



GLIDECAM CENTURION



MANUAL

Set-up and Operations Guide

Glidecam Industries, Inc. 23 Joseph Street, Kingston, MA 02364

Customer Service Line 1-781-585-7900

Manufactured in the U.S.A.

COPYRIGHT 2016 GLIDECAM INDUSTRIES, Inc. ALL RIGHTS RESERVED

TABLE OF CONTENTS

SECTION #		PAGE #
1.	Introduction	3
2.	Disclaimer and Warnings	4
3.	Specifications	5
4.	Glidecam CENTURION Assembly	7
5.	Glidecam CENTURION Batteries	9
6.	Glidecam CENTURION Tilt Balance	10
7.	Glidecam CENTURION Roll Balance	12
8.	Glidecam CENTURION Yaw (PAN) Balance	13
9.	Glidecam CENTURION Power On	14
10.	Glidecam CENTURION Mode Switch and Joystick	15
11.	Glidecam CENTURION Custom Grip Positions	16
12.	Glidecam CENTURION Software	18
13.	Glidecam CENTURION Software Defaults	19
14.	Troubleshooting	22
15.	Other Camera Attachment Methods	23
16.	Professional Usage	23
17.	Warning	23
18.	Warranty	24
19.	Online Information	25

#1 INTRODUCTION

Congratulations on your purchase of a Glidecam CENTURION.

Glidecam is the industry leader in camera stabilization. We have been in business for over 20 years and strive to innovate and bring the best camera systems to the market. The Glidecam CENTURION is a culmination of all the best technologies with additional advancement on all the camera gimbals on the market today. The technology, craftsmanship, research and development put into this gimbal make it the best gimbal on the market today.

The Glidecam CENTURION is designed for a variety of cameras between 1-5lbs. The gimbal easily adjusts to balance primarily SLR and mirrorless cameras. Not all camera and lens combinations are accepted, so please adjust your model to balance properly on this gimbal. If a perfect balance is not achieved around each axis then the gimbal will not perform as specified.

The Glidecam CENTURION is a 3-axis Motorized Gimbal. The motors work with position feedback, encoders, and the IMU sensor (Inertial Measurement Unit) to communicate with our custom 32-bit controller. Combining the accuracy of our sensors with the speed of the controller equals perfectly stable video in all three axis with .02 degrees of accuracy.

The Glidecam CENTURION requires practice and understanding to achieve professional looking results. We highly recommend that the user read this manual thoroughly before setting up and operating the Glidecam CENTURION. Doing so will save you time, and will minimize the risk of damage to your camcorder or the Glidecam CENTURION. It is important to perform and follow the Set-up and Operation's procedures in the proper sequence, so as to avoid both frustration and a possible accident.

If you have need of any technical assistance, you can call our **Technical Support Line at 1-781-585-7900**, Monday through Friday between the hours of 9:00 am and 5:00 pm, Eastern Standard Time.

We're sure that once you have your Glidecam CENTURION up and running, you will find years of enjoyment with it.

#2 DISCLAIMERS AND WARNINGS

By using this product, you hereby agree to this disclaimer and signify that you have read it in full. You agree that you are responsible for your own conduct and any content created while using this product, and for any consequence thereof. By not following the manual properly or in the correct order, you understand the warranty will be voided.

By reading this disclaimer, you also agree that Glidecam reserves the right of final interpretation of this disclaimer, and that any part of this disclaimer is subject to change without prior notice.

Only use the supplied batteries, or backup batteries purchased directly from Glidecam. Internal functions may be damaged if an alternate power source is used. Do not modify or adjust the Gimbal. The gimbal has been calibrated and uploaded with appropriate settings. Modification or amending the gimbal is prohibited. Since Glidecam has no control over setup, final assembly, use, 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. Glidecam assumes no liability for damage(s) or injuries incurred directly or indirectly from the use of this product.

