



FLEX DRIVE E MODEL 91652
12/24 VOLTS
150 - 249 WATTS

FCC FRN 0026847665



OWNER'S MANUAL

ASSEMBLY INSTRUCTIONS,
MAINTENANCE AND WARRANTY

jacksonadventures

Thank you for choosing the Flex Drive E.

Whether you are in one of Jackson Kayak's Flex Drive boats or in one of the models from Blue Sky Boatworks, this Flex Drive E and its special propellers are designed to connect with your Flex Drive lower unit to provide electric-powered propulsion. We proudly designed this unit expressly for use with Jackson Kayak and Blue Sky Boatworks models equipped with Flex Drive to provide you trouble-free service for countless adventures to come. Please read this user manual and warranty information thoroughly prior to use. And remember to register your Flex Drive online at jacksonadventures.com.

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Warranty, Service and Customer Support

The Flex Drive E is manufactured by PropEle Electric Boat Motors, Inc.

For problems with any motor head components, call **Customer Service at 425-502-5232, 9am - 5pm, Pacific Time Zone.**

You will need pre-authorization to arrange for return and repair at our factory. The authorized service facility is in North Bend, Washington. In some cases your warranty could be voided if unauthorized repairs are made.

PropEle guarantees the original purchaser that the motor head is free from material and manufacturing faults for 2 years from the date of purchase. This obligation does not cover the incidental costs of a warranty claim or any other financial losses (e.g. costs for towing, telecommunication, food, accommodation, loss of earnings, etc.).

Products that are used commercially or by public authorities are excluded from this two-year warranty. In these cases, the statutory warranty applies.

PropEle will determine whether faulty parts may be repaired or replaced. At this time, there are no authorized dealers or repair facilities other than at our U.S. factory. Unauthorized repairs can void your warranty. No other entity has the authority to make legally binding statements on behalf of PropEle Electric Boat Motors, Inc.

Normal wear and tear is excluded from the warranty. PropEle is entitled to refuse a warranty claim if:

- the product has been used improperly; for example, if the operating and care instructions in the manual were not followed, or
- the product was altered or modified, or parts and accessories were added that are not expressly permitted or recommended by PropEle.

Before returning anything, you must request a return authorization from PropEle Electric Boat Motors Inc. You can contact them by phone, email or mail:

Telephone: 425-502-5232

9am - 5pm Pacific Time Zone

Email: info@electricpaddle.com

Address: 10404 428th Ave SE, North Bend, WA 98045



**BLUE SKY
BOATWORKS**

Unpacking the Flex Drive E

The box should contain:

(A) Flex Drive E Motor Unit

If your Flex Drive system has a 3-blade prop, we recommend replacing it with one of our 2-blade props to optimize performance. If your Flex Drive system has a 2-blade 10" Pitch Pedal / 12V Prop (marked with '10 x 10') you can use that for the pedal or 12V use.

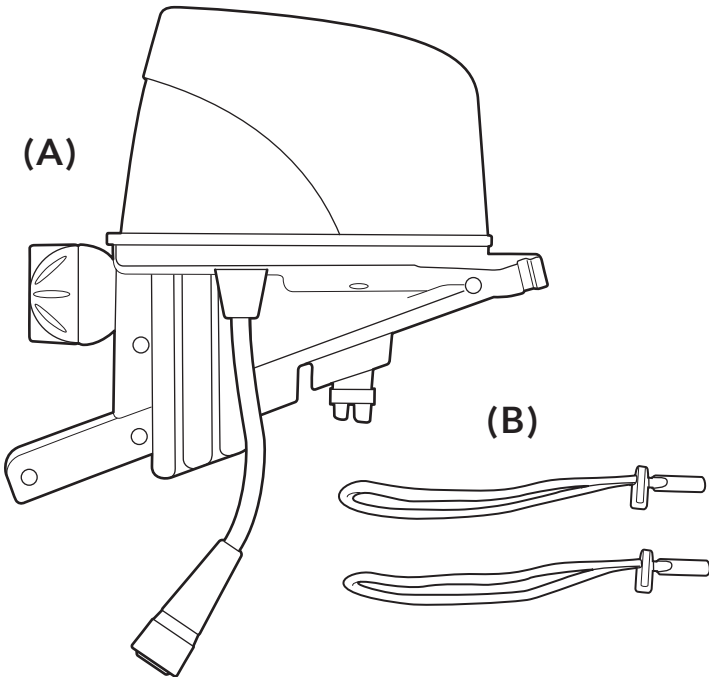
If you use 24V use the 5" Pitch 24V Prop (marked with '9 x 5') for optimal performance.

