SKYCAT PARACHUTE LAUNCHER

DJI Phantom 4

USER MANUAL v1.1 1/2018

Thank you for choosing Skycat!

We want to offer uncompromised customer service to all of our old and new customers. Our team members have years of experience in various fields of the UAV industry and based on this experience and feedback from our clients, we recognize the importance of customer oriented approach. Our first goal is to stand out from the crowd, in a positive way.

Please read and follow the instructions carefully. This manual is updated regularly. In case you have any questions, ideas or feedback, please don't hesitate to contact us at www.skycat.pro/contact

Fly safe!

Skycat team

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Introductions

This user manual is aimed at customers who don't have previous experience with Skycat parachute launchers or RC in general. Aim is to describe in detail how to install and operate the ready-to-fly system.

Please read and follow these instructions carefully to ensure successful operation and to stay within warranty limits.

Careful installation, parachute folding, and arming of the launcher is essential to achieve best possible performance. We recommend loading and launching Skycat a few times as exercise, before mounting it to your aircraft. In case of any uncertainty, please don't hesitate to contact us for assistance.

Latest manuals and videos available at:

http://www.skycat.pro/downloads-1

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General safety

- *Only launch Skycat towards free airspace. Never point or launch towards people or animals.*
- *Do not expose Skycat system to rain or use near flammable materials.*
- *Don't try to repair damaged components. Contact Skycat for repair and spare part services.*
- *Only use to protect stable aircraft. Not suitable for aerobatic flying.*
- *Only use reliable, digital RC control systems to reduce risk of unwanted eject.*
- *Use of excessive force should not be required at any point of arming, loading or installation.*

Skycat XS Launcher

- *Only use Skycat launcher to eject a parachute and not other items.*
- *Only use original Skycat cloth around folded parachute.*
- *If launcher stays loaded over two months without launching, it is recommended to open and refold the parachute. This can decrease opening distance in an emergency.*

Everyday operation

Regular use after mounting and set-up.

1. *Switch rescue radio ON*

2. *Connect parachute battery*

System is now ready to use.

Short preflight checklist

1. Check that the receiver LED is green, when parachute battery is connected, and Rescue radio is ON.

2. Check that the parachute is securely connected to the copter harness.

3. Check that the launcher is undamaged and firmly in place.

Parachute folding

- Always pack and load on a clean and dry surface.
- Connect optional shock cord before folding.
- Opale parachutes might come with a red bag attached. The bag is not needed with Skycat XS and **should be removed**.
- If launcher stays loaded over two months without launching, it is recommended to open and refold the parachute. This can decrease opening distance in an emergency.

Demonstration videos:

Opale 1.0 m2 parachute: http://tinyurl.com/skycat-xs-opale-1m2
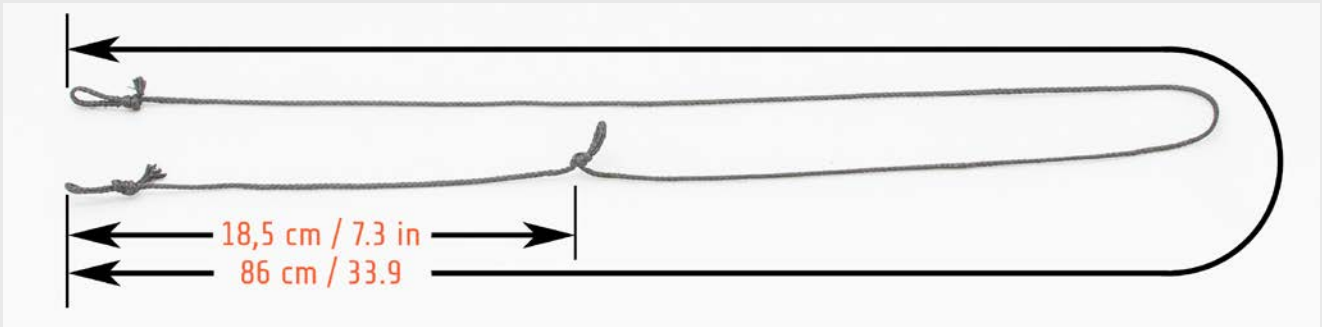Fruity Chutes IFC 36 parachute: http://tinyurl.com/skycat-xs-fruity-36SL

Creating a mounting harness

NOTE: Harness lines must be firm and tight around the copter. Loose lines may jam propellers and cause a crash.