Lithium Polymer batteries (LiPo) can be extremely hazardous and require special attention:

- Do not charge batteries near flammable materials or on flammable surfaces such as carpet or wood.
- Never use or charge a swollen, leaky or damaged battery.
- Examine charger regularly for damage to the cord, plug, enclosure or other parts. Never use a damaged charger.
- Disconnect the charger when not in use.
- Do not heat, drop, freeze, or strike batteries.
- Clean battery terminals with a clean, dry cloth.
- Do not expose batteries to extreme temperatures, including excessive heat. Never leave batteries inside a vehicle on hot days.
- Do not store batteries in a moist environment, or allow batteries to come into contact with any kind of liquid.
- Do not attempt to repair batteries yourself.
- Do not place or use batteries on strong electrostatic or electromagnetic surfaces or surrounding areas.
- Do not place heavy objects on the batteries or charger. Avoid dropping batteries.
- Do not mix battery brands.
- Always use a Glidecam approved adapter/charger.
- Please dispose of batteries properly. Batteries cannot be discarded in the trash, fire, or compost. Use an appropriate battery disposal in your area.

****WARNING****

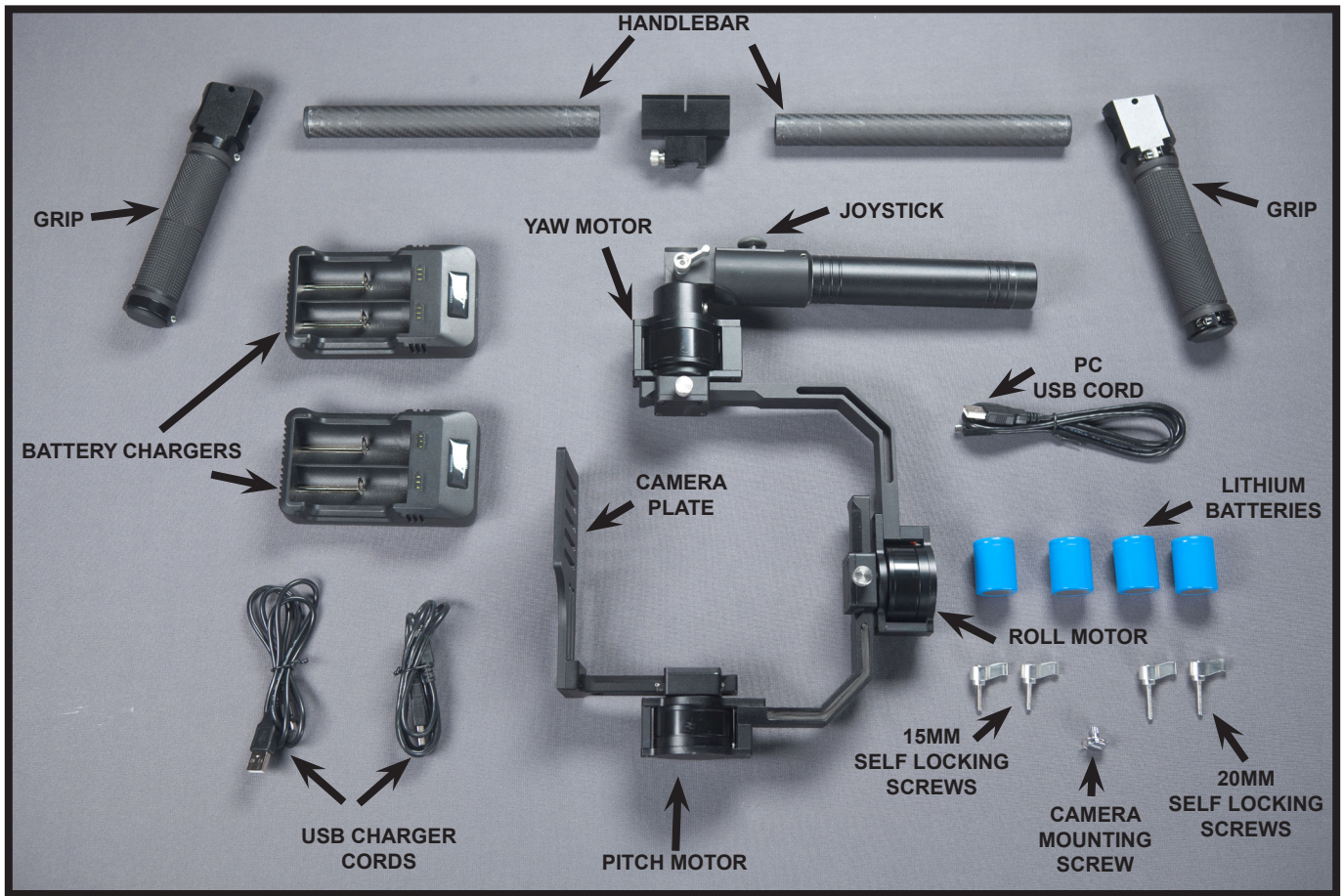
Do not change any of the software profiles or settings without first saving your current settings. Every gimbal is uniquely calibrated. This means if you alter the settings of your original settings we cannot send you the original profile. Save your profile before editing.