(B) Magnetic Safety Key (2)

(C) Specification Sticker Sheet (Not Pictured)

(D) Owner Manual (Not Pictured)

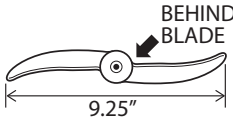
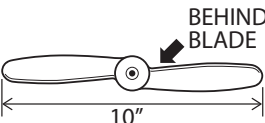
(E) Connector Cable (Not Pictured)



1. Switching Three Blade or Two Blade Pedal Drive Prop to the Proper Flex Drive E Prop.

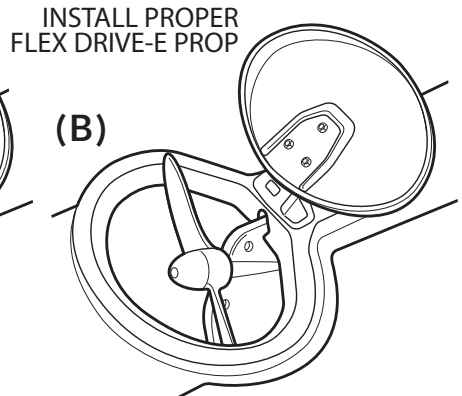
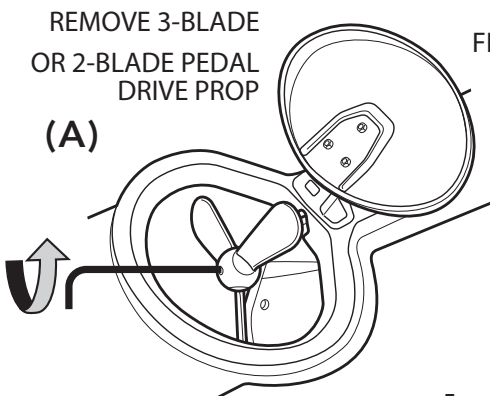
The patented FlexDrive System makes switching from pedal to electric power quick and easy. The Flex Drive E unit installs in the same coupling slots used by the pedal drive unit.

We recommend upgrading to the 10" Pitch Pedal / 12V Prop (marked with '10 x 10') for a 12V system or while pedaling and our 5" Pitch 24V Prop (marked with '9 x 5') for a 24V system.

THE RIGHT PROP FOR THE RIGHT VOLTAGE			
	FLEX DRIVE E 24V BATTERY	FLEX DRIVE E 12V BATTERY	FLEX DRIVE (PEDAL DRIVE)
LENGTH	9.25"	10"	
PROP MARKING	9 X 5	10 X 10	
DESCRIPTION	ONE PROP ROTATION MOVES THE BOAT FORWARD 5 INCHES		ONE PROP ROTATION MOVES THE BOAT FORWARD 10 INCHES
MARKING LOCATION			

To replace the pedal drive prop:

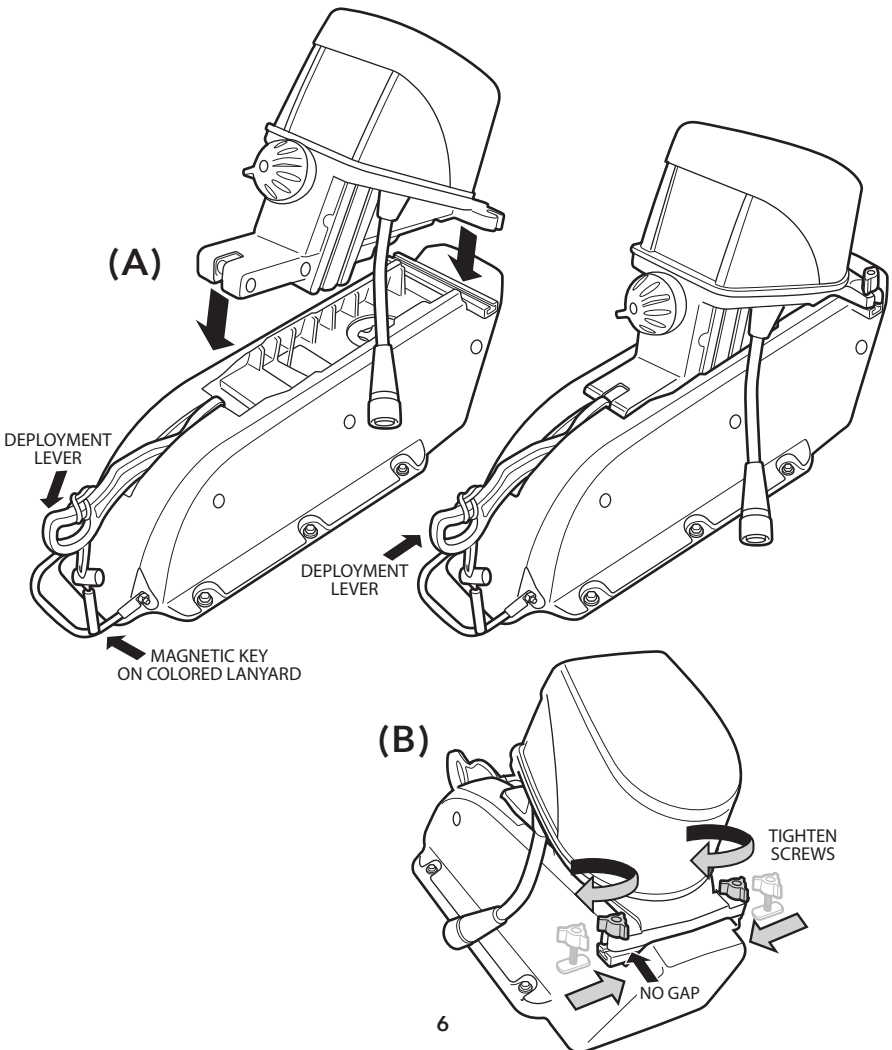
- (A) **Remove the 2-blade or 3-blade pedal prop** using an M3 allen key. Be careful as three bladed prop will come apart as it is removed from the unit.
- (B) **Install the proper Flex Drive E prop to the hub. See chart below.** Guide the prop over the drive shaft, lining up the shear pin to the mating slot in the hub. Insert screw and tighten, using a M3 allen key to tighten snugly.



2. Mounting the Flex Drive E

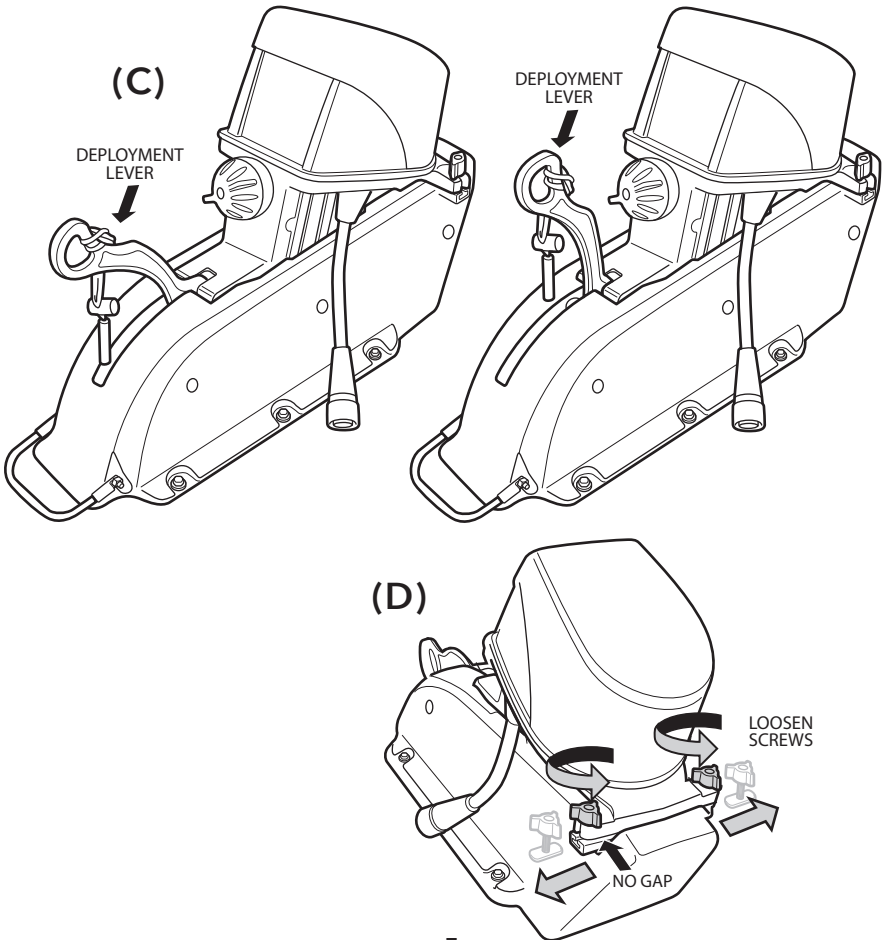
Tether the magnetic key and colored lanyard onto the deployment lever in lowered position as shown below. The key will only reach the throttle after you raise the deployment lever. This is a safety interlock feature.

