



F4U Corsair PNP Instruction Manual



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US Patent 7,391,320
Other Patents Pending

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Charge-and-Fly™ Park Flyer

Wingspan: 44 in (1118mm)
Length: 36 in (914mm)
Weight (RTF): 30 oz (875 g)
Servos: Four 3-wire servos
Motor: PKZ 480-size, 960Kv outrunner brushless motor
ESC: E-flite 30A brushless ESC with Switch-Mode BEC (EFLA1030)

F4U Corsair Instruction Manual

Congratulations on your purchase of the ParkZone® F4U Corsair Plug-N-Play® (PNP). One of the most popular Warbirds of WWII, the Corsair was also one of the most feared by the Axis powers. Nicknamed the “sweetheart of Okinawa” by American pilots and “whistling death” by the Japanese, the F4U’s most notable feature was the “bent” wing that was necessary to allow clearance for its massive propeller, which was powered by the incredible Pratt and Whitney R-2800 Double Wasp radial engine. You can now enjoy flying your own F4U with this beautiful ParkZone replica.

This airplane comes almost fully assembled in order

to allow you to get in the air quickly. Your F4U Corsair Plug-N-Play already has the 3-wire servos, a ParkZone 480 outrunner brushless motor and an E-flite Pro 30A brushless ESC installed. The decals have already been applied, as well. You will only need to add your own battery and charger (a 3S 1800+mAh Li-Po battery is recommended), as well as a receiver and transmitter. In as little as an hour, you can be ready for your first flight with the F4U Corsair PNP. This means you can spend your time refining your flying skills, not your building skills.

Warning:

Although your ParkZone F4U Corsair PNP comes almost ready to fly, this aircraft is for experienced RC pilots only and is not a toy! Misuse of the plane can cause serious bodily harm and damage to property. Therefore, only an experienced RC pilot should fly it.

If you are not experienced at flying one of HobbyZone’s 3-channel aircraft, or any other 3-channel radio controlled aircraft, we recommend that you do not fly this aircraft. If you still choose to fly, you will need to seek the help of an experienced radio control pilot during your first several flights. This is especially important if you have not flown a 3-channel airplane with aileron control as one of the channels. Crash damage is not covered under the warranty.

Caution!

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

Step 1

Charging Your Flight Battery

We recommend that you choose either the 2200mAh 3S Li-Po (PKZ1030) or the ParkZone 1800mAh 3S Li-Po (PKZ1031) to power your F4U Corsair PNP. The Li-Po battery must be charged with a charger that is

specifically designed to handle Li-Po batteries, such as the ParkZone 2- to 3-cell Li-Po Charger (PKZ1040). Regardless of the battery you choose, always follow the charger and battery instructions in order to avoid any damage to the battery, charger, property or yourself.

Step 2

Installing the Receiver

Carefully plug in the servo leads into the corresponding channels of the receiver you have chosen. Confirm that the servo leads/plugs are in the correct channel of the receiver. Do this by:

1. Turning on the transmitter (Refer to your radio’s instructions for further information).
2. Installing a charged flight battery
3. Plugging flight battery into ESC
4. Checking all functions to ensure proper setup

Keep all body parts away from the propeller. You can also make any trim adjustments to the control surfaces at this time. Once you are satisfied that the channels are functioning correctly, you can turn off the radio system. Install the receiver into the allotted space within the fuselage. Make sure it is secure. Carefully route the antenna (when applicable) so it exits the fuselage just behind the canopy. It should then simply fall along the fuselage and can be secured through the vertical stab. When the antenna is routed correctly, it should hang several inches (5”–7”) below the fuselage.

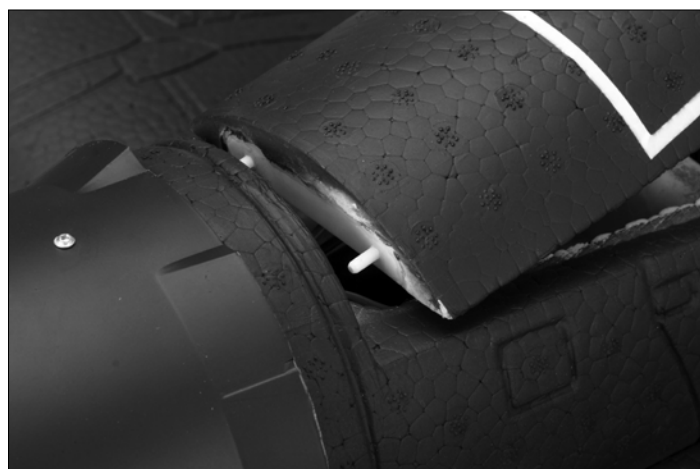
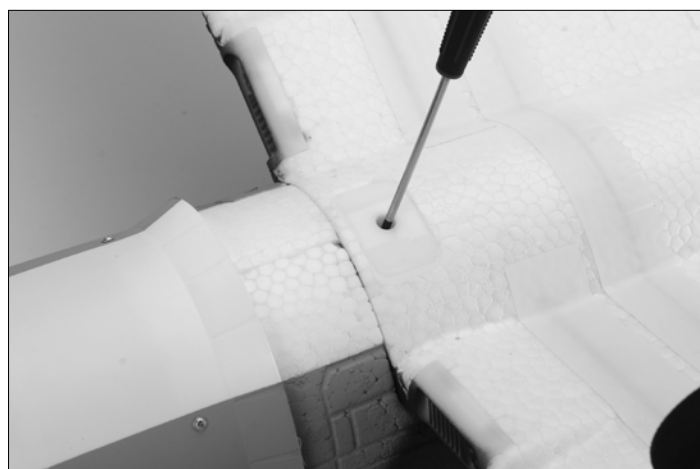


