# BLADE

# SCIMITAR 170

**Instruction Manual**
**Bedienungsanleitung**
**Manuel d'utilisation**
**Manuale di Istruzioni**

**RTF**

**BNF**

## NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit www.horizonhobby.com and click on the support tab for this product.

## Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

**WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

**CAUTION:** Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

**NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.

⚠ **WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. 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. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This 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 serious injury.

**Age Recommendation: Not for children under 14 years. This is not a toy.**

## Safety Precautions and Warnings

- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- Never place any portion of the model in your mouth as it could cause serious injury or even death.
- Never operate your model with low transmitter batteries.
- Always keep aircraft in sight and under control.
- Always move the throttle fully down at rotor strike.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.

⚠ **WARNING AGAINST COUNTERFEIT PRODUCTS:** If you ever need to replace a Spektrum component found in a Horizon Hobby product, always purchase from Horizon Hobby, LLC or a Horizon Hobby authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, LLC disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum technology.

**If you are operating this product in North America, you are required to have an Amateur Radio (HAM) license. Visit www.arrl.org for more information.**

This product uses Betaflight Third Party Software in portions of its coding. For more information on Betaflight Software, please visit: https://github.com/betaflight/betaflight/wiki.

**THIRD PARTY SOFTWARE:** This product may include code developed by one or more third parties ("Third Party Software"). Some Third Party Software may be subject to other terms and conditions that may be available for download with the product documentation. Notwithstanding the terms and conditions of this Agreement, the Third Party Software is licensed to you subject to the terms and conditions of the software license agreement identified in the open source software disclosure. If the third party terms and conditions include licenses that provide for the availability of source code (such as the GNU General Public License), the open source software disclosure or the media on which the software may be delivered will provide instructions where a copy of such source code can be obtained.

# Table of Contents

| Specifications | | | |
|---|---|---|---|
| **Length** | 7.876 in (200mm) | **Max Propeller Diameter** | 4 in (102mm) |
| **Height** | 1.57 in (40mm) | **Flying Weight** | 15.5 oz (440g) |

**As of this printing, you are required to register with the FAA if you own this product.**
For up-to-date information on how to register with the FAA, please visit https://registermyuas.faa.gov/.
For additional assistance on regulations and guidance on UAS usage, visit knowbeforeyoufly.org/.

**Box Contents:**
• Scimitar 170 FPV Quadcopter
  - Spektrum™ Quad Race Serial Receiver w/telemetry (SPM4649T)
  - 4 x 1407 2820KV FPV Racing Motor, Yellow (BLHA1026)
  - 4 x Prop Guards (BLH02309)
  - 4 in 1 ESC (BLH02205)
  - Flight Controller (SPMFC3208)
  - 25/200/600mW Adjustable Video Transmitter (SPMVT1000) included in BLH02350
  - 25mW Video Transmitter (SPMVT1000EU) included in BLH02350EU
  - 600TVL CMOS FPV Camera (SPMVC602)
• 4.3" FPV Video Monitor with DVR (SPMVM435) (RTF Only)
• DXe Transmitter (SPMR1000) (RTF Only)

**Included With the RTF Package:**
• Thrust 14.8V 850mAh 35C 4S Battery
  (EFLRB8504S35)
• Thrust 14.8V 1000mAh 35C 4S Battery
  (EFLRB10004S35)
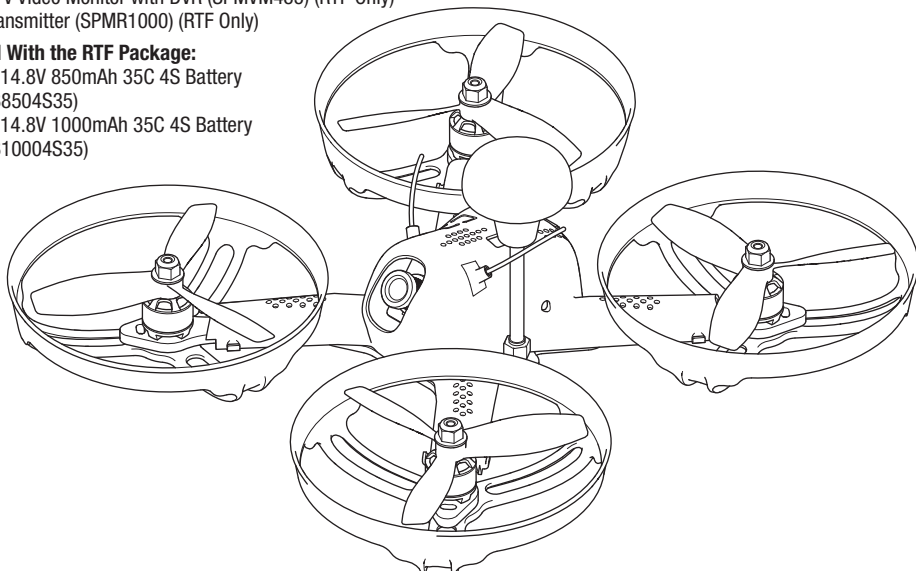


*To receive product updates, special offers and more, register your product at www.bladehelis.com.*
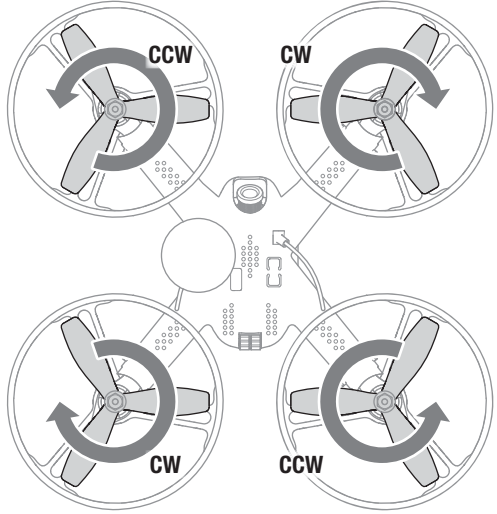
**NOTICE:** Consult local laws and ordinances before operating FPV (first person view) equipment. In some areas, FPV operation may be limited or prohibited. You are responsible for operating this product in a legal and responsible manner.