- (A) Align the coupling slots of the Flex Drive E upper unit with the slots on the lower drive. Lower lever and carefully lower the unit until it is seated. The front of the motor head must sit level with the aluminum channel. If the coupling is not aligned, the motor may not function or could be damaged.
- (B) Tighten down the unit using the wing nuts. Do not over-tighten as you could crack/damage the unit.



2. Mounting the Flex Drive E (cont.)

- (C) Raise the deployment lever to engage the motor.
When the lever is in the down position the lower unit is in the up position, retracted inside the boat.
When the lever is in the middle position the lower unit is in the middle position.
When the lever is in the up position the lower unit is in the down position.
- (D) To remove the motor, make sure the lever is down, then unscrew wing nuts and lift upper unit off the base.



3. Batteries – Choice, Connections, Safety

The Flex Drive E system has 3 interrelated parts: 1) The motor. 2) Your choice of battery. 3) A prop to match your battery voltage.

As the user, you can choose which battery (purchased separately) will power your Flex Drive E. The unit is designed to run on 12 or 24V.

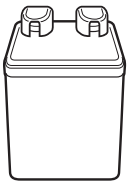
- (A)** The advantage of lithium over lead acid is more power density, lighter weight, longer lifespan and smaller size. K2 lithium batteries weigh just 6.4 pounds (9.6 Ah) or 13 pounds (22Ah).

Jackson Kayak offers two battery packages. The two kits include K2 24 V lithium batteries. (9.6 Ah or 22Ah sizes.)

- (B)** Lead acid batteries weigh as much as 60 pounds and are less expensive.

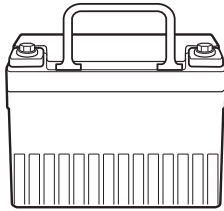
While the choice is yours, we recommend our K2 24V 22Ah Lithium Battery Kit for outstanding overall performance in a light weight, waterproof and floating all-in-one power solution. For comparison, the chart on the following page illustrates output and performance ratings under perfect conditions for five battery types.

Your Flex Drive E motor comes with a sheet of specification stickers. Choose to match your battery choice.

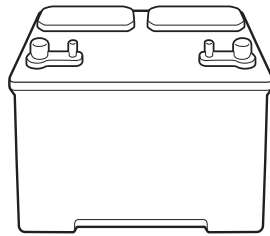


(A)

24V, 9.6 Ah
LiFePO4 Battery
6.4 lbs.



24V, 22 Ah
LiFePO4 Battery
13 lbs.



(B)

12V Marine Battery
40 - 60 lbs.

Output and Performance Ratings

BLUE SKY BOATS:

Calm conditions, 200 lb operator and 50 lbs. of gear.

							BLUE SKY WITH 24V BATTERY OPTIONS	
							22.2 Ah K2 Lithium	9.6 Ah K2 Lithium
Speed Setting	Watts: Input	Speed: MPH	Runtime: HOURS	Range: MILES	Runtime: HOURS	Range: MILES		
5	249	5.2	2.1	11	0.9	4.6		
4	125	4.1	4.3	17	1.8	7.2		
3	54	3.1	13	30	4.1	13		
2	28	2.3	22	42	7.9	18		
1	10	0.8	52	41	22	18		

BLUE SKY WITH 12V BATTERY OPTIONS								
			22 Group deep cycle AGM		24 Group deep cycle AGM		27 Group deep cycle AGM	
Speed Setting	Watts: Input	Speed: MPH	Runtime: HOURS	Range: MILES	Runtime: HOURS	Range: MILES	Runtime: HOURS	Range: MILES

5	150	4.4	2.3	10	6.1	27	7.3	32
4	58	3.2	6.6	21	17	56	21	67
3	19	1.7	23	38	60	102	72	122
2	11	0.9	40	36	107	96	128	115
1	4.8	0.4	101	40	268	107	320	128

COOSA / BIG RIG / BITE FD BOATS:

Calm conditions, 200 lb operator and 50 lbs. of gear.

