circuit
scribe

Circuit Scribe Drone Builder Kit

1 Gather your Supplies

1) Circuit Scribe Conductive Ink Pen
2) 4 Motors (Guards Optional)
3) Drone Hub
4) 2 Cardboard Arms & 2 Pre-made Arms
5) Battery Charger
6) Mobile Device (not included)

2 Download and Install CS Pilot App

Open up your mobile device's App Store and search: "CS Pilot"

The icon will look like the icon pictured on the right.

Once our app has begun downloading and installing, you're all set to move on and begin building your drone!

Doodle

3

Using your Circuit Scribe conductive silver ink pen, fill the area inside the rectangle on both arms, on both sides. Be sure to thickly lay down the ink on the first try, as going over it again may scratch away previously drawn ink! Holding the pen upright with light pressure will deposit the most ink.
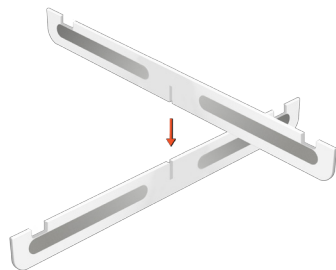
Make sure the ink is dry before moving on to step 4!
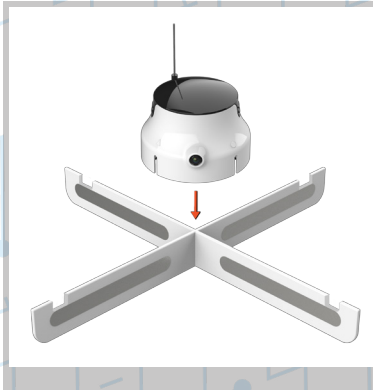
4 Join the Arms

Insert one arm into the other via the slot in middle of the arm.

Set your joined arms on your work surface with the rounded edges down.

Attach Hub to the Arms **5**

Flip over your drone hub and take note of the metal clips underneath. The clamps are where your drone arms will connect to the hub.

Before attaching, pinch the cardboard where the clamps will hold, this will prevent the hub clamps from ripping the cardboard.

Center the arms (X) under the hub and carefully push the hub onto the cardboard. This is the brain of the drone!

6 Attach Motors to Arms

The camera on the hub identifies the front of the drone. The notches on the arms denote where the motors will attach, pinch the cardboard directly under the notches.

Identify where the arms meet the hub, notice the ⊙ or the △. Match the ⊙ or △ symbols on the motors to the ⊙ or △ symbols on the hub.

Gently press the motor clamps onto the arms so the matching symbols on the motor and hub face each other.
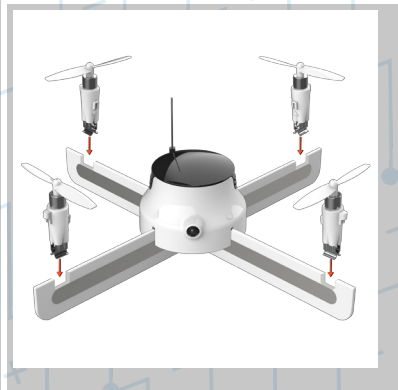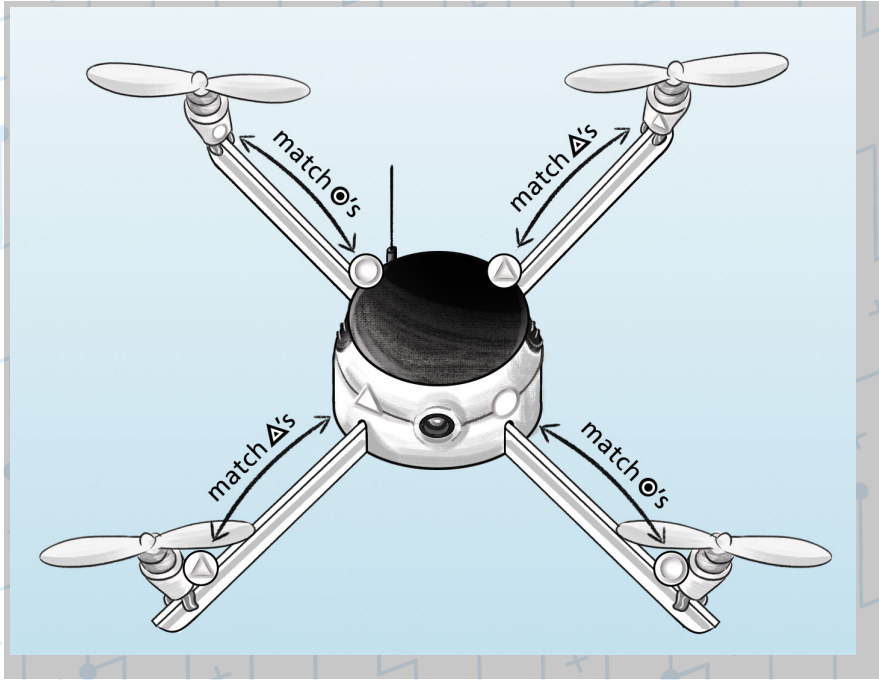
7 Turn On the Drone

Turn on the drone by pressing the button on the bottom of the hub.