## First Flight Preparation

• Remove and inspect contents
• Begin charging the flight battery
• Install the transmitter batteries (RTF only)
• Program your computer transmitter (BNF only)
• Install the flight battery in the aircraft
  (once it has been fully charged)
• Bind your transmitter (BNF only)
• Familiarize yourself with the controls
• Find a suitable area for flying

## Flying Checklist

❏ **Always turn the transmitter on first**
❏ Plug the flight battery into the lead from the ESC
❏ Allow the ESC to initialize and arm properly
❏ Fly the model
❏ Land the model
❏ Unplug the flight battery from the ESC
❏ **Always turn the transmitter off last**

## Installing the Propellers

1. Refer to the illustration for the proper motor rotation and propeller location.

2. The propellers have **"CW"** or **"CCW"** marked on one blade to show proper location and rotation. Match the propeller location to the illustration.

3. Secure the propellers using the provided lock nuts. **Do not** overtighten the nuts as damage to the propellers or motors may result.
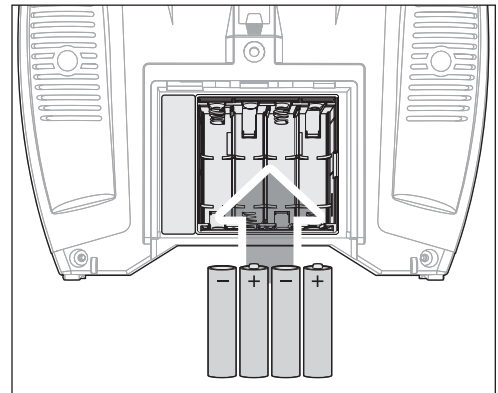


## Installing the DXe Transmitter Batteries (RTF)

The LED indicator flashes and the transmitter beeps progressively faster as the battery voltage drops.

Replace the transmitter batteries when the transmitter begins to beep.



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# Charging Warnings

⚠️ **CAUTION:** All instructions and warnings must be followed exactly. Mishandling of Li-Po batteries can result in a fire, personal injury and/or property damage.

- **NEVER LEAVE CHARGING BATTERIES UNATTENDED.**
- **NEVER CHARGE BATTERIES OVERNIGHT.**
- By handling, charging or using the included Li-Po battery, you assume all risks associated with lithium batteries.
- If at any time the battery begins to balloon or swell, discontinue use immediately. If charging or discharging, discontinue and disconnect. Continuing to use, charge or discharge a battery that is ballooning or swelling can result in fire.
- Always store the battery at room temperature in a dry area for best results.
- Always transport or temporarily store the battery in a temperature range of 40–120º F (5–49° C).
- Do not store battery or model in a car or direct sunlight. If stored in a hot car, the battery can be damaged or even catch fire.

- Always charge batteries away from flammable materials.
- Always inspect the battery before charging.
- Always disconnect the battery after charging, and let the charger cool between charges.
- Always constantly monitor the temperature of the battery pack while charging.
- ONLY USE A CHARGER SPECIFICALLY DESIGNED TO CHARGE LI-PO BATTERIES. Failure to charge the battery with a compatible charger may cause a fire resulting in personal injury and/or property damage.
- Never discharge Li-Po cells to below 3V under load.
- Never cover warning labels with hook and loop strips.
- Never charge batteries outside recommended levels.
- Never charge damaged batteries.
- Never attempt to dismantle or alter the charger.
- Never allow minors to charge battery packs.
- Never charge batteries in extremely hot or cold places (recommended between 40–120° F or (5–49° C) or place in direct sunlight.

# Battery Charging (RTF)

The Prophet™ Sport Mini 50W comes with a built-in power supply. Connect the AC power cord to the AC socket. Follow these steps to charge the battery included with the RTF Scimitar 170 quadcopter:

**To Change Settings:**
1. Insert the AC power cord into the charger.
2. Insert the AC cord into a wall socket. All four LEDs will stay lit for 1–2 seconds. The battery type LED will blink green and red, indicating the charger is ready to charge.
3. Press **Batt Type/Start/Stop** to select the LiPo battery type.
4. Use the **Charge Current** switch to select the proper charging current (1A, 2A, 3A, 4A).
   *The recommended charge rate is equal to the battery capacity. The charge current varies from 1A (1000mA) to 4A (4000mA).*
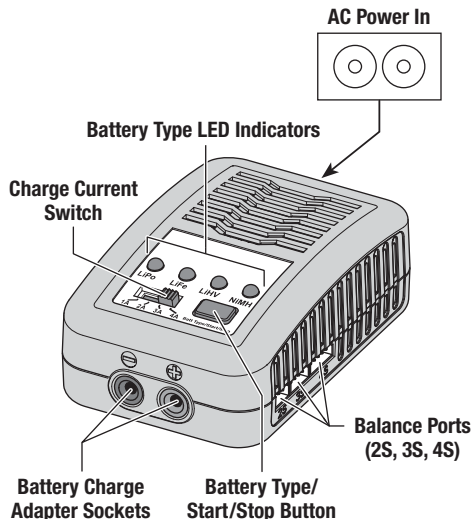
**To Charge:**
1. Connect the battery charge adapter to the charge adapter sockets (front of charger), noting correct polarity.

