Controller (w/ Light)
7. Tire
8. Spoke
9. Rim
10. Pedal
11. Kickstand
12. Hub Motor Assembly
13. Chainwheel Assembly
14. Gear-shift Handle
15. Derailleur (Shimano Inter-3 Gear)

※ *SUNRUNNER*[®] is a registered trademark of the PMMC products.

※ *APT*[®] is registered for “Advanced Power Technologies” developed and owned by PMMC.

Safety Warnings

1. Do not operate the E-Bike before reading this user manual thoroughly.
2. Do not disassemble the battery case and modify the unit without PMMC written approval, or your warranty will be void and you will be responsible for the modification.
3. Front basket is optional, and the maximum load for the basket is 2 kgs.
4. Check the tire pressure of front and rear wheel to be around 50PSI (or 3.5bar) before riding.
5. Make sure that the battery has been fully charged before use, and remove the charger after fully charged.
6. Check all electrical connections and mechanical parts are securely locked and fastened before using your E-Bike, and check all cables, connector plugs and sockets must be dry and undamaged.
7. The E-Bike is not recommended for competition, stunt, any aggressive or off-road riding.
8. The performance and mileage of the unit will be varied with the battery condition, temperature, terrain, wind speed, tire pressure, rider weight and the maintenance, etc.
9. The E-Bike is able to sense your feet's force on the pedal to provide you the assist power once you ride it. Before you depressing pedal on the E-Bike, please ensure ahead of the road is clear.
10. Adjust the height of the saddle to fit your body size. Take heed of the maximum height markings on the post of the saddle. Your authorized dealer will give you assistance if requested.
11. Refer to the instruction sheet of the SHIMANO Inter-3 Gear to switch 3 stages of gears for a more comfortable riding at different slopes.
12. Always consult your doctor for advice on your physical condition and follow your country's traffic rules while riding.
13. Make sure that your dress and shoelaces must be secured from involvement to moving parts of the E-Bike while riding.

User Guidance

10 stages power assist output adjustment

1. Depress the pedal against a wall.
(Do not grab the front or rear brake lever while depressing the pedal.)



2. Then, press the main switch to either left (I) or right (II) position while depressing the pedal.



3. After 10 seconds, the light of controller will flash as below.

The 1st flash means the 1st stage.

The 2nd flash means the 2nd stage.

:

:

The 10th flash means the max. (the 10th stage) output from the controller. Release the pedal at once after selecting your desired stage.



Note:

- ※ It's recommended to set up at the 1st stage if riding on level ground frequently to save battery charge.
- ※ It has been set up at the 10th stage for the default setting on your E-Bike.

The operating instructions of derailleur (Shimano Inter-3 Gear)

The E-Bike is equipped with the Shimano Inter-3 (3-speed gear shifting) at the rear wheel axle. It is easy to change the gear ratio by shifting the gear-change handle while riding.

Handle position	Riding Gradient	Speed / Gear Ratio
3	Level road	High
2	Level road with a slight slope	Middle
1	At a moderate gradient	Low (To save your energy while climbing a slope)

If the derailleur can not be performed with its intended function, please contact your authorized dealer for adjustment. To shift the derailleur, the steps as blow should be followed.

1. Stop pedaling to be ready for shifting the gears while riding.
2. Only shift one gear one time while switching the gear-change handle.
3. Start pedaling for your riding.

Note : If you shift the gears without stopping pedaling, a clash may be heard due to gears shifting over dynamic moving parts.

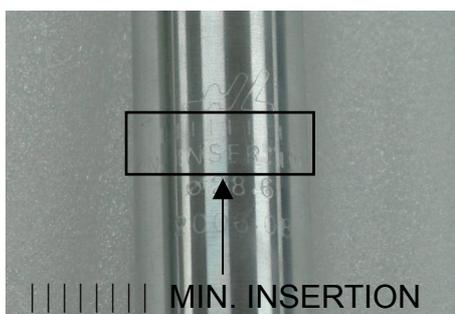
Adjust saddle height



1. Loosen the clamp lever



2. Adjust the seat post to the desired position.



3. Take heed of the maximum height markings (MIN. INSERTION) on the tube of the seat.



4. Tighten the clamp lever.

Regular check for safety before riding :

1. Check Tire Pressure :

Check the tire pressure of front and rear wheel to be maintained at 50PSI (or 3.5Bar).
Check if the tread of tires with excess worn out should be replaced.

2. Check Power Assist :

The power assist will be cut off when one of handbrakes is engaged or the pedaling is stopped.

3. Check Battery :

Check if the battery case fits into the battery holder firmly and the LED Light of the battery case is lightened up when the main switch is on at the II position.

