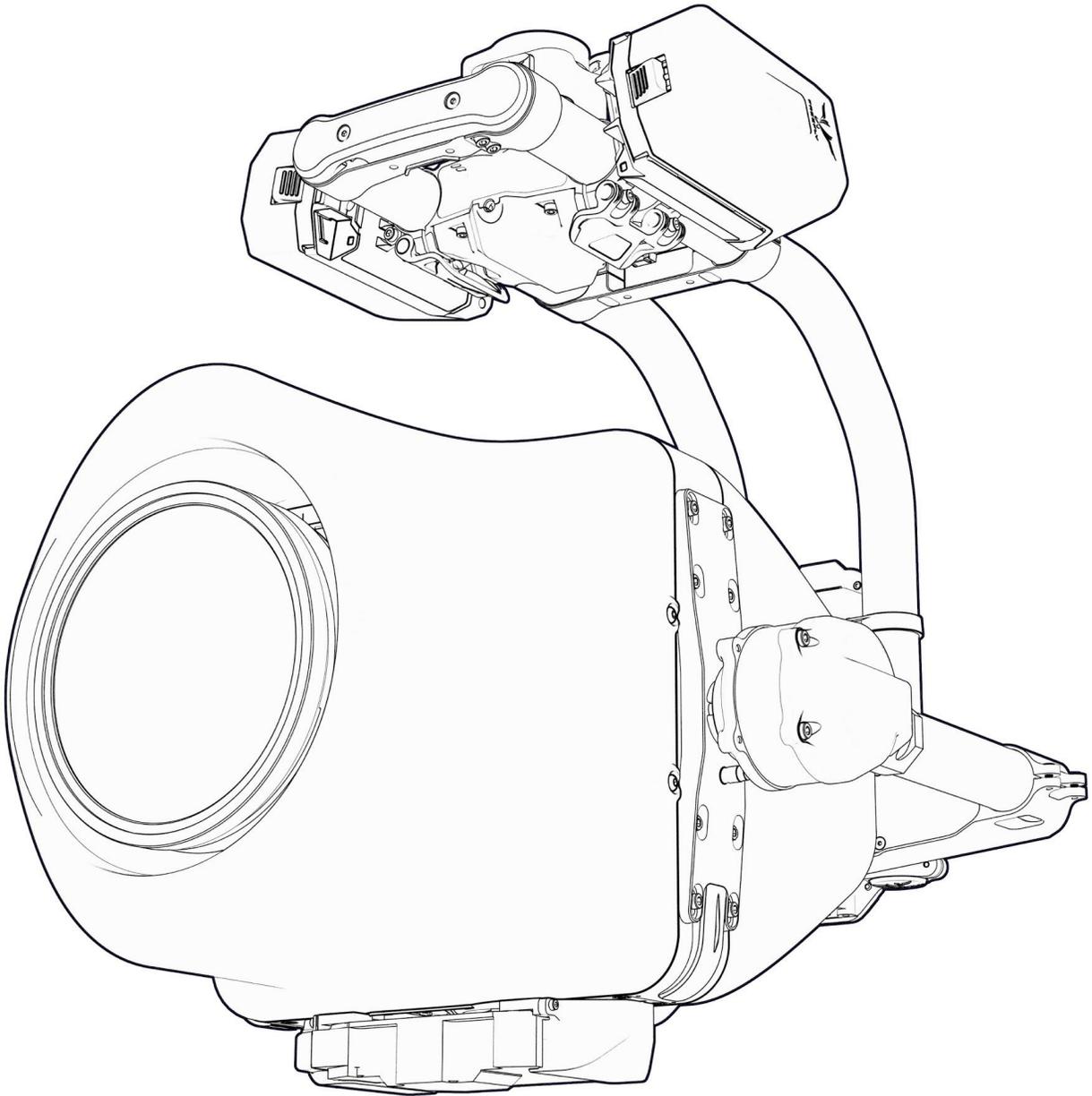


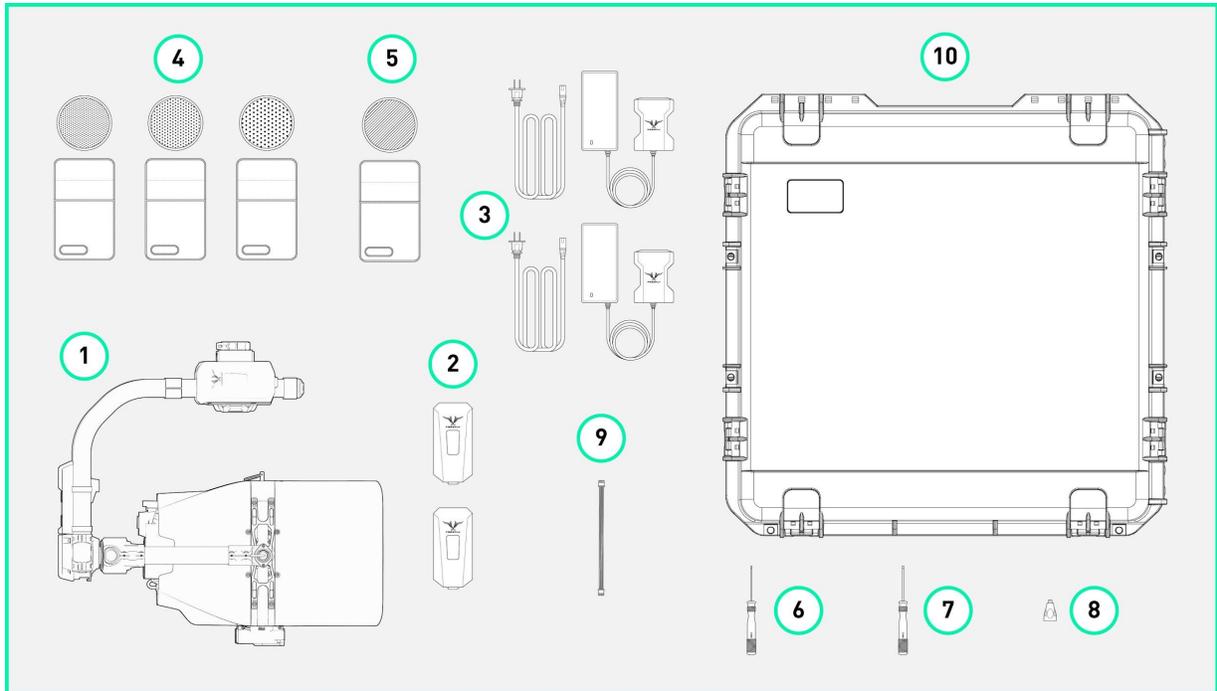
# MöV CARBON

## Quick Start Guide



# Setup

## 1. Unbox



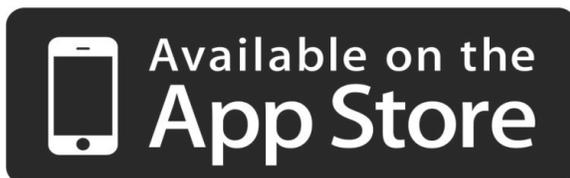
### Included in the Box

- |  |                              |
|--|------------------------------|
| 1. MōVI Carbon                                     | 7. 2.5mm Driver              |
| 2. 2x MōVI Pro Battery                             | 8. HDMI to HDMI Mini Adapter |
| 3. 2x MōVI Pro Battery Charger                     | 9. Aux UART to FRX Cable     |
| 4. Schneider Compact ND Kit 114mm (ND 0.6/0.9/1.2) | 10. MōVI Carbon Travel Case  |
| 5. Schneider 4.5" Round Clear Ultraviolet          | 11. MōVI Ring Pro*           |
| 6. 2.0mm Driver                                    | 12. Freely RX*               |
- \*Not shown above