⚠️ **WARNING:** Never connect the charge adapter to the battery power lead before connecting the charge adapter to the charger. The charge adapter connectors could short, causing the battery to overheat or catch fire.

2. Connect the main power lead from the battery to the battery charge adapter, noting correct polarity.

⚠️ **WARNING:** Never disconnect the charge adapter from the charger with the battery power lead connected to the charge adapter. The charge adapter connectors could short, causing the battery to overheat or catch fire.

3. Connect the battery balance wire to the correct balance port (side of charger), according to the number of cells in the battery pack.
4. To initiate charging, press and hold **Batt Type/Start/Stop** for 3 seconds. The LEDs will change to indicate status. To discontinue charging, press and hold **Batt Type/Start/Stop** for 3 seconds.



**AC Power In**

**Battery Type LED Indicators**

**Charge Current Switch**

**Balance Ports (2S, 3S, 4S)**

**Battery Charge Adapter Sockets**

**Battery Type/ Start/Stop Button**

⚠️ **WARNING:** Always confirm the charger settings are correct for your battery before starting the charge process.

| LED | Status |
|---|---|
| Green/Red blinking | Ready to charge |
| Red solid | Battery is less than 25% charged |
| Red blinking | 25% - 50% charged |
| Yellow blinking | 51% - 75% charged |
| Green blinking | 76% - 99% charged |
| Green solid | Fully charged |

## Transmitter Setup

The Spektrum DXe transmitter included with the RTF version of the quadcopter is programmed at the factory. If needed, the setup file can be downloaded at *www.spektrumrc.com*.

**DX6, DX6e, DX7 (Gen 2), DX8 (Gen 2), DX9, iX12, DX18, DX20**

| SETUP LIST | |
|---|---|
| **Model Type** | |
| Airplane | |
| **F-Mode Setup** | |
| Switch 1 | Inhibit |
| Switch 2 | Inhibit |
| **Channel Assign** | |
| Channel Input Config | |
| 1 Throttle | |
| 2 Aileron | |
| 3 Elevator | |
| 4 Rudder | |
| 5 Gear | Switch B |
| 6 Aux 1 | Switch H |
| **Frame Rate** | |
| 11ms* | |
| DSMX | |

| FUNCTION LIST | | |
|---|---|---|
| **Servo Setup** | | |
| Chan | Travel | Reverse |
| THR | 150/150 | Normal |
| AIL | 148/148 | Reverse |
| ELE | 148/148 | Normal |
| RUD | 148/148 | Reverse |
| GER | 100/100 | Normal |
| AUX1 | 100/100 | Normal |

| D/R & Expo | | | |
|---|---|---|---|
| Chan | Switch Pos | D/R | Expo |
| | 0 | 100/100 | 0 |
| AILE | 1 | 100/100 | 0 |
| | 2 | 100/100 | 0 |
| | 0 | 100/100 | 0 |
| ELEV | 1 | 100/100 | 0 |
| | 2 | 100/100 | 0 |

| Timer | |
|---|---|
| Mode | Count Down |
| Time | 3:00 |
| Start | Throttle Out |
| Over | 25% |
| One Time | Inhibit |

**Switch Functions**
Flight Mode Switch = **Switch B**
Motor Arm Switch = **Switch H**

To download the setup file for the Spektrum™ DXe transmitter, refer to *www.spektrumrc.com*.
For telemetry setup information, refer to your transmitter manual or *www.spektrumrc.com*.

* The DX6e operates at 22ms frame rate and cannot be changed.

## Installing the Flight Battery

1. Set the motor arm switch to OFF (position 1).
2. Lower the throttle.
3. Power on the transmitter.
4. Attach hook material to the quadcopter frame and loop material to the battery.
5. Install the flight battery on the quadcopter frame and secure it with the hook and loop strap.
6. Connect the battery cable to the aircraft power lead, noting correct polarity. Do not move the quadcopter until the receiver initializes.



**⚠ CAUTION:** Connecting the battery to the aircraft power lead with reversed polarity will cause damage to the power distribution board, ESCs and the battery. Damage caused by incorrectly connecting the battery is not covered under warranty.

7. The quadcopter motors will emit initialization tones, indicating the ESC is armed.
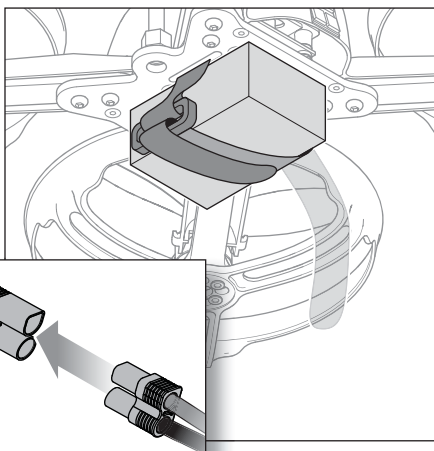
**⚠ CAUTION:** Always disconnect the Li-Po battery from the quadcopter when not flying to avoid over-discharging the battery. Batteries discharged to a voltage lower than the lowest approved voltage may become damaged, resulting in loss of performance and potential fire when batteries are charged.

## Transmitter and Receiver Binding

The transmitter included with the RTF version of this aircraft is pre-bound to the receiver at the factory. If it becomes necessary to re-bind the transmitter to the receiver, follow the binding procedure below.