								KAYAK WITH 24V BATTERY OPTIONS	
								24V, 22.2 Ah K2 Lithium	24V, 9.6 Ah K2 Lithium
Speed Setting	Watts: Input	Speed: MPH	Runtime: HOURS	Range: MILES	Runtime: HOURS	Range: MILES	Runtime: HOURS	Range: MILES	
5	249	4.6	2.1	10	0.9	4.1			
4	125	3.8	4.1	16	1.8	6.7			
3	54	2.9	10	28	4.1	12			
2	28	2.2	18	41	7.9	17			
1	10	0.8	52	41	22	18			

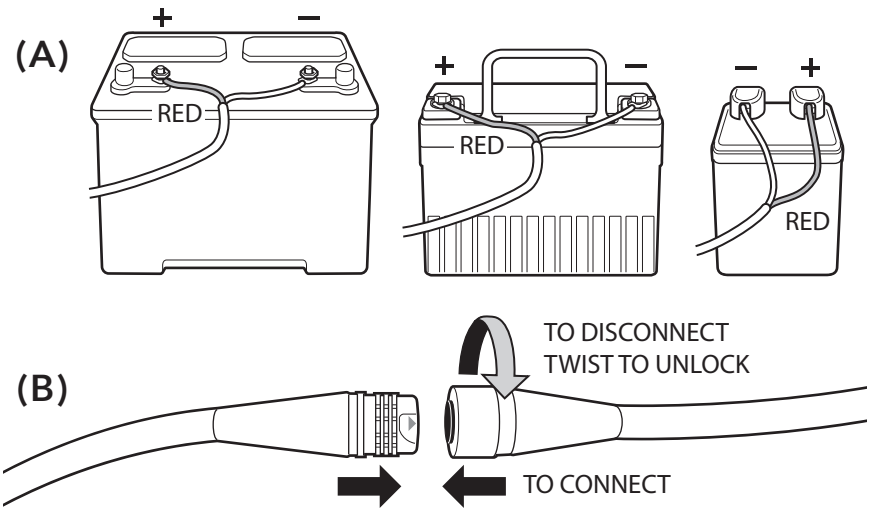
KAYAK WITH 12V BATTERY OPTIONS								
			12V, 22 Group deep cycle AGM		12V, 24 Group deep cycle AGM		12V, 27 Group deep cycle AGM	
Speed Setting	Watts: Input	Speed: MPH	Runtime: HOURS	Range: MILES	Runtime: HOURS	Range: MILES	Runtime: HOURS	Range: MILES

5	150	4	2.3	9.2	6.1	24	7.3	29
4	58	3	6.6	20	17	52	21	62
3	19	1.7	23	38	60	102	72	122
2	11	0.9	40	36	107	96	128	115
1	4.8	0.4	101	40	268	107	320	128

4. Connecting to the Battery

You must purchase the appropriate connector kit for the battery you selected for your Flex Drive E. You will need connect your battery as shown below. NOTE: You will need to install the correct battery lug ring connectors to connect terminal ends to the cable. Included in your motor kit is a 3/8th" insulated lug connector. Our K2 batteries require a 1/4" insulated lug connector; it is included in our lithium battery kits.

- (A) If not already connected, connect battery cable to appropriate battery posts. (See instructions and safety information in the accessory kit)
- (B) Attach motor cable to battery cable by lining up arrows to meet and pushing until it clicks.



Securing the battery.

It is very important to secure your battery to the boat's deck while operating or risk losing your battery in rough water or in a capsizing event.

K2 Lithium Batteries are sealed, waterproof, and come with a buoyant carry case which can be easily secured using bungees.

Conventional lead acid batteries are heavy and should be situated on the boat to ensure the boat remains trim. Always tie down lead acid batteries securely. Lead batteries may leak and be damaged or cause adverse environmental impact when submerged and cause injuries if unsecured and shifting.