****WARNING****

In cold temperatures the sensor of the Glidecam CENTURION may have to warm up before use. Leave the Glidecam CENTURION on, and stationary for a few minutes to allow the sensor to warm up and work at full functionality.

#3 SPECIFICATIONS

Performance	
Load Weight (Reference Value)	1-5 lbs
Angular Vibration Range	±0.02°
Rotation Range	Pan Axis Control: 360°/s Tilt Axis Control: 360°/s Roll Axis Control: 360°/s
Electrical and Mechanical	
Motor Type	3 x Brushless with AS5600 (I2C) Encoders
Processing	32-bit processor
System Requirements	
Desktop/laptop: Windows (32- or 64-bit): 8, 7, XP SP3 Mac OS X: 10.9 or above Software Download: Obtained on Glidecam CENTURION page on Glidecam.com *****Always save current profiles before updating firmware or changing settings.*****	
General	
Control Modes	Profile 1: Follow Mode Profile 2: Lock Pitch/Follow Yaw Profile 3: Lock Mode Profile 4: Customizable Profile 5: Calibrate ACC Additional profile: Inverted mode, briefcase, return home, RC...
Supported Camera Dimensions	Maximum depth at center of mass on camera base plate: 7" Maximum height measured from top of camera base plate: 6" Maximum width: 7+” – available room for LCD to extend off the side
Power Requirements	4x Glidecam batteries (26350mah 3.7v)
Operating Temperature	15 to 105°F
Double Grip Dimensions (WxDxH)	Varies depending on grip position. 18x12x12”
Weight: Single Grip	3.4lbs (with batteries)
Weight: Double Grip	4.5lbs (with batteries)
Packaging Info	
Package Weight	6.2 lbs
Box Dimensions (LxWxH)	15 x 12.5 x 4.3”



****NOTE**:** The Glidecam CENTURION also has many accessories like the Glidecam CENTURION BALANCE STAND. Please visit Glidecam.com for Glidecam CENTURION accessories.

#4 GLIDECAM CENTURION ASSEMBLY



Figure 1

Insert the handle posts into the handle lock.



Figure 2

Insert the self locking screws (15mm) into the handle lock to secure the handle posts in place.

NOTE: The Glidecam CENTURION includes two different kinds of screws. The longer screw (20mm) is for the grip and the shorter screw (15mm) is for securing the handle posts in place.



Figure 3

Insert both ends of the grip bar to the central stem.



Figure 4

Position the grips in the most comfortable operation position. Usually perpendicular to battery grip. Position the double grips parallel to the battery grip if you are balancing your gimbal in an inverted position.



Figure 5

Insert and secure the self locking screws (20mm) onto both grips.

****NOTE**:** The Glidecam CENTURION includes two different kinds of screws. The longer screw (20mm) is for the grip and the shorter screw (15mm) is for securing the handle posts in place.