To bind or re-bind your quadcopter to your chosen transmitter, follow the directions below.

| Binding Procedure |
| --- |
| 1. Select the correct model in your transmitter. |
| 2. Power off your transmitter. |
| 3. Lower the throttle fully. |
| 4. Power the quadcopter on while pressing the bind button through the left side of the canopy with the end of a hex driver, as shown in the illustration. |
| 5. Follow the procedures of your specific transmitter to enter Bind Mode. |
| 6. The receiver LED glows solid orange indicating binding was successful. |
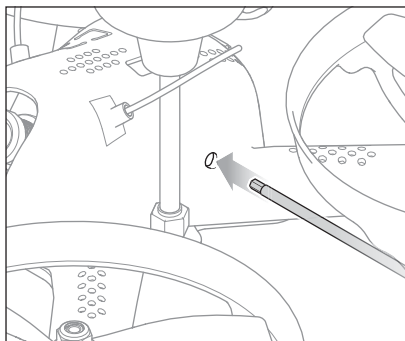
If you encounter problems, obey binding instructions and refer to the troubleshooting guide for other instructions.

If needed, contact the appropriate Horizon Product Support office. For a list of compatible DSM® transmitters, please visit *www.bindnfly.com*.

### Failsafe

The included receiver does not have failsafe capabilities. Failsafe is detected at the flight controller. In the event of a loss of signal to the receiver the flight controller will cut power to the motors to prevent a fly-away situation.

## DXe Transmitter Control (RTF)

**Flight Mode Switch**
- 0 = Angle Mode
- 1 = Air Mode
- 2 = Acro Mode

**Bind Switch**

**Motor Arm/Disarm Switch**

**Dual Rate Switch**

**LED Indicator**

F

A

E

B

D

C

**On/Off Switch**
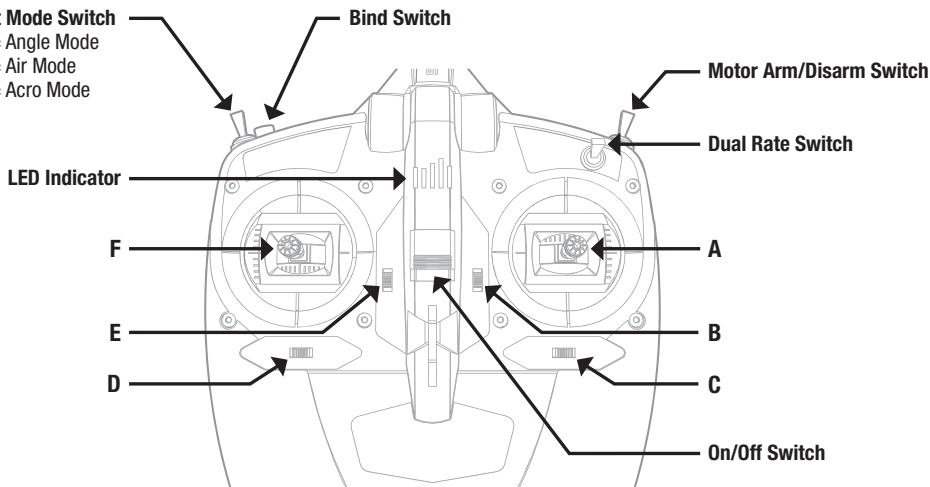
|  | A | B | C | D | E | F |
| --- | --- | --- | --- | --- | --- | --- |
| **Mode 1** | **Aileron** *(Left/Right)* **Throttle** *(Up/Down)* | **Throttle Trim** | **Aileron Trim** | **Rudder Trim** | **Elevator Trim** | **Rudder** *(Left/Right)* **Elevator** *(Up/Down)* |
| **Mode 2** *(Default)* | **Aileron** *(Left/Right)* **Elevator** *(Up/Down)* | **Elevator Trim** | **Aileron Trim** | **Rudder Trim** | **Throttle Trim** | **Rudder** *(Left/Right)* **Throttle** *(Up/Down)* |

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## Understanding the Primary Flight Controls

If you are not familiar with the controls of your quadcopter, take a few minutes to familiarize yourself with them before attempting your first flight.
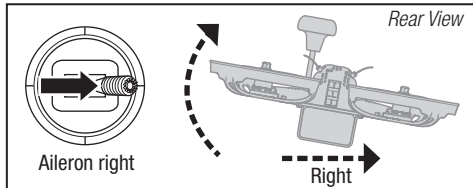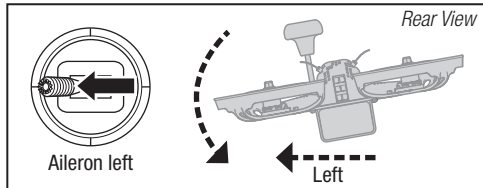
**Throttle**

| | |
|---|---|
| *Left Side View* | *Left Side View* |
| Throttle up    Climb | Descend    Throttle down |

**Rudder**

| | |
|---|---|
| Rudder left    Nose Yaws Left | Rudder right    Nose Yaws Right |

**Elevator**

| | |
|---|---|
| *Left Side View* | *Left Side View* |
| Elevator down    Forward | Elevator up    Backward |