Step 3

Attaching the Wing

In order to attach the wing of your Corsair PNP, please follow these simple instructions:

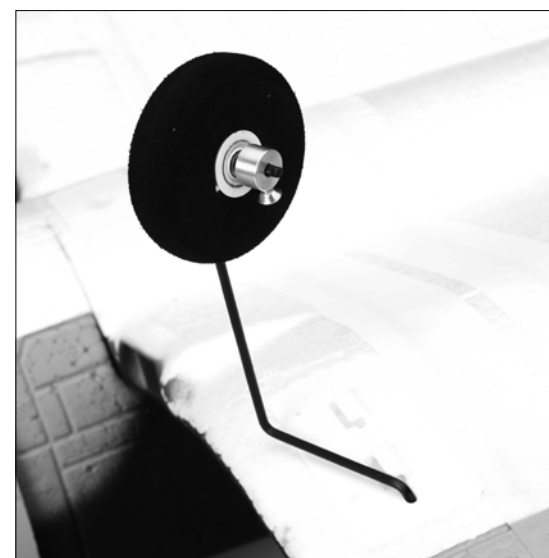
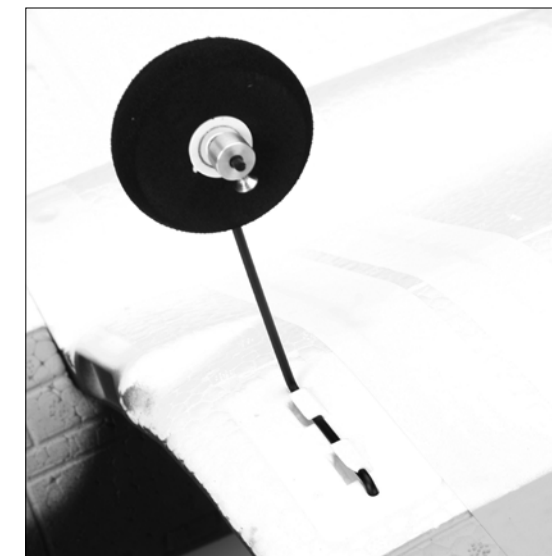
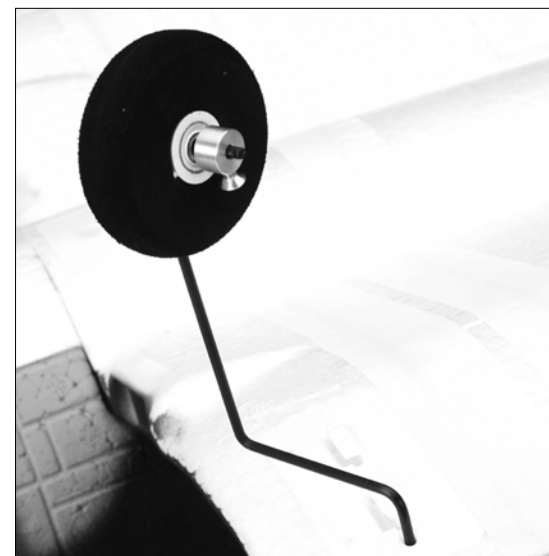
1. Locate the wing securing screw (3mm x 30mm) in the box.
2. Remove the canopy hatch by gently pulling up on the back of the hatch and set it aside. Removing the hatch will aid in routing the aileron leads from the wing into the fuselage.
3. Turn over the fuselage so you are looking at the bottom. Do the same with the wing.
4. Carefully align the two locator pins on the back of the wing into the two small holes in the back of the fuselage.
5. Route the aileron leads through the access hole in the bottom of the fuselage.
6. Slide the aileron leads inside the fuselage so that they will not become pinched in between the wing and the fuselage when securing the wing.
7. Slide the leading edge of the wing into the fuselage as shown, making certain it is perfectly centered. This must be done correctly in order to allow the screw to thread into the fuselage. Once you are certain the wing is centered, tighten the screw to secure the wing.
8. Connect the aileron leads to the included Y-harness, noting proper orientation.
9. Replace the canopy by aligning the pins on the front of the hatch with the fuselage. The magnet at the rear of the hatch will ensure it is secure.