Check if the battery is fully charged before use.

4. Check Motor and Control System :

Must check the motor and control system are performed well.

5. General Inspection :

Check if any of brake shoes with excess worn out should be replaced.

Check if the braking function is performed well.

Check if the front and rear wheels are performed smoothly.

Check if all connectors on E-Bike are firmly secured without any damage.

If you have any questions after checking, please refer to the solutions for trouble shooting (page 16) or contact your authorized dealer for inspection and maintenance.

Cautions for Riding :

- Always follow the county's traffic rules while riding.
- Check the battery gauge if the charge is sufficient to keep the power assist for your riding.
- Do not keep riding your E-Bike if any problem is occurred, and then refer to the solutions for trouble shooting (page 16) or contact your authorized dealer for further inspection and maintenance. Ensure to use the spare parts supplied by PMMC for replacement.

Other Keys to Lifespan

The lifetime of your E-Bike will be adversely affected by exposures to aggressive road, dirt, rain, waters or salt spray. To package your E-Bike including the battery case with a good protection for transportation and to store your E-Bike indoors when not in use are essential to prolong the lifespan of product.

Battery and Charging

Dismounting Battery Case

1. Before sliding out the battery case, make sure the battery holder latch is at the position as shown.
2. Switch the key to horizontal (flat) position. Depress the key to release the lock and use the other hand to push the battery case out from the battery holder.
3. Remove the battery case.



Mounting Battery Case

1. Please secure the battery case holder with one hand and slide the battery case onto the rail all the way down to lock the battery case as shown.
Note: If the battery case can be removed without depressing the key, this means that the battery case has not been properly locked. Then, please repeat the above procedures again.
2. The battery case will be locked and can't be removed when the key is in the vertical position.

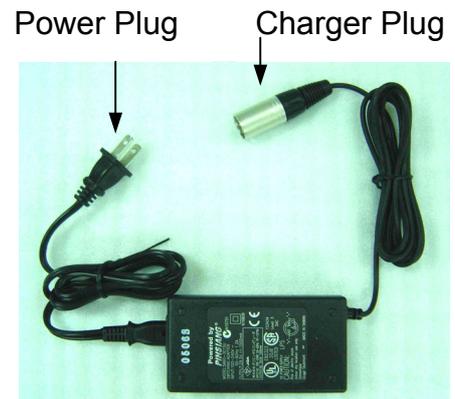


Battery and Charging

Steps to charge the Battery

1. Switch your E-Bike off on the main switch of battery case.
2. Dismount the battery case and then place it at a ventilated place to be charging.
3. Swivel the charging port cover of battery case and then connect the charger plug of the charger.
4. Plug the power plug of the charger into secure power source to start charging battery.

Note: Ensure that the charger plug is dry and securely connected to the charger port of battery case.



Operating Instruction

1. Must assure the input voltage is between 100V~240V.
2. Must assure the battery to be charged is a LiFePO₄ (Lithium Iron Phosphate Based) Battery Pack supplied by PMMC.
3. Make sure the power cord, battery cable, and battery terminals are in good condition.
4. Make sure the connecting battery rating is the same as the charger output voltage (24V).
5. While charging, LED will display a RED light. When the light turns GREEN, the battery is fully charged.

LED Indication

1. LED (GREEN) – Power On, when not connected to the batteries.
2. LED (RED) – Charging
3. LED (GREEN) – Fully Charged, when connected to the batteries.

Trouble Shooting

1. If the LED light is “OFF” all the time while charging:
Check if the power connections are in good condition. If the LED light is still off all the time while charging, the battery charger may be malfunctioning.
Please consult your authorized dealer for further assistance.
2. If the LED light does not switch from GREEN to RED when the charging process begins:
Check if the connection of the battery polarity is correct.
Check if the connection between charger plug and charging port of the battery is correct.
Check if the battery case is already fully charged.
Check if the battery is functioned properly.
3. The charging time continues for a long duration (Irregular):
Check if the battery is out of order or aged.
4. The battery overheats:

Check the battery specification or consult your authorized dealer. Stop charging immediately and check if there is a problem with the charger or the batteries.

Caution

1. Make sure the DC output correspondingly connected to the battery to be charged is at the rated voltage, or it may cause unexpected danger or damage.
2. For your safety, do not charge the batteries for longer than 24 hours.
3. Do not expose the charger to the rain, water or a humid place; Do not use the battery charger near flammable articles or in unventilated places.
4. For your safety, do not short circuit output plug, or it may cause unexpected danger or damage.
5. Use the specified charger only for LiFePO₄ (Lithium Iron Phosphate Based) Battery Pack (24V) supplied by PMMC.
6. Always use the battery charger and power cord supplied by PMMC.
7. Before plugging in the power cord of the charger, please confirm that the local power supply corresponds with the requirement of the charger.
8. The manufacturer will not be responsible for any damage or injury due to improper or unsafe use of the battery charger.