**Aileron**

| | |
|---|---|
| *Rear View* | *Rear View* |
| Aileron left    Left | Aileron right    Right |
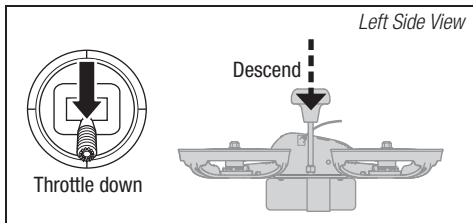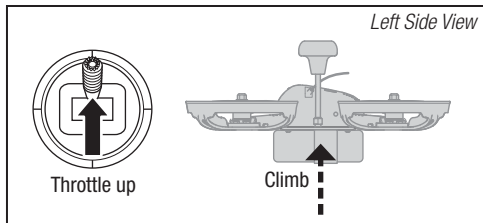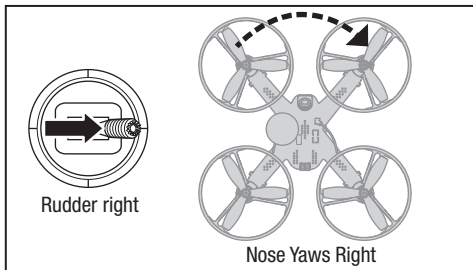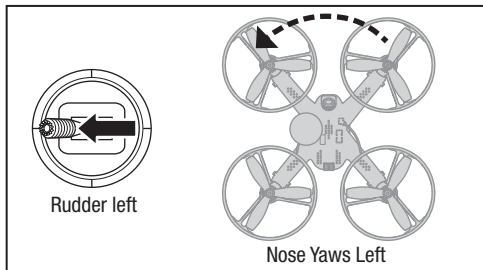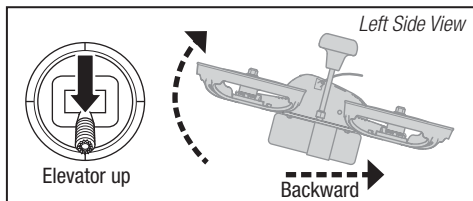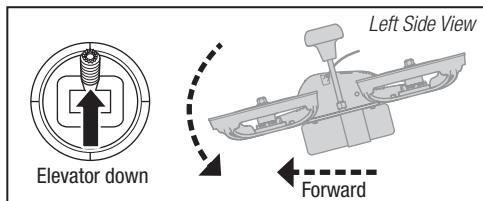
## Adjusting the FPV Camera Angle
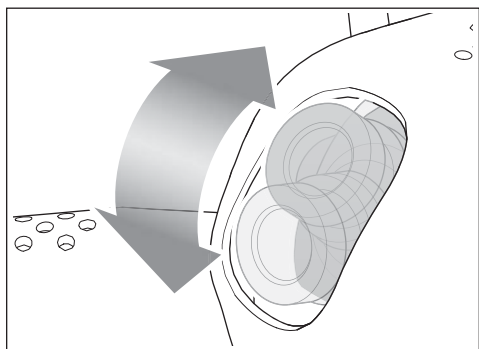
The angle of the FPV camera is adjusted by gently pushing the lense up or down to the desired angle.

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# Using the Video Transmitter

Consult local laws and ordinances before operating FPV equipment. In some areas, FPV operation may be limited or prohibited. You are responsible for operating this product in a legal and responsible manner.

See the Available Frequency table to find the desired video channel and band. The video transmitter channel and band are changed using the buttons on the top of the quadcopter, as shown. There are two rows of LEDs visible through the LED window. The row of red LEDs indicates the channel selected (1-8). The row of blue LEDs indicates the selected band (A, B, E, F, R). The green LEDs indicate the video transmitter output power level selected.

Only change the video channel and band when the video transmitter is not transmitting a signal or is in Pit Mode. If any of the green LEDs are glowing solid, see the directions below to stop transmitting a video signal prior to changing the channel or band.

**Channel and Band Selection:**
1. A short press of button **B** will change channels. Quickly press and release the button once for each channel until the desired channel is reached.
2. A long press of button **B** will change the band. Press and hold button **B** for several seconds and release for each band change.

**Power Level Selection:**
1. Press and hold button **A** to change the power output. All green LEDs off means RF is off, one flashing green LED is Pit Mode, one solid green LED is 25mW, two solid green LEDs is 200mW, three solid green LEDs is 600mW.

### Available Frequencies, North America (mHz): (BLH02200, BLH02280)

| Band | CH 1 | CH 2 | CH 3 | CH 4 | CH 5 | CH 6 | CH 7 | CH 8 |
|------|------|------|------|------|------|------|------|------|
| Band A | 5865 | 5845 | 5825 | 5805 | 5785 | 5765 | 5745 | 5725 |
| Band B | 5733 | 5752 | 5771 | 5790 | 5809 | 5828 | 5847 | 5866 |
| Band E | 5705 | 5685 | 5665 | 5665 | 5885 | 5905 | 5905 | 5905 |
| FS/IRC | 5740 | 5760 | 5780 | 5800 | 5820 | 5840 | 5860 | 5880 |
| RaceBand | 5658 | 5695 | 5732 | 5769 | 5806 | 5843 | 5880 | 5917 |