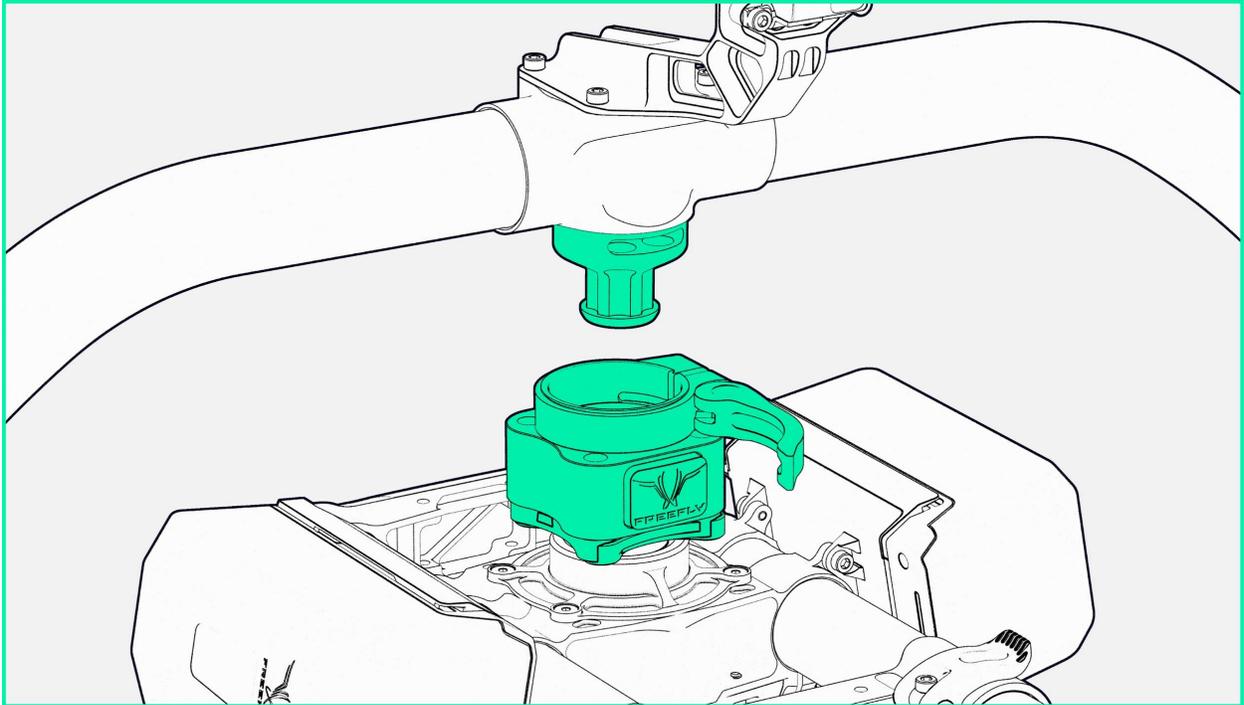
## 2. Charge the MōVI Pro Batteries

- MōVI Carbon is powered by MoVI Pro Batteries.
- Using the MōVI Pro Battery Chargers, charge both MōVI Pro Batteries that are provided with MōVI Carbon.
- The chargers will light up green when batteries are fully charged.