Using the supplied parachute cord, cut and tie the loops according to the image below.

- Total harness length from loop to loop (stretched lenght): 86cm
- Distance from the first loop to first knot: 18.5cm

Knot type:

Installing the mounting harness

1. Loop the short end of the harness around rear-left landing gear leg and tighten the loop.
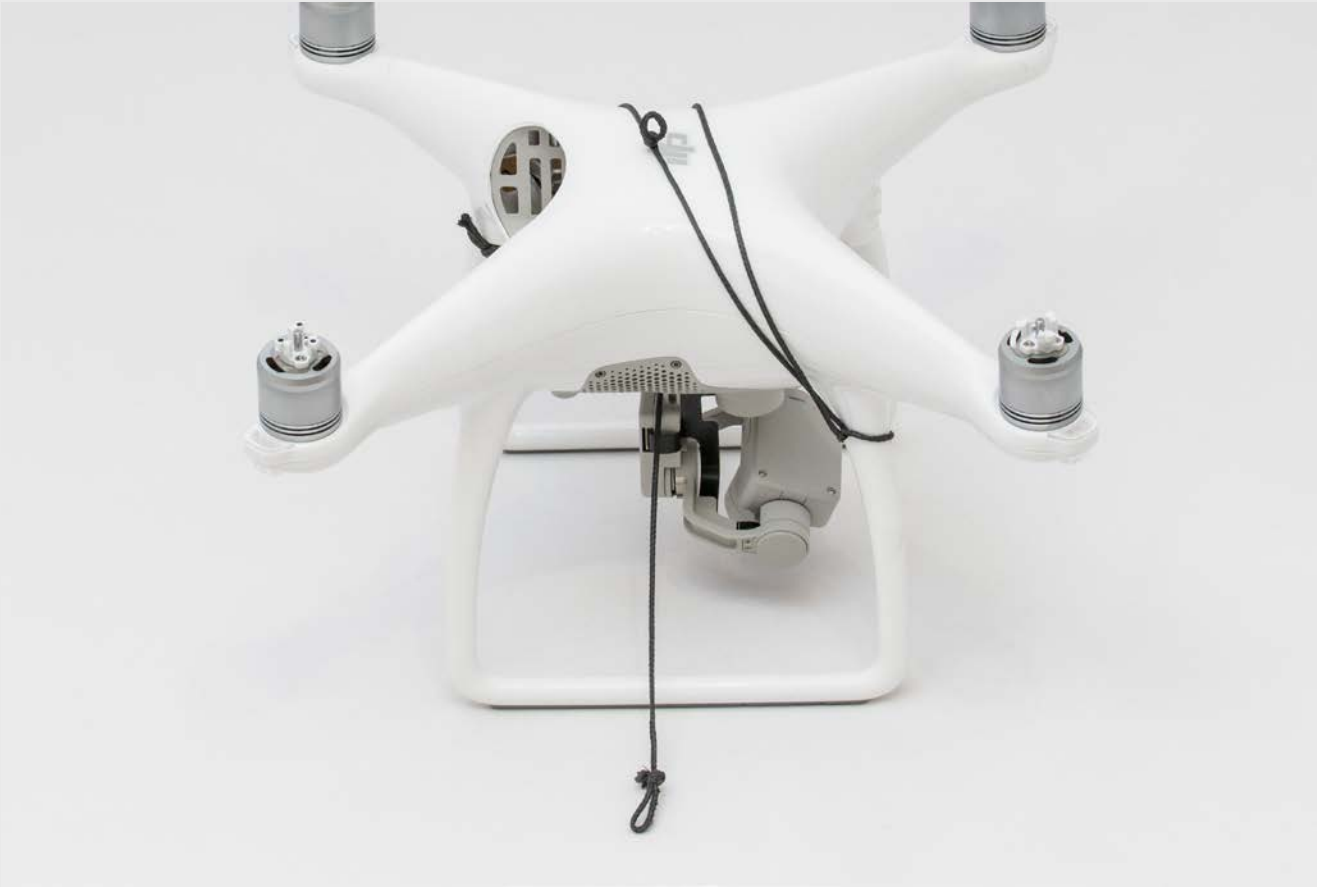
3. Route the loose end of the harness over the top of the drone to the right side. Loop it around the front-right landing gear leg. Tighten the loop.