### Available Frequencies, European Union (mHz): (BLH02280EU)

| Band | CH 1 | CH 2 | CH 3 | CH 4 | CH 5 | CH 6 | CH 7 | CH 8 |
|------|------|------|------|------|------|------|------|------|
| Band A | 5865 | 5845 | 5825 | 5805 | 5785 | 5765 | 5745 | 5725 |
| Band B | 5733 | 5752 | 5771 | 5790 | 5809 | 5828 | 5847 | 5866 |
| FS/IRC | 5740 | 5760 | 5780 | 5800 | 5820 | 5840 | 5860 | 5880 |
| RaceBand | 5658 | 5695 | 5732 | 5769 | 5806 | 5843 | 5880 | 5917 |
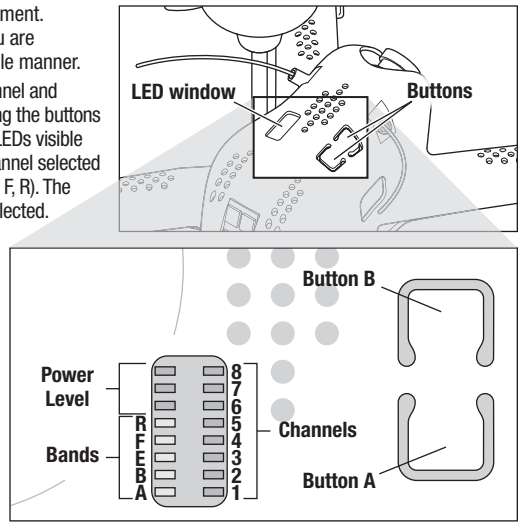
## 4.3 inch Video Monitor with DVR Features

**5.8GHz Antenna connector**

**Menu Buttons:**
 Use the **+** and **–** buttons to modify:
   Brightness        Contrast
   Color            Mode (16:9, 4:3)
   Language        Reset

**Channel Selection Button**
 Single push to change channel

**Frequency Band Button**
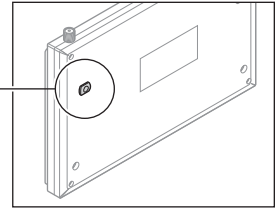 Single push to change band

**Micro Memory Card Slot**

**ON/Off Switch**

**Charge Status LED**
 Red = charging
 Green = charged

**AV In**

**5V Micro USB Charge Port**
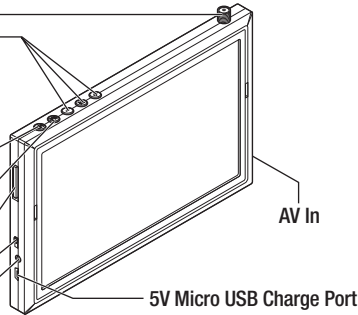
**Record button**

## Using the Video Monitor

⚠ **CAUTION:** Do not power the monitor on without the antenna attached. Doing so will damage the video transmitter and receiver amplifiers. Amplifier damage is not covered by warranty.

1. Before using the Spektrum™ 4.3 inch Video Monitor, make sure the monitor is fully charged. Connect the micro USB connector to a 5V USB power source. The charge indicator LED will glow red while charging and green when the monitor is fully charged.

2. Attach the included antenna to the antenna connector located on the top of the monitor.
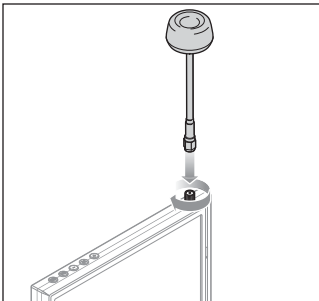
3. To mount the video monitor to a transmitter, install the transmitter mount as shown. The mount comes with two adapters to fit most transmitter neck strap mounts. Once installed on the transmitter, use the mounts built in neck strap loop to mount a neckstrap if desired.
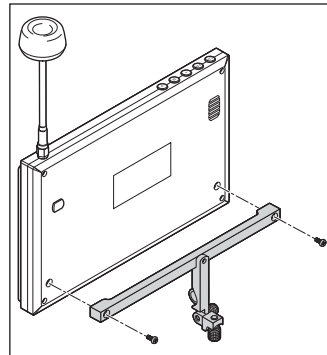
4. Insert a micro memory card (not included) in the slot on the side of the video monitor. Press the card in until it locks. To remove the card, press in slightly and release until the card is released.Always insert the memory card before powering on the video monitor.

5. Power on the video monitor and look for a clear channel. Clear channels will have a consistent static background. Channels with interference will display horizontal static lines. Select one of the clear channels.

6. Once you have chosen a clear channel on the monitor, select the same channel on the video transmitter.

# Preparing the Scimitar 170 Quadcopter for Flight

1. Before each flight, ALWAYS power on the transmitter before connecting the flight battery to the quadcopter. After each flight, disconnect the flight battery from the quadcopter before powering off the transmitter.

**NOTICE:** Connecting the flight battery before powering on the transmitter can start the binding process. Please see the *Transmitter and Receiver Binding* section of this manual for more information.

2. When the ESC beeps, the flight controller is initialized and ready for flight.

The flight controller will not arm the motors until the throttle stick is in the lowest possible position.

# Flight Mode and Rate Selection

- In angle mode (*switch position 0*), the quadcopter will self-level and has a bank angle limit of approximately 60 degrees.
- In air mode (*switch position 1*), the quadcopter will not self-level and does not have a bank angle limit. At low throttle, the flight controller will continue to stabilize the quadcopter to hold whatever attitude was last commanded. This mode is useful for flying smooth aerobatic maneuvers at both high and low throttle settings.
- In acro mode (*switch position 2*), the quadcopter will not self-level and does not have a bank angle limit. At low throttle, the flight controller will not stabilize the quadcopter. The pilot must actively control the quadcopter to maintain a desired attitude. This mode is most preferred when immediate changes in altitude are desired, such as in racing. Use rates and expo to tune the performance according to your flying style.

Refer to the *Transmitter Setup* for transmitter switch selection and specific setup information.

# Flying the Scimitar® 170 Quadcopter

### Takeoff

When you are prepared to fly, start the motors by activating the motor arm switch (switch H), as programmed in the transmitter setup section. Increase the throttle until the model is approximately 2 ft. (600mm) off the ground and check the trim so the model flies as desired. Once the trim is adjusted, begin flying the model.