The flashing red light on the rear of the hub will indicate that the drone is powered on.

●●●○○ Scribe 📶   12:47 PM   🔋

‹ Settings   **Wi-Fi**

| Wi-Fi | 🟢 |

✓ CSDrone   📶 ⓘ

CHOOSE A NETWORK...

Electroninks   🔒 📶 ⓘ

Ask to Join Networks   ⚪

Known networks will be joined automatically. If no known networks are available, you will have to manually select a network.
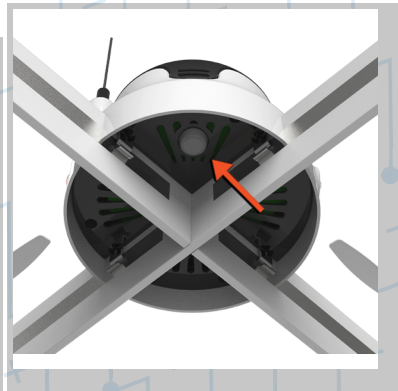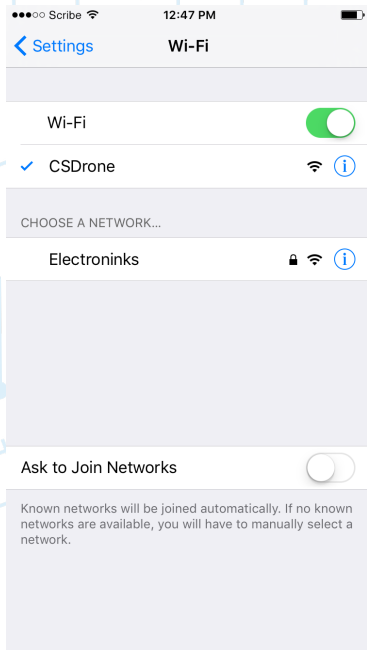
Connect to CSDrone Wi-Fi

8

Connect to the CSDrone Wi-Fi network in the settings of your mobile device.

While connected, you won't be able to browse the Web.

9 Open CS Pilot App

Once the CS Pilot app is open, notice the flashing red light has become solid. This indicates your drone is connected. Once connected, you'll be able to see the live camera feed.

Check out the button diagram on the next page to learn the flight interface of the CS Pilot app.

Wi-Fi Signal

Battery Life

Take Photo

Record Video

One Touch Take-off/Landing

Trim

Horizon Line

Yaw

Pitch

Roll

Throttle

Trim

Photo Library

Phone Tilt Control

Settings

Instructions
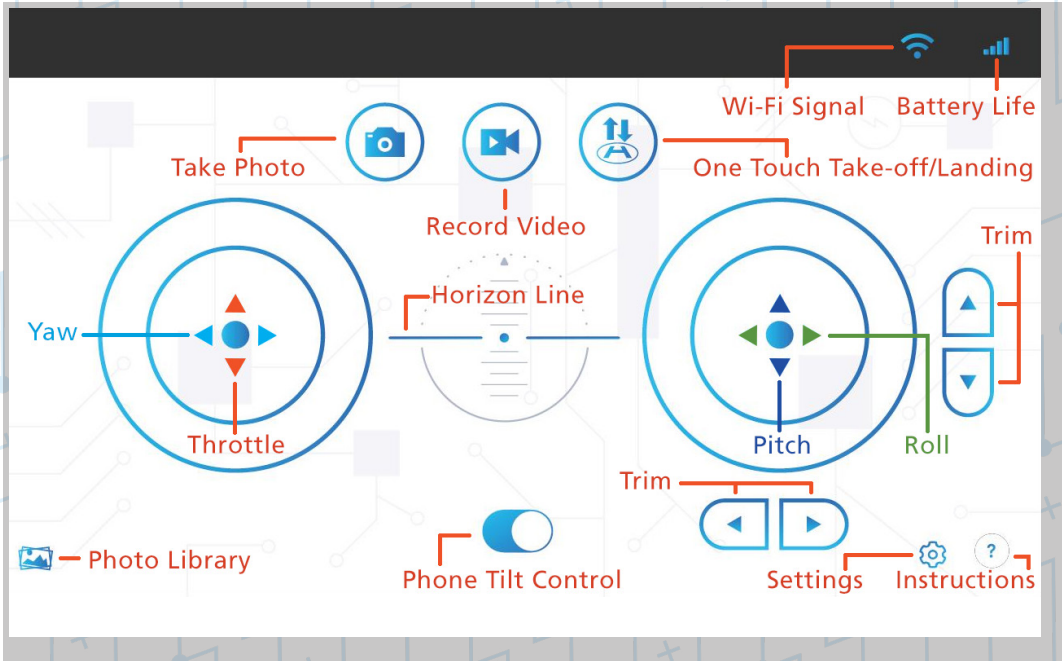
10 Fly Your Drone!

