parkzone®

Typhoon 2 3D
Instruction Manual

PLUG-N-PLAY®

Charge-and-Fly™ *Park Flyer*

Wingspan: 39.5 in (1000mm)
Overall Length: 34 in (862mm)
Weight: 26 oz (740 g)
Motor: ParkZone BL400-15T
brushless with gearbox

Required: 4-channel transmitter (minimum)
4-channel receiver (minimum)
3S 2100mAh Li-Po battery or
9-cell 1000mAh Ni-MH battery

Typhoon 2 3D Plug-N-Play Instruction Manual

Congratulations on your purchase of the ParkZone® Typhoon™ 2 3D Plug-N-Play® airplane (PKZ4375). We at ParkZone are committed to giving you the most enjoyable flight experience possible. In order to have a safe and successful flight, we ask that you do not fly until you have read these instructions thoroughly.

This airplane comes almost fully assembled in order to allow you to get in the air quickly. Your Typhoon 2 3D Plug-N-Play (PNP®) already has the 3-wire servos, a ParkZone (BL400-15T) brushless motor, and an E-flite Pro 25A brushless ESC installed. The decals have already been applied, as well. You will only need to add your own battery (a 3S 2200mAh Li-Po or 9-cell 1000mAh Ni-MH are recommended), as well as a receiver and transmitter.

Note: Although the airplane can function with a 4-channel radio system, we suggest that you use a computer radio system with at least 6 channels so you can use dual rates and make end-point adjustments. These features will greatly add to the flying capabilities of the aircraft.

In as little as a few hours, you can be ready for your first flight with the Typhoon 2 3D PNP. This means you can spend your time refining your 3D flying skills, not your building skills. Your ParkZone Typhoon 2 3D PNP will allow you to do such maneuvers as harriers, blenders, hovering, knife edges, and more.

Warning

Although your ParkZone Typhoon 2 3D 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.

Advancing your Flying Skills

Once you have begun to fly your Typhoon and are looking for more ideas on maneuvers, visit:

http://www.horizonhobby.com/Explore/Article.aspx?ArticleID=1022

http://www.horizonhobby.com/Explore/Article.aspx?ArticleID=1033

http://www.horizonhobby.com/Explore/Article.aspx?ArticleID=1044

Step 1

Charging Your Flight Battery

We recommend that you choose either the 9-cell 10.8V Ni-MH battery pack (PKZ1027), or the ParkZone 1800mAh 3S Li-Po (PKZ1031) to power your Typhoon 2 3D PNP. If you choose to use a Li-Po battery, it 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.
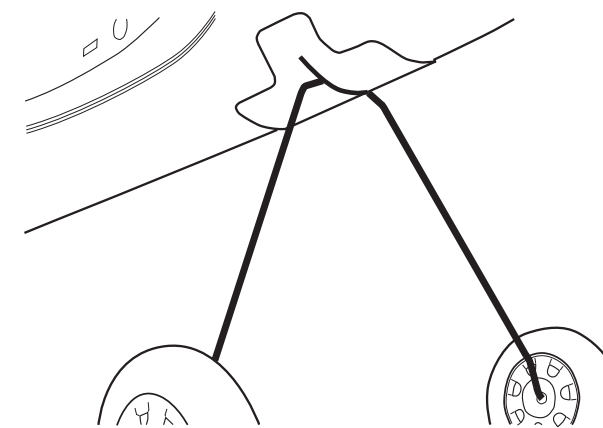
Warning

Failure to use the proper charger for a Li-Po battery can result in serious damage, and if left charging long enough, will cause a fire. Please use caution when charging Li-Po batteries.