## 3. Download the MōVI App

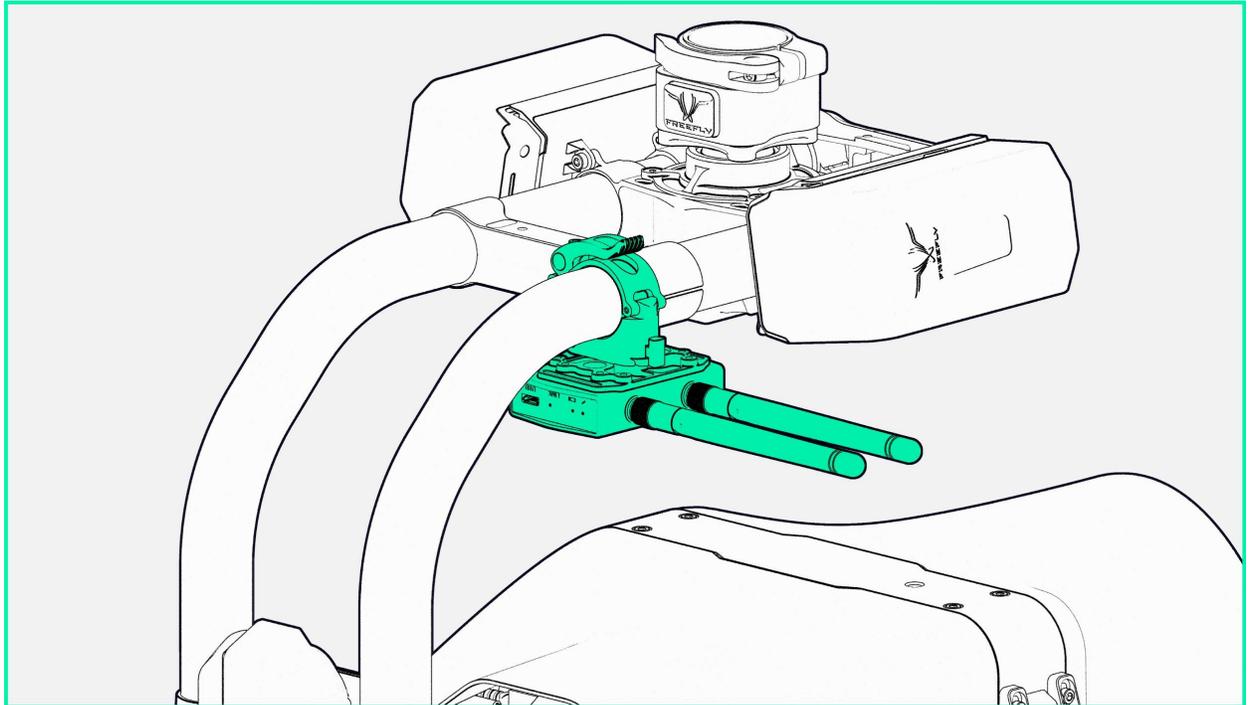


#### 4. Mounting Carbon



- a. MōVI Carbon uses Freely's Toad in the Hole (TITH) Quick Release system. This means MōVI Carbon mounting is easy, highly versatile, and will mount anywhere you can mount a Male TITH Adapter! When installing MōVI Carbon, align the TITH receiver as pictured above, for consistent camera direction.
  - i. [MōVI Ring Pro](#)
  - ii. [Classic Handles](#)
  - iii. [Toad \(Male Adapter\)](#)

## 5. Mount Wireless System



- a. Items Needed (not included in MōVI Carbon):
  - i. [25mm Pop-N-Lock](#)
  - ii. Your preferred Wireless Video Transmitter
- b. Using the 25mm Pop-N-Lock, mount your preferred wireless video transmitter to the spine tubes as shown. Power your wireless video transmitter using the 12V D-tap power output found on the GCU.
- c. Plug in the HDMI cable into your wireless transmitter. You can find the loose end of the HDMI cable secured just above the gimbal control screen.
  - i. You may have to use the HDMI adapter provided with MōVI Carbon if your wireless transmitter uses an HDMI mini input.

## 6. Insert SD Card

- a. Items Needed (not included in MōVI Carbon):
  - i. SD Card UHS-II or higher
- b. Open the GH5S's media door and insert your preferred SD card
  - i. We recommend SD card types UHS-II and higher to benefit from the GH5S's video recording abilities.