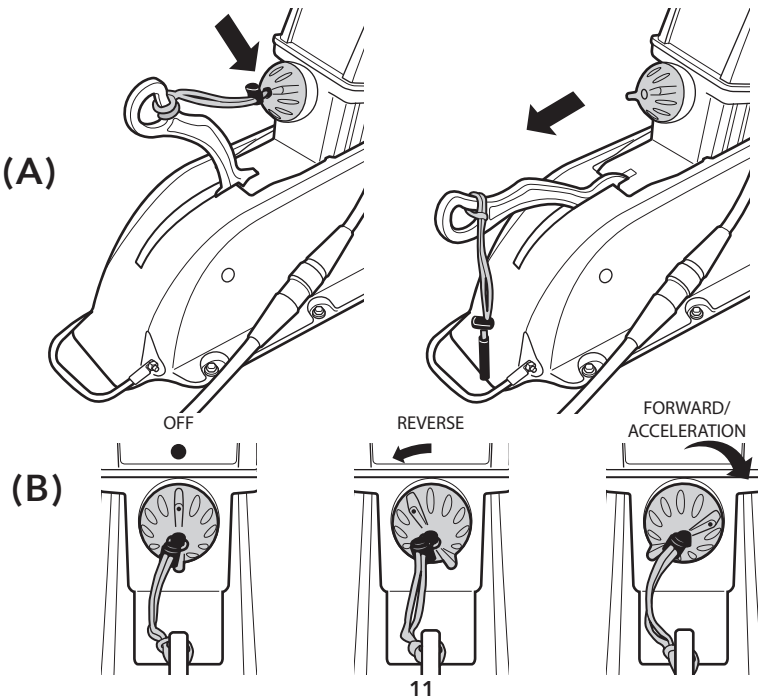
5. Operating the Flex Drive E

Affix the optional specification sticker to match the battery you are using. Once the Flex Drive E is properly attached and tightened down and battery power is connected, confirm that your battery is well-secured before operation. Make sure the lever is raised so magnetic key can reach throttle knob.

IMPORTANT: For your safety and to prevent damaging the propeller during operation, the lanyard attached to the safety key should always be attached to the deployment lever as shown. This ensures the key will detach and the motor will shut down should the operator inadvertently raise the propeller while the motor is running.

- (A) Insert the Magnetic Safety Key (tethered by colored lanyard on deployment lever) firmly into the hole in the center of the throttle knob until it is snug. Turn the throttle knob to neutral/off position for at least 3 seconds. The time delay is a safety interlock feature to avoid inadvertent operation/propeller spinning.
- (B) Turn the throttle knob clockwise for forward, counterclockwise for reverse. The farther you turn the knob in either direction, the greater the acceleration.

Remove key when motor is not in operation.



6. Operation Tips

- The throttle maintains its setting without being held.
- Always sit within easy reach of the lever and throttle controls for safety.
- RESET: When the safety interlock shuts off your motor (i.e. when the key is removed or when the power cord is removed and replaced), you must reset the motor. Insert key again, return the knob to neutral/off power setting and wait 3 seconds to enable motor operation.
- Loop the Magnetic Safety Key lanyard around the lever for storage and use.
- **For use as a man-overboard safety disable switch, add a length of cord to your PFD with a loop in the end. Pass the lanyard through the loop before inserting the key.**
- When approaching shore, return the motor to neutral and raise the Flex Drive lower unit to protect the prop from hitting bottom.
- **IMPORTANT: Tether the key with the lanyard to the deployment lever and it will only reach the throttle hole when the prop is lowered in the water and ready to operate.**
DO NOT DEFEAT THIS SAFETY OFF FEATURE.
Run motor only while prop and blade are in water. The gear case requires water for lubrication.
- The prop has sharp edges and strikes from a moving prop will cause serious injuries.

Important Safety Information

- Do not let hands or children near the exposed prop. Be aware of swimmers and animals during use. Use the safety key to quickly stop the motor and avoid strikes.
- Do not use or store charger in a damp location or cover during the charging.
- Inspect all cords before connecting or using. Do not use a damaged charger or battery.
- After inserting Magnetic Safety Key, turn throttle to off position for 3 seconds before turning on.
- The Magnetic Safety Key contains Neodymium magnets. If you have a pacemaker or other implanted medical device, consult your physician or the implanted device manufacturer prior to handling or use.
- Before each use, check the battery cable connector, and inspect for any corrosion.