4. Route the loose end of the harness over the top again and also under the base plate.

5. Pull the harness through the top loop. Connect parachute with quicklock.

6. Snap the launcher in place. Make sure lines are tight.

Finetuning

At the top of the launcher, there are two M3 screws holding the horizontal lever in place. Loosening the screws allows to adjust launcher mounting to achieve best possible fit. Lever has 1 mm of slack to compensate for copter manufacturing tolerances.
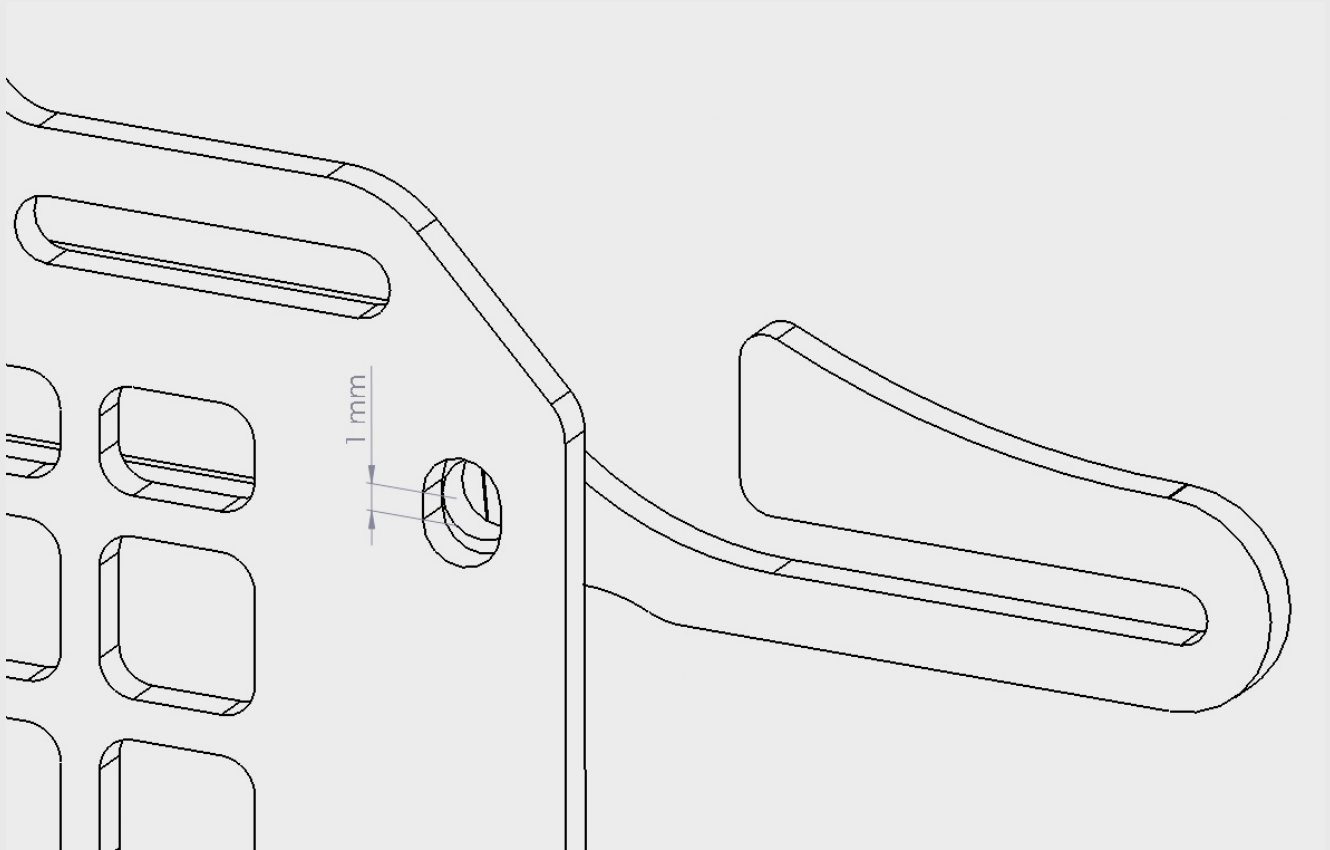
Rescue radio

Mount Skycat Rescue Radio to the DJI transmitter handle.