Flight times for the included battery will vary according to how aggressively the throttle is used.

### Low Voltage Cutoff (LVC)

LVC decreases the power to the motors when the battery voltage gets low. When the motor power decreases, land the aircraft immediately and recharge the flight battery.

LVC does not prevent the battery from over-discharge during storage.

**NOTICE:** Repeated flying to LVC will damage the battery.

### Landing

To land, slowly decrease the throttle while in a low-level hover. After landing, stop the motors by changing the motor arm switch to the off position; disconnect and remove the battery from the aircraft after use to prevent over discharge. During storage, make sure the battery charge does not fall below 3V per cell.

# Post-Flight Inspection and Maintenance Checklist

⚠ **WARNING:** Remove the propellers from the motors prior to performing any troubleshooting or maintenance. Failure to do so may cause serious injury if the motors start unexpetedly.

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|---|---|---|
| | **Cleaning** | Make sure the battery is not connected before cleaning. Remove dust and debris with a soft brush or a dry, lint-free cloth. |
| | **Motors** | Replace the motor when the model will not fly steady or veers off when doing a climb out. |
| | **Wiring** | Make sure the wiring does not block moving parts. Replace damaged wiring and loose connectors. |
| | **Fasteners** | Make sure there are no loose screws, other fasteners or connectors. Do not over-tighten metal screws in plastic parts. Tighten screws so the parts are mated together, then turn the screw only 1/8th of a turn more. Do not use threadlock on or near plastic parts. |
| | **Propellers** | Make sure there is no damage to the propellers or other parts that move at high speed. Damage to these parts includes cracks, burrs, chips or scratches. Replace damaged parts before flying. |

## Troubleshooting Guide

⚠️ **WARNING:** Remove the propellers from the motors prior to performing any troubleshooting or maintenance. Failure to do so may cause serious injury if the motors start unexpetedly.

| Problem | Possible Cause | Solution |
|---|---|---|
| Quadcopter control response is inconsistent or requires extra trim to neutralize movement | Quadcopter not initialized on a level surface | Disconnect the flight battery, center the control trim and re-initialize the quadcopter |
| | Battery not correctly placed | Adjust battery position so quadcopter balances in the center of the frame |
| Quadcopter will not respond to throttle | Motor arm switch is in the OFF position | Set the motor arm switch to the ON position |
| | Throttle too high and/or throttle trim is too high | Reset controls with the throttle stick and throttle trim at the lowest setting |
| | Quadcopter moved during initialization | Disconnect the flight battery and re-initialize the quadcopter while keeping the quadcopter from moving |
| | Throttle channel is reversed | Disconnect flight battery, reverse the throttle channel on the transmitter, recconnect flight battery |
| | Travel adjust settings not correct | Refer to the transmitter setup table for correct travel adjust settings. |
| Quadcopter does not function and smells burnt after connecting the flight battery | Flight battery connected with the wrong polarity | Replace the power distribution board. Connect the flight battery noting proper polarity |
| Quadcopter has reduced flight time or is underpowered | Flight battery charge is low | Completely recharge the flight battery |
| | Inadequate power to flight battery charger | Use a different power source for the charger |
| | Flight battery is damaged | Replace the flight battery and follow the flight battery instructions |
| | Flight conditions might be too cold | Make sure the battery is warm (room temperature) before use |
| Crashes immediately upon lift-off | Propellers in wrong locations or incorrect flight mode selected | Ensure propeller direction and motor direction are correct |
| | Aileron, elevator or rudder are reversed in the transmitter | Ensure aileron, elevator or rudder are not reversed |
| Difficulty binding | Bind button not pressed while powering on the quadcopter | Power off quadcopter and repeat bind process |
| | Bind switch or button was not held while transmitter was powered on | Power off transmitter and repeat bind process |
| | Transmitter too near aircraft during binding process | Power off the transmitter. Move the transmitter a larger distance from the aircraft or shield the aircraft from the transmitter using your body. Disconnect and reconnect the flight battery to the quadcopter. Follow the binding instructions |
| | Quadcopter or transmitter is too close to large metal object, wireless source or another transmitter | Move quadcopter and transmitter to another location and attempt binding again |
| Difficulty connecting (after binding) | Transmitter not powered on before the quadcopter | Power the quadcopter off. Power on the transmitter first and then the quadcopter. |
| | Less than a 5-second wait between first powering on the transmitter and connecting the flight battery to the quadcopter | Leave the transmitter powered on. Disconnect and reconnect the flight battery to the quadcopter |
| | The quadcopter is bound to a different model memory (ModelMatch™ transmitters only) | Select the correct model memory on the transmitter. Disconnect and reconnect the flight battery to the quadcopter |
| | Flight battery or transmitter battery charge is too low | Replace or recharge batteries |
| | Quadcopter or transmitter is too close to large metal object, wireless source or another transmitter | Move quadcopter and transmitter to another location and attempt connecting again |
| Static in FPV feed | Interference on chosen channel | Change the video transmitter and receiver channel per the Using the Micro Camera section |
| | Flying too close to 5.8 GHz WiFi source | Remove WiFi source or move to a different flying area |