Step 4

Installing the Landing Gear

Install the main landing gear by inserting the wire into the locator hole in the wing. Swivel the landing gear toward the retaining clips and gently snap into place.



Installing Landing Skids (Optional)

Two landing gear skids have been included with the F4U Corsair PNP should you choose to fly without the landing gear. To install, simply apply the skids over the landing gear mounts and secure with the included screws. The rear edge of the skids can be secured to the Z-Foam™ using double-sided tape.

Step 5

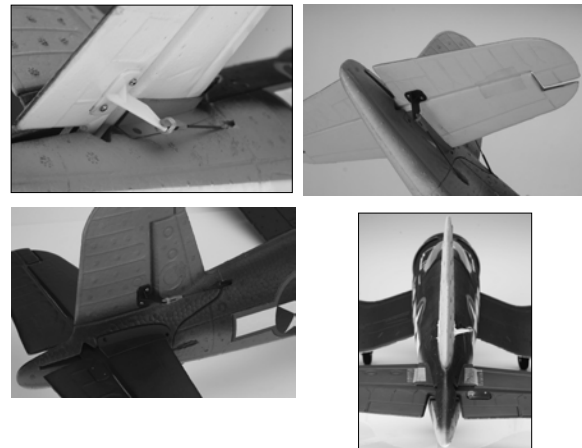
Attaching the Horizontal Stabilizer

1. Locate the horizontal stabilizer of the tail.
2. Slide the horizontal stabilizer in the allotted space of the fuselage, making sure the control horn installed in the elevator will properly align with the pushrod and clevis exiting the back of the fuselage.
3. When you are certain the horizontal stabilizer is centered correctly and in the right place, use the tape provided to properly secure the stabilizer to the fuselage. Use the tape on the top and bottom of each side of the horizontal stabilizer (total of 4 applications).
4. Make sure the throttle stick is in the full down (idle) position. Turn on the transmitter and plug in the flight battery.
5. Locate the lower clevis and pushrod exiting the right side of the fuselage, and attach the clevis to the outermost hole on the elevator control horn. Slide the included retainer over the clevis to ensure the clevis will not open.
6. Make any trim adjustments as necessary prior to flight (see step 7).

Note: To make trim adjustments to the horizontal stabilizer:

- a. Confirm the throttle stick is in the full down (idle) position and turn on the DX5e transmitter.
- b. Connect the blue EC3 battery connector into the EC3 device connector on the speed control.
- c. Use the elevator trim of the radio by moving up or down to achieve neutral position when the gimbal is also at neutral. If these changes are not sufficient, center the transmitter elevator trim (distinguished by a long tone), then remove the clevis from the elevator control horn and turn clevis in or out as needed to move the elevator alignment back to neutral.

Warning: Always keep hands and all objects away from the propeller in case the motor is engaged. A moving propeller can cause severe injury and damage.

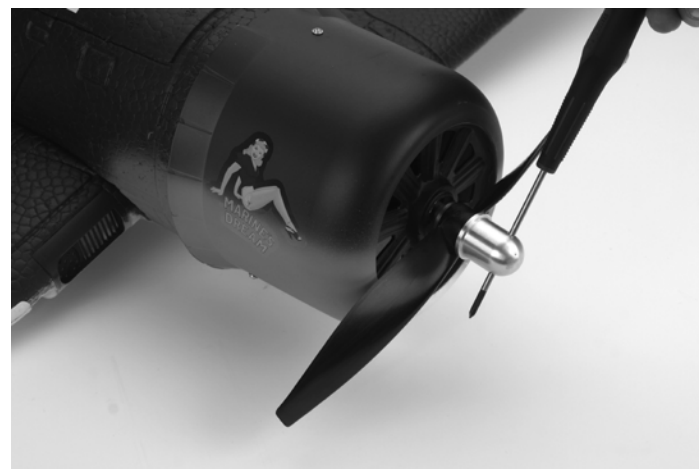


Step 6

Installing or Replacing the Propeller and Spinner

Your F4U Corsair has come with 2 different propellers.

- The 2-blade (installed) propeller is slightly more efficient and offers a little more thrust.
 - The 3-blade propeller allows for more scale-type flights, yet performs very well.
1. Remove the prop hub by inserting a hex driver through the holes drilled in the hub. Carefully grasp the propeller and turn the prop hub counter-clockwise to loosen the hub.
 2. Slide propeller on. Make sure pitch numbers on prop are visible from the front of the airplane.
 3. Re-install the prop hub by turning it clockwise. The hex driver should be used as in Step 1 to ensure the hub is tight.



NOTE: Always confirm the flight battery is unplugged from the speed control prior to working around the propeller and cowl.