7. Care and Maintenance

- Do not throw or drop the motor or store it under heavy items. Never lift or tie up boat by the motor.
- Promptly recharge the battery after use
- Completely air-dry motor in an upright position before stowing. If stored wet and upside down, water may stagnate in the motor cover.
- Cleaning of your motor should be limited to rinsing and wiping with a damp cloth.
- As with all propeller-driven outboards, use in active surf conditions may cause premature bearing wear.
- Do not use oil or other fluids to lubricate the motor gears / prop.
- **Invasive species proliferation:** If you use this motor in multiple waterways, be sure to fully drain the lower unit. Rinse and dry between waterways. Ask your local fish and wildlife district for more information on how to prevent spreading of species.
- Rinse the lower unit and prop at least every week if using in salt water. Spray off or dip in bucket of fresh water then allow to drain and dry. Periodically remove the prop and inspect for any grit or sand build-up.

8. Frequently Asked Questions

Why won't the motor start?

1. Make sure the motor is properly aligned and the coupling is level, sitting flat on the base. A misaligned coupling will cause motor to operate slowly or not at all.
2. Insert the magnetic key firmly into the hole until it clicks and is snug. Turn knob to neutral / off position for at least 3 seconds before turning on.

Why has power shut down?

1. Assure the Magnetic Safety Key is fully inserted; remove, inspect for debris and replace it.
2. Disconnect battery cable from the motor, inspect for debris and reconnect. Assure the connector is securely attached to the motor.
3. Assure the battery is sufficiently charged. How long has the motor run since last charge? Connect spare battery, if available.
4. Lower lever to raise prop and inspect for weeds or other entanglements.

For safety, the motor turns off for each of the above conditions. After checking each, test operation by turning the power dial to the "off" position for at least 3 seconds before attempting to operate.

What prop should I use?

Flex Drive E props have two blades and match 12 or 24V battery voltages. **Use the JK 5" Pitch 24V Prop (marked '9 x 5') with 24V batteries. Use the JK 10" Pitch Pedal / 12V Prop (marked with '10 x 10') with 12V batteries and pedal drive.** It is ok to use either prop for pedaling / trolling. Pedal performance will be better using the 10" Pitch Pedal / 12V Prop.

How fast will my boat go?

Your boat's hull shape, waterline length, load, weather, tides and other factors will affect your speed. (See chart on page 9)

How much runtime per battery charge?

Runtime depends on the battery and throttle setting. See chart on page 9.

How long will the battery pack last?

Our recommended K2 lithium batteries have a lifetime of at least 2000 charge/discharge cycles before capacity diminishes significantly.

Do the batteries require special care?

For K2 lithium batteries, store in a cool dry place out of sunlight and extreme temperatures, and air-dry before storage.

Recharge soon after each outing for longest life. Charge until the charger light turns green, and disconnect batteries from chargers within 24 hours to save energy. See battery instructions for use and care.

Are the batteries dangerous?

All high-power batteries are dangerous to persons, property and to the environment if improperly discarded. Recycle responsibly.

Is there a danger to the magnetic key?

Generally no, but if you have an implanted device for your heart, consult your doctor before using.

How do the controls work?

Turn knob clockwise for forward, counter clockwise for reverse. The throttle has an easy-control dial. The Safety Key sits inside the throttle dial for quick power-down situations. The Safety Interlock System requires turning the throttle dial to off for 3 seconds after the key is removed and plugged back in. The Safety Key may be attached to a lanyard on your PFD via a looped cord.

Is there a reverse?

Yes. Turn the throttle dial counter-clockwise for reverse.

What if my boat turns over with the motor running?

Once your boat is upright and bailed unplug the key, then re-insert the key to reset your throttle and continue use. The motor is waterproof, as is the optional K2 lithium battery. After full immersion, rinse unit with fresh water and air dry after your journey.

Does it make my boat a powerboat?

In many areas, motors this small (under 250 watts and under 2 HP.) are not regulated on boats under 16 feet but they are in some waters and locations. Check your local regulations. In Washington State, registration is not required for use on lakes and other non-Federally managed waterways.

Battery Disposal and Recycling

Lithium batteries contain hazardous materials and pose hazards for the environment and ground water if discarded in the trash. They should be recycled at the end of usable life. Please recycle locally and responsibly.

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