Step 2

Installing Landing Gear

1. Slightly squeeze together the legs of the landing gear while sliding it into the allotted space on the fuselage undercarriage.
2. The fit should be snug, so it will not easily pull out.
3. Gently tug on the landing gear to ensure that it is inserted all the way into the fuselage and will not come out when the plane is in use.
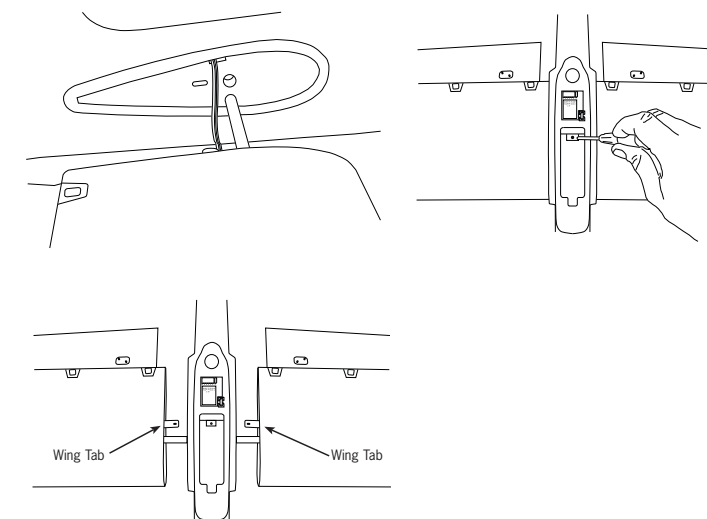

Step 3

Attaching the Wing

1. Locate the wing set. Note that the servos are located in the bottom of the wing.
2. Select a wing half and slide in fuse, making sure that you slide aileron servo lead in first (in allotted hole in side of fuse). Pull aileron lead carefully through fuse in order to allow wing tab and spar to go into their allotted holes. Do the same with the other wing half.
3. Carefully slide wing halves toward each other until the wing tabs overlap.
4. Match up the holes on each tab and secure with included screw.
5. Plug in the aileron connectors into receiver. Left aileron should plug into allotted space of receiver (directly below elevator). Right aileron lead should plug into second space of Rx allotted for aileron.
6. Attach the clevis of the aileron linkage to the bottom (outermost) hole of the aileron horn. Once you gain more experience, you can insert the clevis into holes on the aileron horn that are higher in order to do more extreme maneuvers with your Typhoon 2 3D PNP.
7. Plug in the aileron connectors into the receiver. Left aileron will plug into allotted space of receiver (directly below elevator). Right aileron lead will plug into second space of Rx allotted for aileron.

(Optional) SFG Installation

1. Locate the SFG mounts from the accessory bag.
2. The lower SFG mounts feature screw alignment pins to ease in the installation. Insert the lower SFG mount into the positioning holes in the wing. Gently install the upper SFG mount into the wing and carefully press the mounts together.
3. Using a small Phillips screwdriver (#00 Phillips screwdriver is recommended), secure the mounts together using the included screws.

4. Slide the SFG surfaces into the mounts and secure with clear tape. The SFGs are symmetrical and when installed, the graphics will face the wing tip.
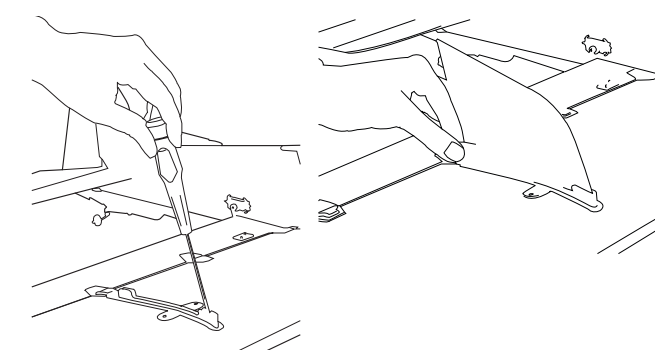
Always check ailerons prior to flight to make sure they are not reversed! Trim adjustments to the ailerons may be necessary prior to flight.