Step 7

30A ESC instructions

The E-flite 30A Pro Brushless ESC is a lightweight, high-quality, efficient sensorless brushless electronic speed control with an integrated switch-mode BEC. It can operate without the need for a separate receiver battery to power your servos and receivers, saving you weight and complication. It is capable of up to 30 amps continuous current when using 3- to 4-series LiPo battery packs. You can drive up to 5 analog or 4 digital sub-micro-sized servos with the BEC on any recommended input voltage. This ESC also features safe power arming along with advanced programmable features such as low voltage cutoff, braking, timing, throttle input range, and more, making this truly a 'pro series' speed control. The ESC installed in the F4U Corsair has been pre-programmed for 3S low voltage cut-off.

Note: ALWAYS assume the motor and the propeller are live. ALWAYS keep clear of the propeller at all times. The high rpm of the brushless motor can cause severe injury.

E-flite 30-Amp ESC Features:

- Up to 30 amps continuous current with proper air flow and 35 amps burst current (15 seconds)
- 5V switch-mode BEC capable of 700mAh continuous current on any recommended input voltage
- Drive up to 5 analog or 4 digital sub-micro-sized servos with the BEC on any recommended input voltage
- 3- to 4-cell LiPo, 9- to 12-cell NiMH/NiCd input voltage
- Programmable motor braking
- Safe power-arm mode prevents accidental starts
- Programmable low voltage cutoff with settings for 3-cell LiPo (9.2V), 4-cell LiPo (12V), or 74% of battery starting voltage
- Programmable throttle input range (1.1ms–1.9ms or 1.2ms–1.8ms)
- Programmable soft start for helis and airplanes
- Auto motor shut down if signal is lost or there is interference
- Programmable timing—5 user-selectable ranges—use with a large variety of brushless motors
- Optional RS232 Serial Link and software available for PC programming (EFLARS232)
- Pre-wired connectors—E-flite EC3 on battery input and 3.5mm female gold bullets on motor output leads

Specifications

Continuous Current:	30A*
Max Burst Current:	35A (15 sec)*
Length:	51mm (2 in)
Width:	28mm (1.1 in)
Height:	8.7mm (.35 in)
Weight:	31 g (1.1 oz)
Cells:	3-4S LiPo or 9-12 NiMH/NiCd
Battery Input Leads:	16 AWG with E-flite EC3 Connector
Motor Output Leads:	16 AWG with 3.5mm Female Gold Bullet Connectors

* Proper cooling required

Optional RS232 Serial Link & Programming Software
Programming your ESC will be much faster and easier when you purchase the optional RS232 Serial Link and programming software. This will allow you to update your ESC using a laptop or PC. You must have a Serial Port on your computer or you can purchase a separate USB to DB9 adapter (available at computer retailers).

EFLARS232—RS232 Serial Link/Programming Software

Servo Ratings with BEC Enabled:

Drives up to 5 analog or 4 digital sub-micro-sized servos with the BEC on any recommended input voltage. Some servo combinations we have tested in various models include:

- 1 analog standard servo, 1 digital sub-micro servo, 2 analog sub-micro servos—E-flite Apprentice 15e RTF
- 2 ParkZone (PKZ1081) analog sub-micro servos and 2 ParkZone (PKZ1090) digital metal gear sub-micro servos—ParkZone T-28 Trojan RTF & F4U Corsair RTF

Some other brands and models of servos may have significantly higher current draw. Digital servos and binding servos of any kind typically have higher current draw. As a general rule, micro and sub-micro servos draw less current which may affect your servo usage as shown in the examples above. We recommend the use of a Hangar 9 Servo and Receiver Current Meter (HAN172), installed between the throttle lead of the ESC and receiver, to confirm current draw of the actual servos used. Also, always be sure to position the ESC for maximum airflow since cooling can significantly aid in the performance of the BEC.

Step 7 cont.

Before first use, please refer to “Servo Ratings with BEC Enabled” notes for BEC usage guidelines. You must follow these guidelines for safe operation. If you are using more than 5 analog sub-micro-sized servos, more than 4 digital sub-micro-sized servos, or servos with higher current draw than the BEC can deliver, you will need to disable the BEC. If you wish to disable the BEC, you must remove the red receiver wire lead and connector from the receiver lead housing, and then insulate it properly to prevent shorting. When operating with the BEC disabled, E-flite recommends the use of a separate, high-power, external BEC (like the Ultimate BEC), or receiver pack and switch using the following items to ensure trouble-free operation:

1. JR 1100mAh 4.8V Ni-MH receiver battery (JRPB4240), or similar
2. JR Switch Harness (JRPA003), or similar

Before you connect your ESC and begin flying, take a moment to look it over. The input power side has a black (negative) and red (positive) wire along with an E-flite EC3 Male Device Connector. The motor side has three 16-gauge wires (blue, red, and black) with 3.5mm female gold bullet connectors on the ends.