Mount the external launch button onto the preferred location, using double sided tape and zip ties.

Battery Mounting

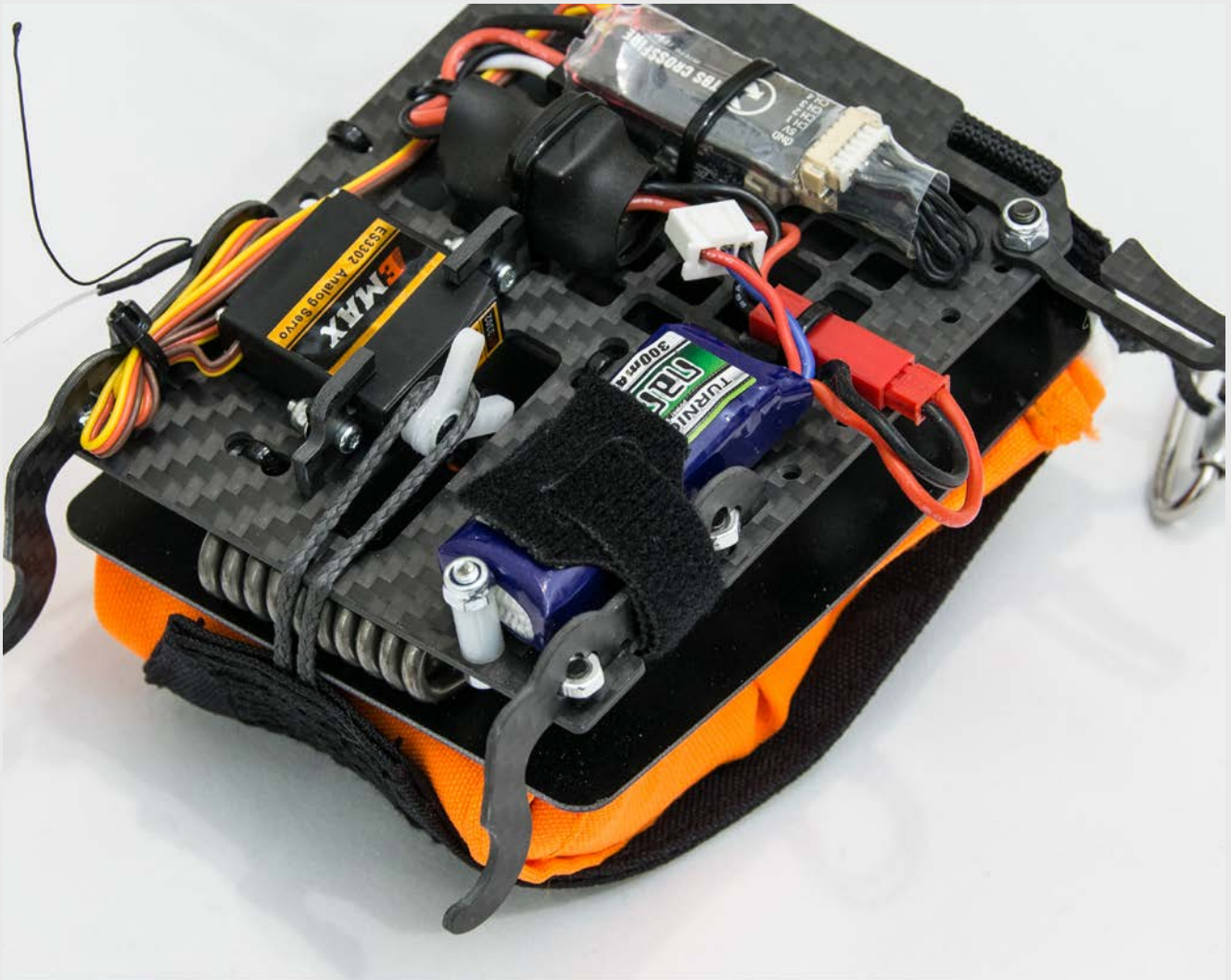*Mount battery using velcro.*

Battery charging

Battery is a typical RC LIPO battery and can be charged with any LIPO charger.