Wing Tab   Wing Tab

Optional Side Force Generators (SFG) Installation

Step 4

Attaching the Horizontal Stabilizer and Rudder

1. Locate horizontal stab.
2. Carefully slide horizontal stab into fuselage, making sure control surface horn is on top.
3. Use included strips (4 pieces) of clear tape to secure stab to tail fillet. You should use 1 strip for top and bottom of each side.
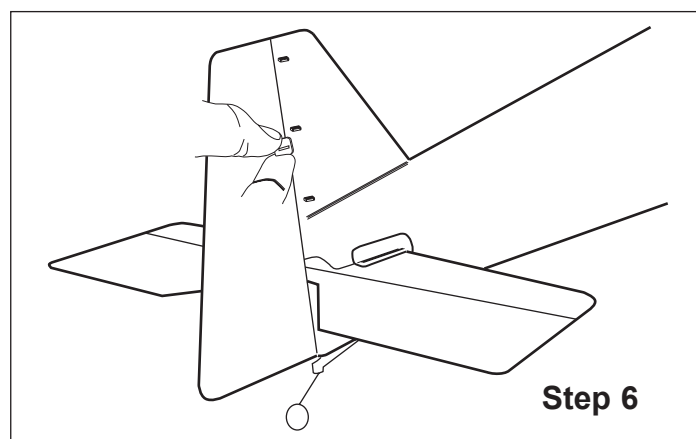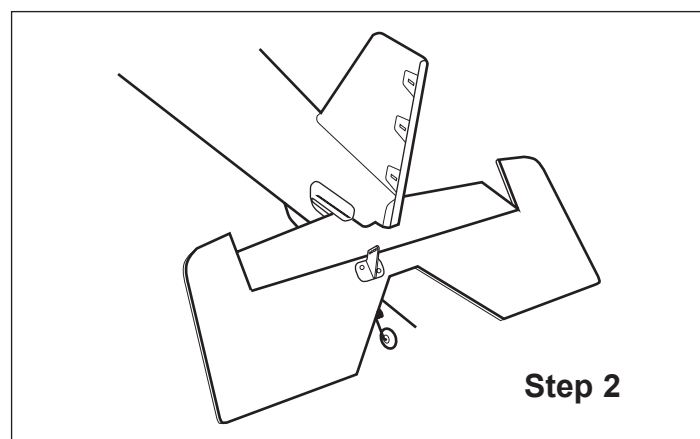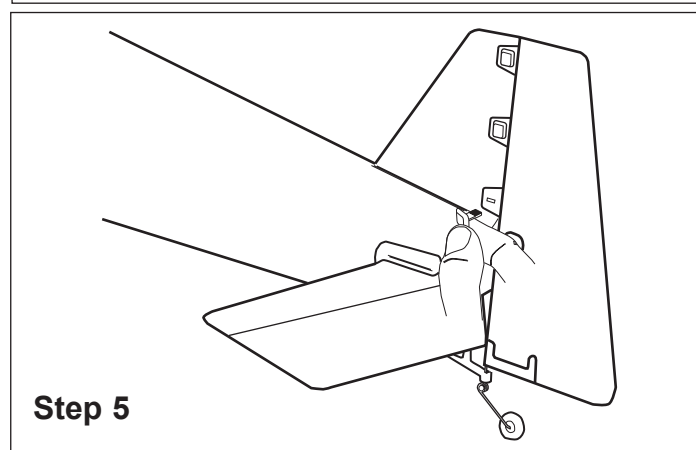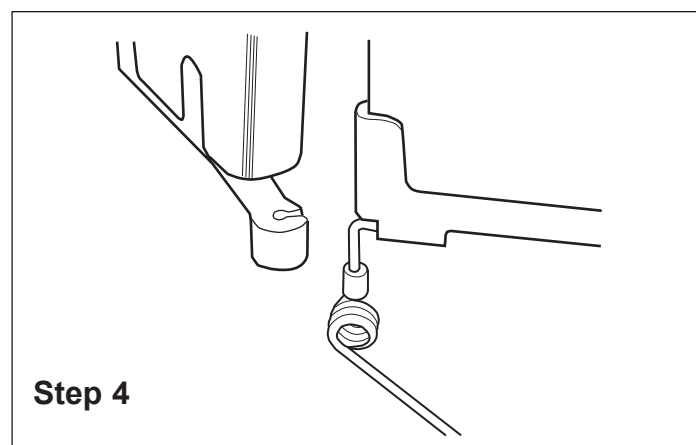4. Locate rudder. Carefully snap tail wheel wire into the clip on bottom of fuse as shown.
5. Use the three pins that are supplied to connect. rudder to stab, as shown. Do this by pushing pins in carefully.
6. Install keepers on backside to secure pins as shown.
7. Attach rudder and elevator pushrods to respective control horns (outer holes of control horns for both).

Note: It may be necessary to re-trim control surfaces prior to flight.

Step 4

Step 5

Step 2

Step 3

Apply Tape

Step 6

Step 7

Center of Gravity Information

Your ParkZone Typhoon 2 3D Plug-N-Play aircraft can be powered by either a 9-cell Ni-MH 1000mAh battery pack (PKZ1027), or by the ParkZone 3S 1800mAh (PKZ1031) or 1800mAh battery pack (PKZ1031).