The black and red wires with the EC3 Device (DEV) Connector will connect to your power battery. The red wire connects to the red wire on your battery pack, the black wire connects to the black wire on your battery pack. If the wires are reversed, the ESC may be damaged. YOU MUST ENSURE THAT YOU CONNECT THE BATTERY POLARITY PROPERLY TO PREVENT DAMAGE TO THE ESC. Reversing polarity will void your warranty, so always double-check this connection. Use only a genuine E-flite EC3 Female Battery (BATT) connector on the battery so it matches the EC3 Male Device (DEV) connector on the speed control. The throttle lead connects to the throttle channel on your radio receiver.

WARNING: For your safety, when checking the startup function of the ESC or making programming changes, please remove the propeller to prevent any potential injury. You should always treat the motor and propeller as live and dangerous, remembering it could start at any time, and keep any body parts, clothing and tools clear of the propeller arc. NEVER LEAVE THE BATTERY CONNECTED WHEN NOT FLYING THE AIRCRAFT AND ALWAYS REMOVE THE BATTERY FROM THE MODEL BEFORE CHARGING AND WHEN FINISHED FLYING.

When flying in hot weather, we recommend checking on the condition of the ESC, battery, and motor after each flight. You may want to consider letting the electronic components cool to near ambient temperature between flights. We also recommend throttle management when running near maximum levels of current draw during extreme conditions. It is not recommended you fly an entire flight at full throttle. If this is done, it is possible to cause permanent damage to your motor, battery, and ESC.

Using the 30-Amp Pro Switch-Mode BEC Brushless Controller

This controller is very simple to use, and for safety, will not arm the motor until the throttle stick has been held in the Idle/Off position for more than 1 second. The controller will indicate the soft cutoff voltage setting every time you plug the battery in by first emitting a low, long tone, to indicate startup. Depending on the selected cutoff voltage (default is 74%), you will then hear the respective number of medium length mid tones to indicate the cell count or a musical tone for the 74% cutoff, helping you to confirm the setting before every flight. Proper air cooling is required during flights so the ESC should be placed in an area where air flows over the controller.

Connecting the ESC to the Motor

The three wires from the motor connect to the three female gold bullet connectors on the ESC. The order of connection to the motor is not important; any motor wire can be plugged into any connector. If the motor runs backwards, you can simply unplug and switch any two of the motor wire plugs connected to the ESC.

Mounting the ESC

Choose a location that has good airflow and offers good protection. Do not cover the side with the flat heat shield with hook and loop or tape as this will greatly reduce its effectiveness. Mount the ESC with a combination of hook and loop, 2-sided foam tape, and/or tie wraps.

Starting Your Power System

1. Turn on your transmitter and ensure the position of the throttle stick is set to Idle/Off.
2. Plug the battery pack into the controller. You will hear 1 low long tone to indicate startup, then the respective number of medium-length mid tones to indicate the cell count or a musical tone for the 74% cutoff, followed by 3 rising tones to indicate the controller is armed.

3. When you move the throttle stick upward, the motor will run. Continue to move the throttle stick upward to the full throttle (high) position, and the motor will run faster. When the throttle stick goes below the start-up position, the motor will stop running.
4. Check servo motion as part of your preflight check. It is very important to make sure linkages are free-moving with no binding.

Remember, when in the programming mode:
Full Throttle = Stick Up
Idle = Stick Down

The default settings (from the package) for your E-flite 30-Amp Pro ESC are as follows:

- Voltage cutoff set at 74%
- Brake set to Off
- Timing set at 15 degrees
- Throttle Input Range set at 1.2ms to 1.8ms
- Start-up Rate (Acceleration Delay) set at 0.25 seconds
- PWM Frequency set at 8KHz
- Operating Mode set to normal (airplane)

Entering the Programming Mode

1. With the battery disconnected from the controller, and the transmitter turned on, first move the throttle stick to full throttle (>1.7ms) position. Leave it in this position and then connect the battery to the controller.
2. Wait for 5 seconds, and the ESC will give two sets of fast ringing tones to indicate you have successfully entered the programming mode.
3. Once you hear these tones, move the stick to center (between 1.4 and 1.7ms) for 5 seconds, and the controller will beep 1 time, indicating you are now in Menu 1.
4. The controller will now wait 5 seconds for you to make your selection; your programming options are either full throttle (>1.7ms) or idle (<1.3ms).
5. When you have made a valid selection, the control will beep once with a lower tone, and you can move the stick back to center for the next menu item (2 beeps, 3 beeps and so on). If you do not make a selection within 5 seconds, the controller will move to the next menu item.
6. If you want to make changes in the programming menus (see specific instructions below) move the throttle stick to full throttle (>1.7ms) position. You

will have 5 seconds to make your selection.

7. If you want to advance to the next menu, allow the programming to skip to the next menu after the 5 seconds have expired.