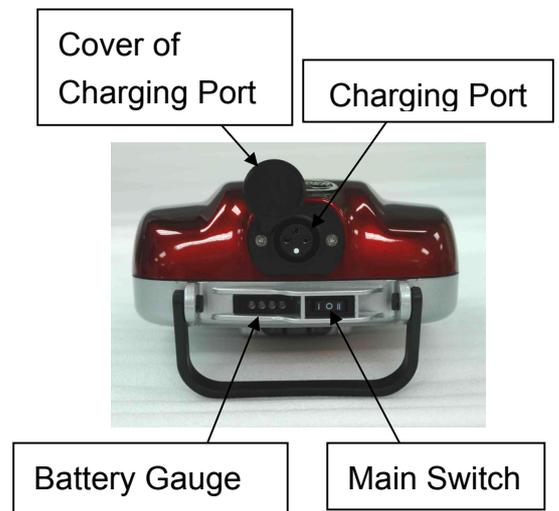
Battery Case Features

- Main Switch Function

Switch Depressed Position	Function	
I	LED Light of controller is lightened up.	Start the function of Power Assist by pedaling.
II	Both LED Lights on controller and battery case are lightened up.	
○	Power off	

The LED Light of controller and battery case utilizes the 1W Warm White LED Light which is green energy and provides moderate light in the dark.

- The battery gauge with 4 battery level indicators precisely indicate the remaining charge of the battery. As the last battery indicator light starts flashing, the rider can continue to ride the E-Bike for approx. 2KM further.
- Swivel the cover from the charging port to charge the battery. After charged fully, must swivel the cover back to the charging port to prevent water and dust from getting into the socket.
- The battery case is not allowed to be disassembled and should be prevented from dipping into water and exposing to fire.
- Portable battery case with 1.4kg weight around can be placed in a carrying bag attached with each E-Bike and may be used for individual lightening system, same as a flashlight device. With different capacity of the battery, the warm white LED light can be lasted for 3~6 days.
- The threading hole is available underneath the battery case for the connection to other devices, such as camera's stand as shown.



Warm White LED Light of Battery Case



Warm White LED Light of Controller



Battery Case mounted on camera's stand

Steps to fold the E-Bike



Refer to the instruction for Dismounting Battery Case to remove the battery case.



Loosen the clamp lever to remove the saddle.
Note: Keep the battery case and the saddle in a safe place after removed from the E-Bike.



Lower the mudguard by loosening the tighten knob.



Pull the trigger of the pedal and fold the pedal simultaneously. Repeat the same steps for the other side of the pedal.



6
Pull out the safety pin from the locking hole.



7
Fold the front & rear frame assembly as shown.



8
Insert the safety pin into the locking holes to engage the front and rear frame assembly.



9
10
Loosen and then lower the lever to retreat the pin to release the clamping of the handle bar. Keep the crank-pedals on the level while folding the handle bar. Fold the handle bar downward toward the same side of the kickstand and beyond the level of crank-pedals.

Note: Move the cables away from the quick-clamp to prevent accidental Scratch on cables while folding.



11
The folding steps are completed.

Steps to restore the E-Bike



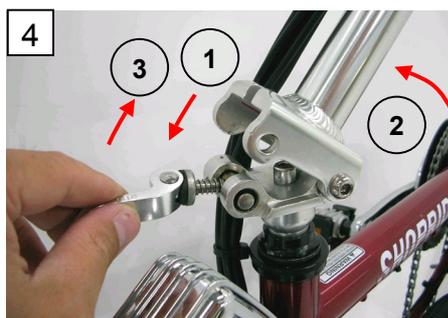
1 Remove the safety pin from the locking hole.



2 Unfold the front & rear frame assembly as shown.



3 Coincide the locking holes and insert the safety pin to engage the front and rear frame assembly securely.



4 Lower the lever by fingers as shown to retreat the pin for the engagement of the handle bar. Restore the handle bar and then heighten the lever to engage pin and slot in, and then clamp the lever to secure the handle bar.

Note: Move the cables away from the quick-clamp to prevent accidental scratch on cables while unfolding.



Adjust the tighten knob to fasten the mudguard.
Note: Follow the same steps while installing the mudguard on a new unit.



Pull the trigger of the pedal and unfold the pedal simultaneously. Repeat the same steps on the other side of the pedal.



Install the saddle and adjust it to the desired height and then tighten the clamp lever.
Note: For your safety, do not set the saddle height exceeding the bottom line on the seat post.