To Arm: Pull both joysticks to the bottom outside corners of your screen and hold until the propellers begin to spin.

Takeoff/Landing: Use the (⬆⬇) button for one-touch takeoff. When you're ready to land, press the (⬆⬇) button again for one-touch landing.

To Disarm: Push both joysticks towards the bottom inside corners of your screen and hold it there until the propellers stop spinning.

Arm

Disarm
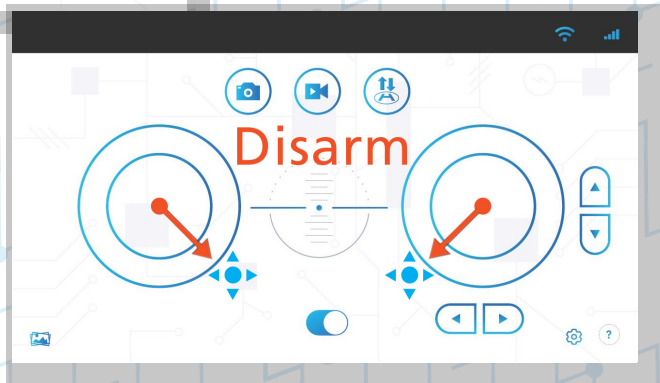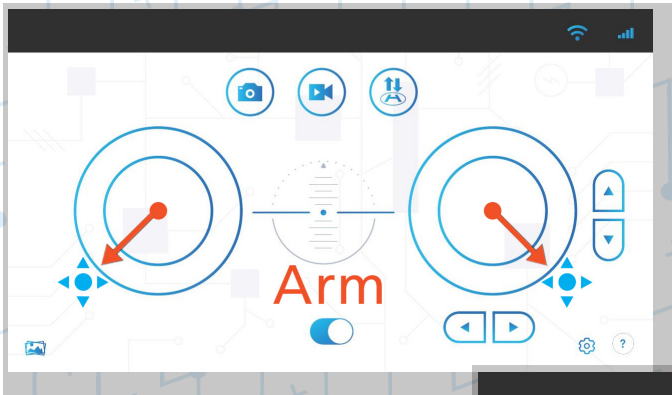
11 Charge the Battery

After flight, be sure to charge up your battery using the included charger. Pop off the black Hub top and plug it in.

The battery will be fully charged when the light turns off. Remove the battery after it's fully charged.

Using Pre-made Arms

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Included are a pair of pre-made arms for when you don't have time to create your own or need to troubleshoot.

The pre-made arms function the same as the cardboard arms but there is no drawing required.

Check out the FAQ for tips on how to troubleshoot with the pre-made arms.

FAQ

Why are no motors spinning?
- Check to see if the battery is charged and securely in place, the red light should flash.
- Make sure the hub clamps are connected to the silver ink of the arms.
- Check to see if the Wi-Fi is connected to the CSDrone network. When the app is open the red light will be solid if connected.
- Retry arming the drone (refer to step 10).

Why is one of my motors is spinning slower/doesn't spin with the others?
If you have access to a multimeter go ahead and check the resistance of the ink on your arms. Ideally you want it to be below 2 ohms on each side.
- Make sure the motors are seated so they are touching the silver ink.
- Add another coat of ink once the first coat has completely dried.
- Make sure the hub and motor clamps squeeze the arm firmly.
- Try making new arms, over time they will wear wear down, bend and crimp.
- Replace the cardboard arms with the pre-made arms to test your motors.
- Bake the arms in an oven/toaster oven on the lowest setting for 10 - 15 minutes.
 DO NOT PUT IN THE MICROWAVE!

What should I do if my drone won't connect to the app?
Check to make sure you're still connected to the CSDrone Wi-Fi Network. Also, try turning off your Wi-Fi's auto-connect to prevent it from connecting to stronger networks.

A propeller flew off my drone while it was flying!
That happens as the propellers get old and loose. Check out the extra propeller bag in your kit and replace it using the guide at: circuitscribe.com/drones

My drone keeps flipping over instead of flying up?
Make sure your motors are connected correctly. Refer to the diagram in step 6. You most likely have your right and left sides switched or a motor connected backwards.

Why won't my drone fly the direction I want it to!
Before takeoff, stand behind the drone so you see the red light on the rear of the drone hub. Now, you and the drone camera see the same view. Also, try calibrating the onboard gyroscope by pulling both joysticks down and to the right and holding until calibration is complete. While calibrating the red light will flash rapidly and turn to a solid red light once complete.

FCC WARNING

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.

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

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to 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 into an outlet on a circuit different
   from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum 20cm distance between the radiator your body: Use only the supplied antenna.

Find more fun at **www.CircuitScribe.com/drones**

Drone Quick Start Guide

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