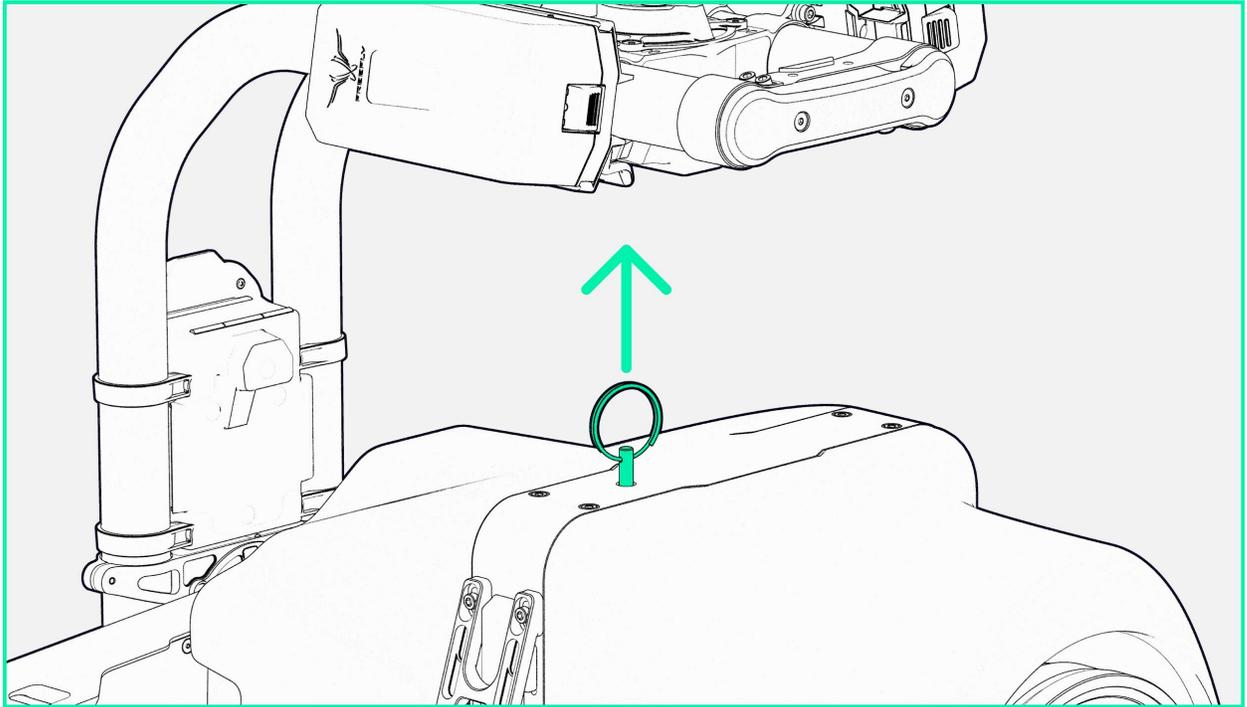


NOTE

The shroud does not need to be removed to insert and remove SD cards!

## 7. Pull Axis Lock Pin

- a. Remove the axis lock to unlock MōVI Carbon's inner stages.



- i. Locking the axes is as easy as reinserting the locking pin into MōVI Carbon.

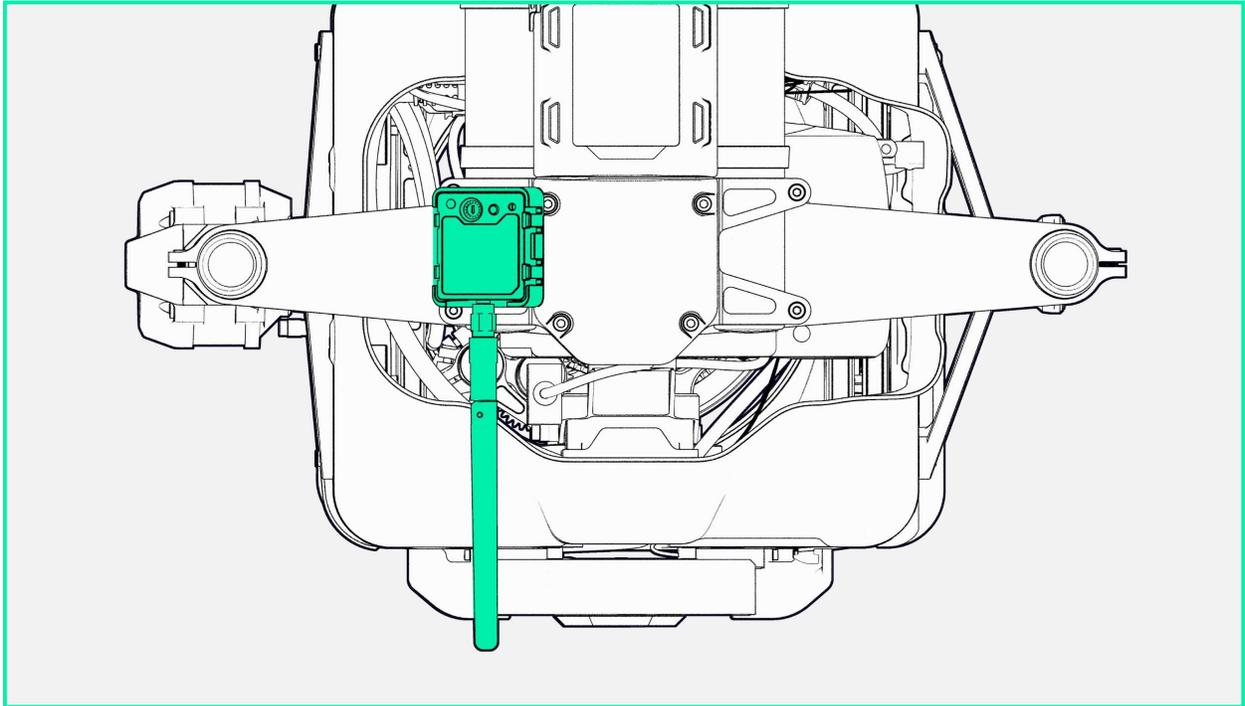


The best way to reinsert the the pin is insert it while gently moving the inner stage until you feel the pin start to engage through the inner axes!