The center of gravity (CG) for your Typhoon 2 3D PNP, with the 9-cell Ni-MH pack, is approximately 3.50 inches (90mm) back from the leading edge of the wing. The CG with the 3S 1800mAh Li-Po is approximately 3.50 inches (89mm) back from the leading edge of the wing.

Additionally, you may choose to make the first several flights with the included spanner (prop wrench) taped to the inside or bottom of the cowl. This will add .3 ounces 8.5 g) and may help you to get used to the flight characteristics of this 3D airplane.
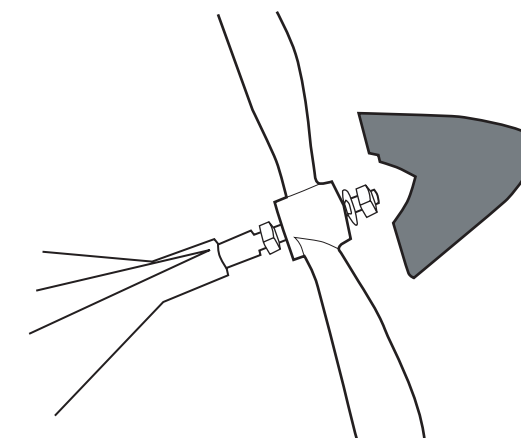
Aileron, Elevator, and Rudder Throws

The recommended throws in low rate are:

Ailerons: +/- .75 inches (20mm)
Elevator: +/- 1.40 inches (35mm)
Rudder: +/- 1.00 inch (25mm)
The recommended throws in high rate are:
Ailerons: +/- 1.25 inches (30mm)
Elevator: +/- 2.00 inches (50mm)
Rudder: +/- 2.00 inches (50mm)

Your Typhoon 2 3D PNP should fly great between these ranges.

Step 5

Installing the Propeller and Spinner

Your Typhoon 3D PNP has two props that are included. You can select the prop that best works with your flying style.

A. 13.5 x 7 (PKZ1006): This prop is recommended for the first several flights on your plane. This prop will allow your plane to fly a bit slower, but is also the setup for maximum vertical power (especially with the 9-cell Ni-MH pack).

B. 12 x 8.75 (PKZ1007): This prop will allow you to fly at faster speeds and help with certain aerobatic maneuvers. This propeller is ideal for the ParkZone 3S 1800mAh Li-Po battery pack. When you have selected the propeller that best works for you, install and secure it making sure not to forget any of the necessary hardware.

1. Slide propeller on. Make sure pitch numbers on prop are visible from front of airplane.
2. Slide washer on first. Next, screw the nut on and tighten securely.
3. Attach spinner.

Step 6

Installing the Receiver

Carefully plug in the servo leads into the corresponding channels of the receiver you have chosen. The servo plugs may have to be trimmed carefully with a hobby knife if you are using a JR® or HiTec radio system in order to fit correctly into the receiver.

Confirm that the servo leads/plugs are in the correct channel of the receiver. Do this by:

1. Turning on the transmitter.
2. Installing a charged flight battery.
3. Turning on receiver switch.

4. Check 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 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.

Your Typhoon 2 3D PNP comes out of the box with the E-flite® 25-amp brushless ESC. This controller has been designed for use in radio control aircraft and is designed to support motor currents up to 25 amps continuous, and up to 4 micro servos with a 2- to 3-cell Li-Po battery. It is suitable to use with most radio brands.
The E-flite 25A ESC comes in an impressive plastic case with exposed, finned heat sinks for both of the motor drive mosfets and, unlike many controllers, there is also a finned heat sink fitted to the BEC regulators to give a more reliable and more powerful power supply to the servos. If you intend to fly your Typhoon 2 3D PNP stock, then there is no need to program your ESC. It comes installed with the default settings. If you intend to re-program the ESC, we strongly recommend removing the propeller first in order to keep it from spinning if the motor is accidentally engaged. 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 25-amp ESC Features:
- Two soft cut settings (for 2- and 3-cell Li-Po battery packs)
- 70% Smart Cut feature
- Brake option
- Timing options for up to 4-pole inrunner and 4-pole outrunner motors
- 2 setting options for the throttle input range