Supplied charger is a common LIPO charger found in any RC store. Charger type may vary.

Follow charger instructions.

Testing procedure

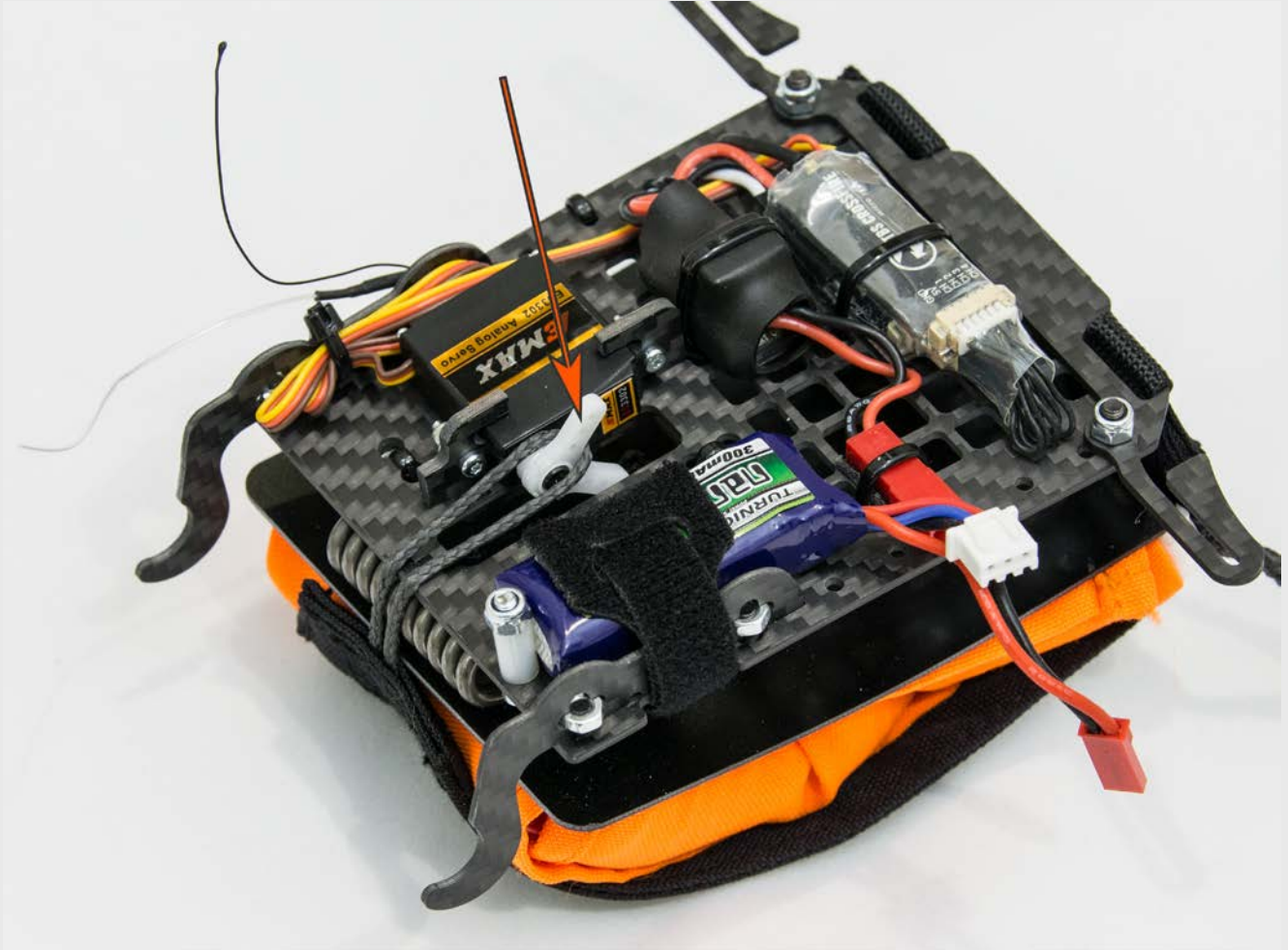1. Hold the