Refer to the instruction for Mounting Battery Case to be mounted.



The unfolding steps are completed.

Trouble shooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Battery case with a loosening issue. (such as, battery case could be removed when the key on battery case is not depressed.)	Battery case has not been totally locked onto the battery holder firmly.	Follow the instruction to dismount then mount battery case again to check if battery case can not be removed without depressing the key.
Battery gauge LEDs with no display when power on.	Battery case has a low charge or a loosening issue.	Check if battery case has been fully charged before use. To check the solution as above if the battery case has a loosening issue.
Power assist fails to perform its intended function when pedaling.	Controller may go to sleep mode to preserve battery charge after being idle for few minutes. Or, one of handbrakes fails to restore to its disengaged position.	Switch power off and then back on to remove from sleep. Check handbrakes are totally disengaged when the levers have been released.
Power assist function discontinued when riding.	Battery case with an empty charge.	As the last battery indicator light start flashing then the battery case must be recharged as soon as possible, or the power assist will be discontinued after approximately 2KM riding further.
Poor traveling range	Frequent riding on gradients, poor tire pressure, battery case with insufficient charge, or battery aging, etc.	Decrease chance to ride on gradients to check if a longer range is acquired, fill up tire pressure to 50 PSI, fully charge the battery daily after use, or replace a new battery case, etc..
Unusual motor/gear sound (noise)	Check if any foreign object existed on wheels or motor.	Clean up obstacles around the wheels and motor.

※ Note : Must use the genuine *SUNRUNNER* charger dedicated for C-LiFePO₄ Battery Case to be charged.

※ Please contact your authorized dealer if the above solution has been checked and the problem is still existed.

Specification

Model			SFB-18		
Overall Dimension	Length	mm	1385		
	Width	mm	620		
	Saddle Height	mm	688~858		
	Handlebar Height	mm	1050		
	Tire Size	inch	18"		
	Wheels Center Distance	mm	935		
Total Weight (w/o Battery Case)		Kg	17.5		
Battery	Type- <i>Envirofriendly</i> [®] , Capacity		C-LiFePO ₄ , 3.5 / 5 Ah		
	Optional (Capacity / Weight)		3.5Ah / 1.46kgs	5Ah / 1.54kgs	
Reference Range (on the level ground without wind) The output power assist from the controller can be set up from 1-10 stage for riders.		Set to the 1 st stage of power assist	85Kg (a rider's weight)	28Km	34Km
Derailleur		SHIMANO NEXUS INTER-3			
Power Assist Driving Wheel		Front Wheel Drive			
Hub Motor Model		Brush Motor with reduction gear (24 V)			
Charger	Type (Dedicated for C-LiFePO ₄ Battery)		2A		
	Charging Time		25 min~2.5 hrs		
Remarks: 1. As the last battery indicator light starts flashing, the rider can continue to ride the E-Bike for approx. 2 KM further. 2. Go-Button Kit and Throttle Handle Kit are optional. 3. The maximum weight capacity of the E-Bike is around 90 kgs.					

1. The maintenance guarantee period of this product except consuming parts begins on the day of purchase and ends at one year later. Only the original purchaser is entitled to the guarantee.
2. Performance and mileages of the unit will be varied with the factors, such as battery condition, temperature, terrain, wind speed, tire pressure, rider weight and the maintenance, etc..
3. PMMC reserves the right to revise the wording and specification of the E-Bike without prior notice.



APT[®] Power Assist Folding Electric Bicycle

DISCLAIMER

Congratulations on your purchase of *SUNRUNNER[®] APT[®]* Power Assist Folding Electric Bicycle.

This *APT[®]* Power Assist Folding Electric Bicycle is not intended to be used by individuals with physical limitations that could prevent the user from operating the *APT[®]* Power Assist Folding Electric Bicycle safely. PMMC disclaims all responsibility for any personal injury or property damage, which may occur as a result of improper or unsafe use of its products. Mechanical or electrical defects will be dealt with on a contingency liability basis.

Warranty is only valid when genuine *SUNRUNNER* parts are used. All modifications on the *APT[®]* Power Assist Folding Electric Bicycle, unless approved and authorized by *SUNRUNNER* will automatically invalidate the warranties. Standard warranty does not extend to consumable items and parties other than the original purchaser.

The preceding guidelines are intended to assist you in the safe operation of this *APT[®]* Power Assist Folding Electric Bicycle. Should you have any questions about the correct operation of the *APT[®]* Power Assist Folding Electric Bicycle, please contact your authorized dealers.

Model Name – *SUNRUNNER* SFB-18

Provider Stamp

Serial No.: _____

P/N : 300905-25