# Parts Explosion
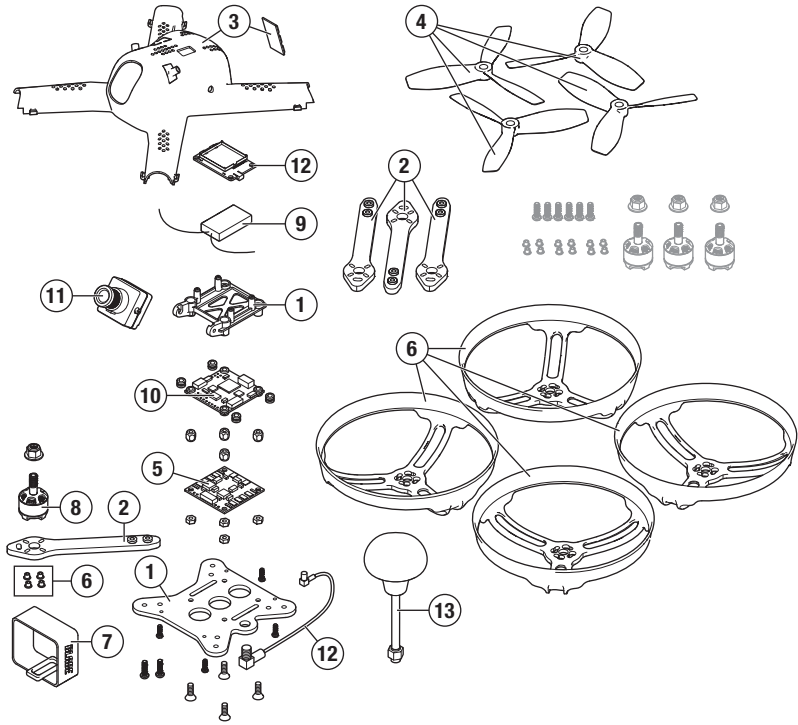


## Parts Listings

| | Part # | Description |
|---|---|---|
| 1 | LH02301 | Center Frame: Scimitar 215, 170 |
| 2 | BLH02303 | Arm Set (4): Scimitar 170 |
| 3 | BLH02304 | Pod with LED: Scimitar 215, 170 |
| 4 | BLH02306 | 4 inch FPV Props (4) |
| 5 | BLH02308 | 4in1 ESC BLHeli: Scimitar 170 |
| 6 | BLH02309 | Prop Guard Set: Scimitar 170 |
| 7 | BLH9403 | FPV Battery Strap: Theory X |
| 8 | BLHA1026 | 1407 2820KV FPV Motor, Yellow |
| 9 | SPM4649T | DSMX Quad Race Receiver w/telemetry |

| | Part # | Description |
|---|---|---|
| 10 | SPMFC3208 | Flight Controller w/ PDB |
| 11 | SPMVC602 | 600TVL CMOS FPV Camera |
| 12 | SPMVT1000 | 25/200/600mW Adjustable VTX (US only) |
| 12 | SPMVT1000EU | 25mW VTX (EU only) |
| 13 | SPMVX5801 | RHCP Omni straight connector |
| | SPMVM435 | 4.3" FPV Video Monitor with DVR (RTF Only) |
| | EFLB10004S65HV | Thrust FPV 1000mAh 4S 65C HV LiPo (RTF Only) |
| | EFLB13003S20 | 1300mAh 3S 11.1V 20C LiPo (RTF Only) |
| | SPMR1000 | DXe Transmitter Only (RTF Only) |

## Optional Parts

| Part # | Description |
|---|---|
| EFLRB13004S35 | 1300mAh 4S14.8V 35C LiPo Thrust |
| FSV1063 | Dominator V3 Modular WVGA Headset |
| FSV1076 | Fat Shark Dominator HD3 Headset |

| Part # | Description |
|---|---|
| SPMVR2510 | Focal V2 FPV Wireless Headset with Diversity |
| SPMVM430HA | Headset Conversion |

# Warranty and Service Contact Information

| Country of Purchase | Horizon Hobby | Contact Information | Address |
|---|---|---|---|
| United States of America | Horizon Service Center (Repairs and Repair Requests) | servicecenter.horizonhobby.com/ RequestForm/ | 4105 Fieldstone Rd Champaign, Illinois, 61822 USA |
| | Horizon Product Support (Product Technical Assistance) | productsupport@horizonhobby.com | |
| | | 877-504-0233 | |
| | Sales | websales@horizonhobby.com | |
| | | 800-338-4639 | |
| European Union | Horizon Technischer Service | service@horizonhobby.eu | Hanskampring 9 D 22885 Barsbüttel, Germany |
| | Sales: Horizon Hobby GmbH | +49 (0) 4121 2655 100 | |

# FCC Information

### FCC ID: BRWDXE

This equipment has been tested and found to comply with the limits for Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
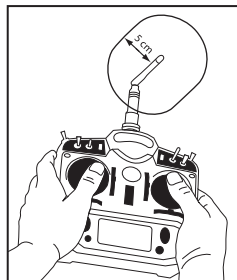
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** Modifications to this product will void the user's authority to operate this equipment.

### Antenna Separation Distance
When operating your Spektrum transmitter, please be sure to maintain a separation distance of at least 5 cm between your body (excluding fingers, hands, wrists, ankles and feet) and the antenna to meet RF exposure safety requirements as determined by FCC regulations.
The illustration shows the approximate 5 cm RF exposure area and typical hand placement when operating your Spektrum transmitter.

# IC Information

### IC: 6157A-DXE

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

# Compliance Information for the European Union

**EU Compliance Statement:**
Horizon Hobby, LLC  hereby declares that this product is in compliance with the essential requirements and other relevant provisions of the RED and EMC Directives.

A copy of the EU Declaration of Conformity is available online at: http://www.horizonhobby.com/content/support-render-compliance.

### 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 collections 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 make sure 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.

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