black loop securely with your thumb to avoid accidental eject.
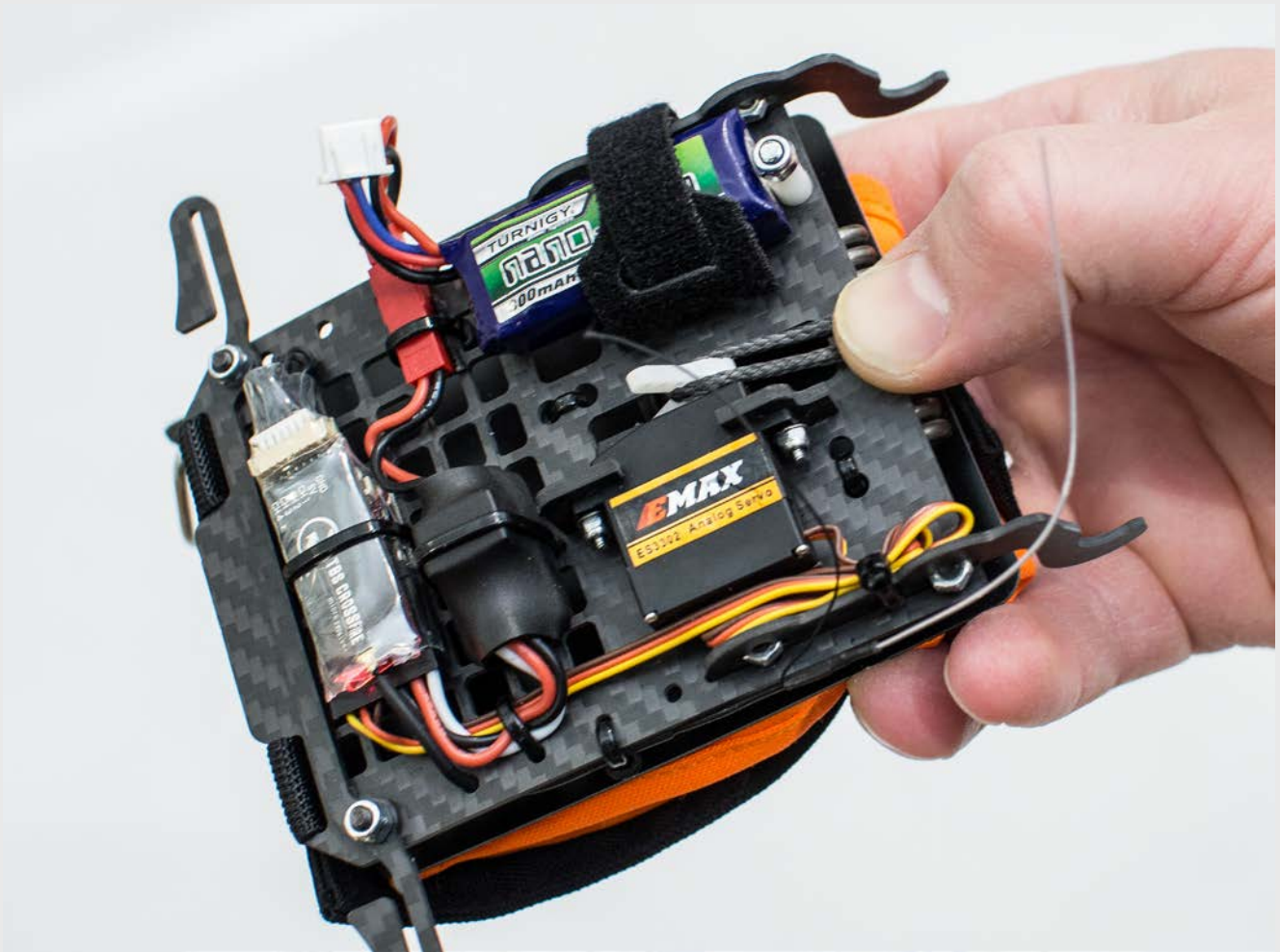
2. Press Rescue Radio launch button and check that servo arm moves to launch position.