Using Your E-flite 25-Amp Brushless Controller:

The E-flite 25A 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 tell you what setting you have for the soft cut voltage every time you plug in the battery by first making a low, long beep to show startup. Then, it makes 2 or 3 medium length, mid-tone beeps to indicate the cell count (or 7 beeps if 70% Smart Cut is selected), helping you to check the setting before every flight. To prepare for flight, you should first turn on your transmitter and ensure the throttle is set to the Idle/Off position. Next, plug in the flight pack to the speed control and listen for the tones to indicate soft-cut voltage. After the controller has indicated the cell count, the controller will make one set of 3 medium length, rising tones to tell you it is armed and ready to fly, or 2 sets of fast rising tones if you are entering the programming mode. For your own safety, and the safety of others, you should

always treat the motor and propeller as though they are "live" and dangerous, remembering the motor could start at any time. Keep any body parts, clothing and tools clear of the propeller arc. Never leave the battery connected when you are not flying the aircraft. Always remove the battery pack from the model before charging the battery, and when finished flying.

Programming:

The E-flite 25-amp programming sequence is designed to be very simple and intuitive. It is a simple menu system that should be very easy to learn and remember.

Stick Up = Full Throttle
Stick Down = Idle
Default Setup for E-flite 25-amp ESC:
- 3S auto-cutoff
- Brake inactive
- 4-pole and greater timing
- Auto setting throttle input range

Programming Mode:

1. With the battery disconnected from the controller, and the transmitter turned on, first move the throttle stick to the full power 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, and the controller will beep 1 time, indicating you are at menu item number 1.
4. The controller will now wait 5 seconds for you to make your selection, move the stick to Full Throttle for "Yes," or to Idle for "No."
5. When you have made a valid selection, the control will beep once with a lower tone and then 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. Please note that you do not need to program every menu item. You can simply exit the programming mode after you have made the required selections by:
   a. Moving the throttle stick to idle, after making your selection;
   b. Leaving it in the idle position for approximately 8 seconds (if you made no selection), until you hear one set of 3 medium length rising tones that indicate the controller has armed the motor; or
   c. By simply unplugging the battery.

Range Checking your Radio System

After you have finished the final assembly, it is time to range check the radio system within the Typhoon 2 3D 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 transmitter with antenna down. Next, turn on receiver (switch on the plane). With airplane on the ground and motor running, you should walk away approximately 100 feet and still have full control of all functions. If this is not the case, do not fly! Call Product Support at 1-877-504-0233.

- Always make sure that all controls are functioning per the transmitter input that you are giving. This includes ailerons, rudder, elevator, and throttle.
- Always make sure you have fully charged the transmitter batteries.

Always remove the flight battery from the airplane when you are done flying, or when you are on the way to the flying field. The switch on the fuselage is for short-term use only (when you are at the field). Leaving the battery plugged in the airplane for an extended time could cause permanent damage to your battery (especially if you are using a Li-Po battery).
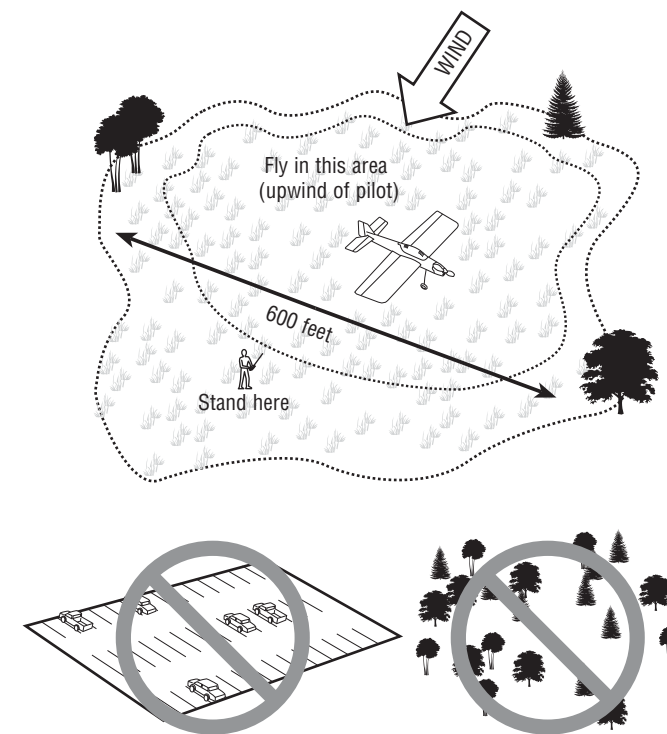
Flying

Always choose a wide-open space for flying your ParkZone Typhoon 2 3D 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 Typhoon in light winds.