## 8. Power Up

- a. Power up MōVI Carbon by pushing the grey power button located near the gimbals control screen; MōVI Carbon will take a moment to initialize the inertial measurement unit and start an automatic calibration of the lens.
- b. No need to power the camera separately, everything powers up with the MōVI Carbon!

## 9. Bind the Motion Controller



- a. Items Needed (not included in MōVI Carbon):
  - i. [MōVI Controller](#) ( or approved remote controller\*)
- b. Select the desired channel on MōVI RX (Channels 1-9)
- c. Power up the MōVI Controller and set the channel on MōVI Controller to match the channel on the FRX.
  - i. Home > Radio Config > Channel (cycle and select with Menu Set knob)
- d. Write channel to MoVI Controller
  - i. Home > Radio Config > Radio Action (select Write with Menu Set knob)
  - ii. Press Menu Set knob to enact the write command.
- e. Power up the MōVI Carbon and hold the Bind button on the FRX for 2-3 seconds
- f. Bind MōVI Carbon and MōVI Controller
  - i. Home > Radio Config > Radio Action (select Bind with Menu Set knob)
  - ii. Press Menu Set knob to enact Bind command once the FRX slowly flashes orange.
- g. Wait 20 seconds until MōVI Controller and FRX are bound.
- h. If the bind fails, power cycle the MōVI Controller and FRX and try again.
- i. \*If you are using a 3rd Party remote such as a Spektrum or Futaba radio bind use the manufacturer's instruction to bind the TX and RX then use the appropriate COM cable to plug the RX into MōVI Carbon's COM2 port.

## 10. Bind the FIZ controller

- a. Items Needed (not included in MōVI Carbon):
  - i. [Pilot 3 Axis F/I/Z Controller](#) or
  - ii. [MōVI Controller](#)
- b. In order to control FIZ users must bind a MōVI Controller or Freefly Pilot to MōVI Carbon.
  - i. If users want to bind a second MōVI Controller for FIZ control please refer to step 9 for instruction.



NOTE

When a single MōVI Controller is connected to the MōVI Carbon it assumes control of motion and FIZ. Adding a second MōVI Controller to COM 2 will reassign motion control to the second MōVI Controller.

- c. Set MōVI Carbon and Pilot's to the same radio channel using the Radio Screen on both devices.
- d. Press the 'Bind' button on the Carbon and Pilot.
- e. If the bind fails, repeat step 'c' and try again.

## 11. Ready to Shoot!

- a. Now that everything is bound MōVI Carbon is ready to shoot!
  - i. Carbon comes pre-tuned and does not need to be autotuned to use; you may make small adjustments to the tuning values via the gimbal's control screen or the app.
  - ii. **Do not use the Autotune feature via the MōVI App or MōVI Controller.**
    1. Any additional tuning that needs to be completed should be done manually by adjusting the Stiffnesses and Filter values.
  - iii. Note the small circular symbol on the bottom left of the display screen. This symbol displays the current status of external IMU's state. A yellow symbol denotes an external IMU that is connected and is warming up; once the external IMU has reached optimal performance the symbol turns grey. This symbol is found in the bottom left of the screen.

### FAQ:

**Q:** Carbon needs a tuning adjustment, what do I do?

**A:** Manually adjust the stiffnesses and filters, Carbon comes pre-tuned so adjustments will be small! **Do not use the Autotune function to tune Carbon.**