3. Power cycle Rescue radio to reset servo position back to armed position.

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4. Release the loop back onto the servo arm and check that it's correctly positioned.

System specifications

Battery

Aircraft battery: LIPO 2S 300mAh with JST connector
Rescue Radio battery: LIPO 3S 800mAh with JST connector

Servo

Servo is powered through the three pin PWM wire. Operating voltage range of the servo is 4,8 – 6,0 V.

Required components

Following electronic components are necessary for operation:

- Skycat Rescue Radio, or other radio transmitter, or automatic launch device.
- Receiver unit.
- 4,8 – 6,0 V voltage regulator.
- Battery.

Launcher operating specifications

Operating temperature range: 0°C to 40°C (32°F to 104°F)

How and when to use Skycat parachute system

Only use Skycat parachute system in the case of emergency or testing, not for regular landings. Skycat is designed to reduce the impact energy of your aircraft. It does not remove the possibility of damage to people, surroundings or to your aircraft. Do not take unnecessary risks when planning your flights. Never fly above crowds of people.

In an emergency, seconds count. Eject parachute as soon as you're certain the aircraft is not in your control anymore. Aircraft with no gliding surface reach very high speed after only a few seconds in freefall.

We highly recommend regular training to improve reaction time and accuracy in emergency situations. Landings can be hard despite the use of Skycat recovery system.

*All testing is conducted **at your own risk**. Skycat is not liable for any damages.*

For more detailed information, please read the disclaimer below.

Recommended ground testing for first time users

Careful installation, parachute folding and arming of the launcher is essential in order to achieve best possible performance. We recommend loading and launching Skycat a few times as exercise, before mounting it to your aircraft.

1) *Hold the XS launcher firmly (keep fingers away from moving parts).*
2) *Eject the parachute by pressing Rescue Radio launch button.*

What should happen:

- *Parachute should eject freely.*
- *Lines should be untangled.*

What should not happen:

- *Parachute should not get stuck or drop close to the launcher.*

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Basic maintenance

We recommend a basic maintenance check after every 10 flights. Check carefully that:

- *Parachute harness lines are undamaged and away from sharp edges.*
- *All wires are undamaged and away from sharp edges.*
- *Launch battery is in good state. Replace if:*
    - *Cell voltages show abnormal differences.*
    - *Battery is swollen or gets hot when charged.*
    - *Operation time with full battery becomes too short*

If launcher stays armed for more than two months without launching, take out and repack the parachute. This can decrease the opening distance in an emergency.

After launch checklist

Check components and functionality after every launch. Check carefully that:

- *Parachute and harness lines are not damaged.*
- *Wires are securely fastened and undamaged.*
- *Servo arm and flip plate moves freely.*

IMPORTANT

Do not use or try to repair damaged parts! Skycat offers extensive repair and spare part services, don't hesitate to contact us.

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DISCLAIMER

Skycat is a backup system designed to help decrease the kinetic impact energy of your multicopter, UAV or radio controlled model in the case of an emergency.

Skycat cannot prevent your multicopter, UAV or radio controlled model from causing damage or even death at impact. It is only designed to eject a parachute in order to decrease the velocity of your aircraft in an emergency situation. Skycat is strictly a backup device and does NOT replace proper training and timely execution of appropriate emergency procedures.

Skycat is an electromechanical device and as such, it can fail to work properly which can result in false activation or no activation at all. Such failure can cause injuries or death.

In the case of a false activation or inappropriately timed intended activation, the ejection of the parachute can cause your multicopter, UAV or radio controlled model to fly further and cause more damages, than it would have caused, had it crashed to the ground in a free fall.

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