Prior to each flight:
- Always make sure your Typhoon 2 3D PNP is properly trimmed. From time to time, it may be necessary to re-trim your airplane. Simply turn on the radio system, with the flight battery plugged into the battery port and check all control surfaces. Most trim changes should be able to be made using the trim levers on the transmitter. Greater changes will need to be made by removing the clevis from the control horn and turning in on the pushrod in the appropriate direction.
- 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 Typhoon 2 3D PNP is VERY maneuverable on high rates and requires a lot of experience to handle properly.

WIND

Fly in this area (upwind of pilot)

600 feet

Stand here

Warranty and Follow-Up Procedures

Warranty Period:

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warranties 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 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.**

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

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

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

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Please call 877-504-0233 with any questions or concerns regarding this product or warranty.

Replacement Parts

Make sure that you keep your Typhoon 2 3D PNP 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:	Retail:
PKZ1006	13.5 x 7 Propeller: Typhoon 3D/2 3D	$3.49
PKZ1007	12 x 8.75 Propeller: Typhoon 3D/2 3D	$3.49
PKZ1090	DSV130M Digital Metal Gear Servo	$13.99
PKZ1064	Metal Gear Set: DSV130M	$5.99
PKZ4302	Decal Set: Typhoon 2 3D	$4.99
PKZ4104	Prop Shaft w/Hardware: Typhoon 3D/2 3D	$2.29
PKZ4107	Spinner: Typhoon 3D/2 3D	$2.29
PKZ4113	Canopy: Typhoon 3D/2 3D	$3.29
PKZ4114	Firewall w/Screws: Typhoon 3D	$2.19
PKZ4315	Instruction Manual: Typhoon 2 3D	$0.99
PKZ4116	Brushless Motor w/Pinion: Typhoon 3D/2 3D	$46.99
PKZ4317	Instruction Manual: Typhoon 2 3D PNP	$0.99
PKZ4320	Wing Set: Typhoon 2 3D	$21.99
PKZ4321	SFG's: Typhoon 2 3D	$9.99
PKZ4121	Control Horns w/Hardware: Typhoon 3D/2 3D	$4.99
PKZ4122	Pushrod and Clevis Set: Typhoon 3D/2 3D	$2.59
PKZ4123	Ailerons (2) w/Parts: Typhoon 3D/2 3D	$9.99
PKZ4124	Vertical Tail w/Parts: Typhoon 3D/2 3D	$9.99
PKZ4325	Horizontal Tail w/Parts: Typhoon 2 3D	$9.99
PKZ4126	Cowl: Typhoon 3D/2 3D	$2.49
PKZ4128	Gearbox w/Pinion: Typhoon 3D/2 3D	$8.99
PKZ4367	Bare Fuselage: Typhoon 3D/2 3D	$28.99

Optional Parts

PKZ4161	FM Crystal Set CH17, 72.130	$9.99
PKZ4162	FM Crystal Set CH19, 72.170	$9.99
PKZ4163	FM Crystal Set CH21, 72.210	$9.99
PKZ4164	FM Crystal Set CH50, 72.790	$9.99
PKZ4165	FM Crystal Set CH52, 72.830	$9.99
PKZ4166	FM Crystal Set CH54, 72.870	$9.99
PKZ4341	Tx: (T672) CH 17, 72.130: Typhoon 2 3D	$33.99
PKZ4351	Rx: (RA672) CH 17, 72.130: Typhoon 2 3D	$29.99
PKZ1040	2- to 3-Cell DC Li-Po Balancing Charger	$34.99
PKZ1030	11.1V 2200mAh Li-Po Battery	$75.99
PKZ1031	11.1V 1800mAh Li-Po Battery	$69.99
EFLA1025	25-Amp Pro Brushless ESC	$59.99

PKZ4317

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