Programming Menu 1—Voltage Cutoff

Use this option to set the voltage at which the controller will shut down the motor to prevent damage to your battery when it reaches the cutoff voltage. You will know your battery pack has reached auto cutoff when you hear the motor “pulse” repeatedly.

1. Move the throttle stick to full throttle (>1.7ms) position to make changes to the voltage cutoff programming.
 - a. To select 3-cell low voltage cutoff – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - b. To select 4-cell low voltage cutoff—You will hear 4 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - c. To select 5-cell low voltage cutoff—You will hear 5 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.

IMPORTANT NOTE ABOUT 74% CUTOFF: This option will activate the soft cutoff at 74% of startup voltage or 9.2V, whichever is higher. For example, if your pack measures 16.8 volts at startup, then the soft cut will occur at 12.4 volts. The 74% cutoff option will check the startup voltage every time you plug the battery into the controller, so beware of using partially charged packs, as the system cannot protect your LiPo batteries if you are using the 74% cutoff and connect a partially charged pack. You will know your battery pack has reached soft auto cutoff when you hear the motor “pulse” repeatedly. We recommend you land your model as soon as you hear the motor pulse (indicating the pack voltage has dropped to the cutoff voltage level) to prevent over-discharge of the LiPo battery pack, and to prevent sudden power loss.

Step 7 cont.

Programming Menu 2—Brake Type

The default setting is Brake Off. This option gives you the choice to have the ESC stop the propeller during flight (Brake On) or allow it to windmill (Brake Off). Use the Brake On options for folding propellers.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 2 times, indicating you are now in Menu 2.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Brake Type programming.
 - a. To select No Brake/Brake Off – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - b. To select Soft Brake – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - c. To select Medium Brake – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - d. To select Hard Brake – You will hear 4 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

Programming Menu 3—Timing

The default setting is 15 degrees. As a general rule, lower pole count motors use lower timing and higher pole count motors use higher timing. Please refer to your motor instructions and specifications for an indication of the number of poles.

Low Timing Advance

Timing Degrees – 5 & 10

Motor Poles – 2 to 4

Expected Performance – Good balance of power and efficiency

Motor Poles – 6 or more

Expected Performance – Best efficiency and run time (lowest power)

Standard Timing Advance

Timing Degrees – 15 & 20

Motor Poles – 6 to 12

Expected Performance – Good balance of power and efficiency

Motor Poles – 14 or more

Expected Performance – Best efficiency and run time (lowest power)

High Timing Advance

Timing Degrees – 25

Motor Poles – 12

Expected Performance – Highest power, less efficiency

Motor Poles – 14 or more

Expected Performance – Good balance of power and efficiency

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 3 times, indicating you are now in Menu 3.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Timing programming.
 - a. To select 5 Degrees – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - b. To select 10 Degrees – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - c. To select 15 Degrees – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - d. To select 20 Degrees – You will hear 4 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - e. To select 25 Degrees – You will hear 5 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the

program selection or leave in full throttle for 5 seconds to advance to the first selection again.

Programming Menu 4—Throttle Input Range (PWM)

The default setting is 1.2ms to 1.8ms and should work with most radio systems. This option allows for proper throttle input with many different radio systems. However, some radios have a wider output range, and may give a more linear response with the 1.1ms to 1.9ms range. If you feel there is too much “dead” area in the stick movement near full throttle, try adjusting the end points in your radio, or change to the wider input range. Be aware that if these settings are not correct, it may be impossible to arm the controller.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 4 times, indicating you are now in Menu 4.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Throttle Input Range programming.
 - a. To select 1.2ms to 1.8ms – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - b. To select 1.1ms to 1.9ms – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

Programming Menu 5—Start-Up Rate

The default setting is 0.25 seconds. The start-up rate is the time it takes to reach maximum motor speed. Changing the setting to 1 second can be useful with power-fragile gear boxes.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 5 times, indicating you are now in Menu 3.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Start-up Rate programming.
 - a. To select .25 second – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the

program selection or leave in full throttle for 5 seconds to advance to the next selection.

- b. To select 1 second – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

Programming Menu 6—PWM Switching Frequency

The default setting is 8KHz, which should be acceptable for most motors. If you have a low or very low inductance motor and know you need to use a higher PWM Frequency (refer to the manual included with the motor), then you can change the setting. Otherwise, we recommend leaving the default setting.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 6 times, indicating you are now in Menu 6.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the PWM Switching Frequency programming.
 - a. To select 8KHz PWM Frequency – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - b. To select 16KHz PWM Frequency – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - c. To select 32KHz PWM Frequency – You will hear 3 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

Step 7 cont.