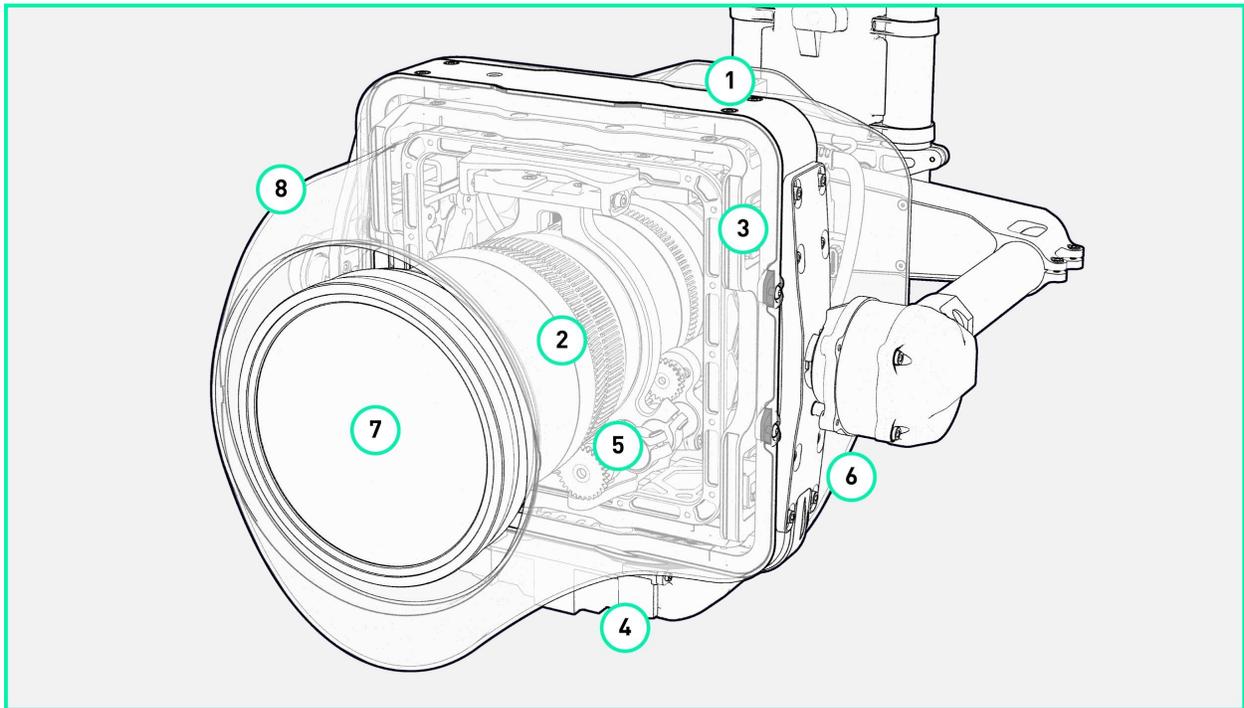
**Q:** Carbon looks unbalanced and slowly points up/down when the motors are turned off. How do I adjust the balance?

**A:** Carbon's balance should not be altered; Carbon is balanced and vigorously tested before it leaves our HQ! All Carbon's may exhibit this behavior and it is expected. If you still suspect that something is wrong please contact support!

**Q:** Something is wrong with Carbon and I cannot tell what it is! What do I do?

**A:** Complete a 'Default Config' to reset Carbon back to the factory settings and tuning. If the problem persists please contact Freefly Support!

## Features



1. Panasonic GH5S
  - a. Compact yet powerful, the Panasonic GH5S's ability to provide stunning video at C4K and absence of optical stabilization allow MoVI Carbon to record cinema quality footage.
2. Fujinon XK20-120mm T3.5 Cabrio
  - a. The Fujinon XK Cabrio is sharp, parfocal, and has a great zoom range; all at a weight that still allows MōVI Carbon to fly!
3. MōVI Carbon Inner Stage
  - a. The additional set of ultra fast inner axes which makeup MōVI Carbon's inner stage allow MōVI Carbon to reach unprecedented stabilization for a handheld gimbal.
4. Zoom Rate Scale
  - a. Zoom Rate Scale allows MōVI Carbon to maintain the same optical pan rate while zooming in or out.
  - b. Users can adjust the scale rate from shot to shot or completely turn it off, this setting is accessible under the MōVI Expert menu in the newest MōVI Controller FW.
    - i. Download the latest [MoVI Controller FW](#)
5. FIZ Autocal on Startup
  - a. MōVI Carbon automatically initiates an autocal on startup so it is always ready to go!
6. High Performance Inertial Measurement Unit
  - a. MōVI Carbon uses a state-of-the-art IMU to help it keep the picture stable at 240mm, even in the harshest conditions.



NOTE

Due to the IMU's warm up period, MōVI Carbon will reach optimal performance 400s (6.5minutes) after it is turned on. The gimbal can be used during this warm up period.

7. Schneider Filter Kit
  - a. Included in each Carbon is a Schneider Lens Filter adapter along with a set of three ND filters ranging from ND0.6 to ND1.2 and a UV filter for lens protection.
8. Shroud
  - a. MōVI Carbon's shroud is designed to keep the lens and camera safe while reducing the drag of the gimbal while mounted to a moving vehicle resulting in the smoothest shots possible.

## Links

1. [Knowledge Base](#)
2. [Manual](#)



@freeflysystems | #freeflyers