Programming Menu 7—Operating Mode

The default setting is set to Normal (airplane) Mode, which is limited to a start-up rate of 0.25 or 1 second. Alternatively, the Heli Mode can be selected which reduces the start-up rate to 5 seconds for the first start-up and any start-up after the motor/ESC has been stopped for more than 5 seconds. This helps to prevent damaging the motor, gears or any other components from an abrupt start-up when none of the parts are moving. Any time the motor/ESC has been stopped for less than 5 seconds in Heli Mode, the start-up will be immediate. This allows power to be applied immediately, such as when aborting an auto-rotation attempt or for any other reason, to help prevent a crash. Remember, you must wait more than 5 seconds after stopping the motor/ESC in order for the 5-second start-up to occur again.

1. Move the stick to center (between 1.4 and 1.6ms) for 5 seconds, and the controller will beep 7 times, indicating you are now in Menu 7.
2. Move the throttle stick to full throttle (>1.7ms) position to make changes to the Operating mode programming.
 - a. To select Normal mode – You will hear 1 short beep. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the next selection.
 - b. To select Heli mode – You will hear 2 short beeps. Move the throttle stick to center (between 1.4 and 1.6ms). The controller will beep 2 times, indicating you have set the program selection or leave in full throttle for 5 seconds to advance to the first selection again.

Troubleshooting

The controller will beep more quietly than normal if the input voltage is below the cutoff voltage when the battery is connected. Check the voltage of the battery pack to see if it is correct (charged), or the programmed cutoff setting if the input voltage is set incorrectly for the voltage of the pack being used.

If you have trouble arming the controller (and the throttle stick and throttle trim have been set to minimum), enter the programming mode and try changing the setting to 1.1ms–1.9ms in Programming Menu 4 to see if it helps correct the problem. If it is a computer radio, you may alternatively increase high and low throttle ATV (end-point) percentages.

Note: Increasing the high ATV will not have a consequence on arming issues, only low ATV.

Some transmitters, including all Futaba transmitters, will require the throttle channel to be “reversed” for proper operation.

Step 8

Range Test

After you have finished the final assembly, it is time to range check the radio system within the F4U Corsair PNP.

Prior to each flying session:

Make sure that no one around may be flying, or is getting prepared to fly, on the same channel that you are on. After this is confirmed, turn on the transmitter prior to plugging in the flight battery. With the airplane on the ground and motor running, you should walk away approximately 100 feet (35 meters) and still have full control of all functions. If this is not the case, do not fly! Call the Horizon Support Team at 1-877-504-0233.

Step 9

Flying

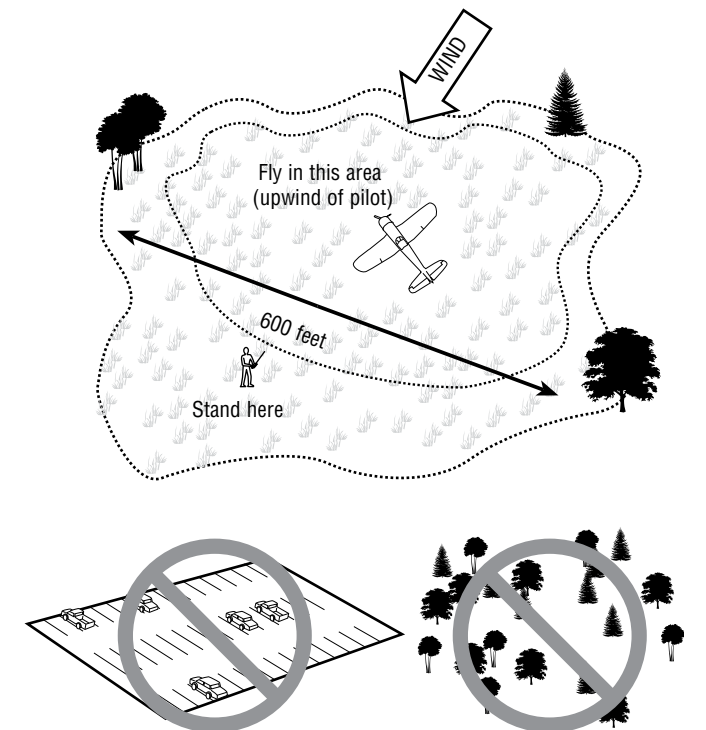
Always choose a wide-open space for flying your ParkZone F4U Corsair PNP. It is ideal for you to fly at an AMA sanctioned flying field. If you are not flying at an AMA approved site, always avoid flying near houses, trees, wires and buildings. You should also be careful to avoid flying in areas where there are many people, such as busy parks or school yards. Always follow local ordinances. We recommend only flying your Corsair in light winds.

Prior to each flight:

- Always make sure your F4U Corsair PNP is properly trimmed.
- Always make sure the receiver, ESC, and battery are properly secured.
- Always verify the propeller is on securely.
- Always ensure the servo reversing switches on the transmitter are set correctly.
- Always verify the dual rates switch is set at where you plan on flying. We recommend LOW rates for your initial flying. The F4U Corsair PNP is VERY maneuverable on high rates and requires a lot of experience to handle properly.

Center of Gravity Location:

The center of gravity on your F4U Corsair PNP should be located approximately 2-1/2” (63mm) behind the leading edge of the wing, when measured against the fuselage. This CG location has been determined with the ParkZone 1800mAh 11.1V Li-Po battery installed.



Replacement Parts

Make sure that you keep your F4U Corsair flying. Replacement parts are available at your local hobby shop or from Horizon Hobby (www.horizonhobby.com). Please try your local hobby shop first. By supporting them, they will be there when you need them!

Item #:	Description:
PKZ1012	2-Blade Propeller (9.5x7.5): T28/Corsair
PKZ1015	3-Blade Propeller (8.7x6): T28/Corsair
PKZ1016	Prop Hub: Corsair
PKZ1062	Servo Gear Set: SV80 Servo (Ailerons)
PKZ1063	Servo Y-Harness: Corsair/3D2/T28
PKZ1064	Metal Gear Set: DSV130M
PKZ1081	SV80 Servo (long lead): Ailerons
PKZ1090	DSV130M Servo (short lead): Rudder and Elevator
PKZ4416	480 Outrunner Brushless Motor: T28/Corsair
PKZ4418	Motor Shaft: 480 Outrunner
PKZ4428	Motor Mount: T28/Corsair
PKZ4603	Decal Sheet: Corsair
PKZ4606	Main Landing Gear: Corsair
PKZ4607	Tail Wheel: Corsair
PKZ4613	Clear Canopy & Painted Pilot w/Hatch: Corsair
PKZ4620	Painted Wing w/Details (No Servo): Corsair
PKZ4621	Wing Mounting Screw (3x30mm)
PKZ4622	Pushrods w/Clevis: Corsair
PKZ4623	Landing Gear Blocks: T28/Corsair
PKZ4624	Landing Gear Doors: Corsair
PKZ4625	Horizontal Tail w/Accessories: Corsair
PKZ4626	Cowl: Corsair
PKZ4627	Landing Skids: Corsair
PKZ4629	Wing Radiators: Corsair
PKZ4667	Painted Bare Fuselage: Corsair
EFLA1030	30-Amp Pro Brushless ESC

Optional Parts

PKZ1030	2200mAh 11.1V Li-Po Battery
PKZ1031	11.1V 1800mAh Li-Po Battery
PKZ1040	2- to 3-Cell DC Li-Po Balancing Charger
HBZ6513	Alligator Clip: 12V Adapter
EFLC505	1-5 Cell Li-Po Charger with Balancer
THP1205P	AC to 12VDC, 5.0-Amp Power Supply: EFLC505
SPMAR500	AR500 DSM2 5-Channel Sport Receiver
SPM6600	DX6I 6-channel Full Range Radio System w/o Servos

Warranty and Follow-Up Procedures

Age Recommendation:

14 years or over. This is not a toy. This product is not intended for use by children without direct adult supervision.

Warranty Period:

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warrants that the Products purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits:

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.

Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

Safety Precautions:

This is a sophisticated hobby Product and not a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the Product or other property. This Product is not intended for use by children without direct adult supervision. The Product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs:

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack

the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by the warranty, the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. Please note: non-warranty repair is only available on electronics and model engines.

United States:

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822 USA

All other products requiring warranty inspection or repair should be shipped to the following address:

Horizon Support Team
4105 Fieldstone Road
Champaign, Illinois 61822 USA

Please call 877.504.0233 or e-mail us at productsupport@horizonhobby.com with any questions or concerns regarding this product or warranty.

United Kingdom:

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Hobby UK
Units 1-4 Ployters Rd
Staple Tye
Harlow
Essex CM18 7NS
United Kingdom

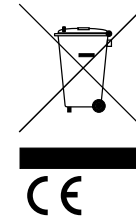
Please call +44 (0) 1279 641 097 or sales@horizonhobby.co.uk with any questions or concerns regarding this product or warranty.

Germany:

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Technischer Service
Hamburger Str. 10
25335 Elmshorn
Germany

Please call +49 (0) 4121 46199 66 or service@horizonhobby.de with any questions or concerns regarding this product or warranty.



CE Compliance Information for the European Union Instructions for Disposal of WEEE by Users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

Declaration of Conformity (FPO)

(in accordance with ISO/IEC 17050-1)

No. HH2008082803
Product(s): F4U Corsair PNP Plane
Item Number(s): PKZ4675
Equipment class: 1

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC:

General EMC requirements for Radio equipment
EN 301 489-1 v.1.6.1 EN 301 489-17 v.1.2.1

Signed for and on behalf of:

Horizon Hobby, Inc.
Champaign, IL USA
April 02, 2009

Steven A. Hall
Vice President
International Operations and Risk Management
Horizon Hobby, Inc.