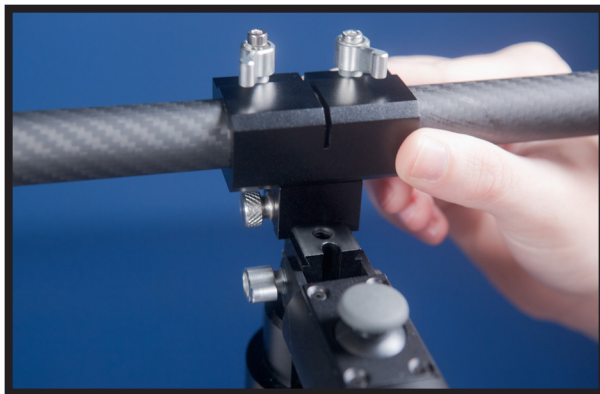


Figure 6

Slide in the handlebar quick release above the Yaw Motor.

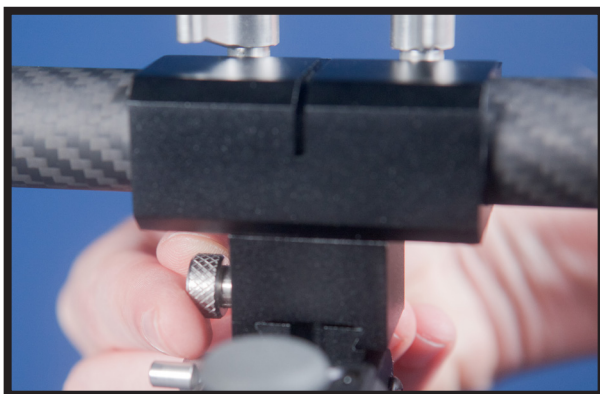


Figure 7

Securely tighten the knob.

#5 GLIDECAM CENTURION BATTERIES

The batteries are 26350 3.7v. Only use the supplied charger and connect to an outlet via the USB cable. Charge all batteries fully (Charge times vary, but are around 3hrs). Battery life varies depending on how aggressively the gimbal is used ranging from 3-8hrs. The encoders increase the battery life and don't send power to the motors unless it's needed. Store batteries 2/3rds charged at room temperature. If batteries are not stored properly their life is greatly reduced.



Figure 8

Insert batteries in the battery compartment as shown in Figure #8.

****NOTE**:** The Glidecam CENTURION uses Lithium Polymer batteries which can be extremely hazardous and require special attention.



Figure 9



Figure 10

#6 GLIDECAM CENTURION TILT BALANCE

Your camera setup must be properly balanced for all 3 axis to achieve the best performance from the gimbal. Accurate balance is especially critical for shots where extreme angles or movements are performed, such as car shots, running, biking, aerials, etc. Without properly following the balance instructions, your gimbal may not perform at all, or with poor accuracy, and with decreased battery performance. When changing cameras or lenses, make sure all three axis remain properly balanced. Improper balance can ruin the motors and void warranty, so please follow all instructions in order.



Figure 11

Balance your Glidecam CENTURION on the BALANCE STAND.

****NOTE**:** The Glidecam CENTURION BALANCE STAND is sold separately.



****NOTE**:** Alternatively if you do not have the Glidecam CENTURION BALANCE STAND, you can setup the Glidecam CENTURION by placing it upside on the table.



Figure 12

Balance the camera with the Pitch motor on the left hand side when looking at the gimbal from the front.

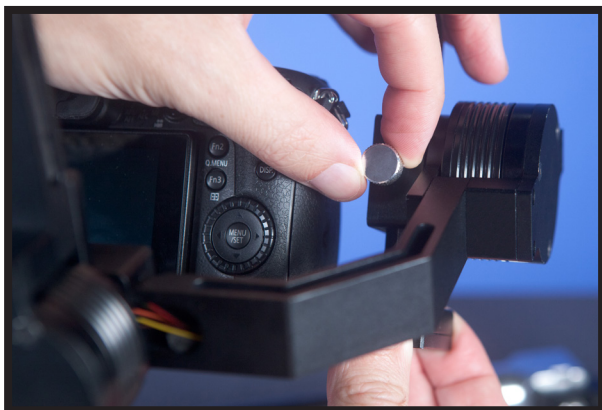


Figure 13

This can easily be moved up and down with the pitch motor screw.



Figure 14

Place the camera on camera tray and attach with 1/4" screw. Pick appropriate slot that will accept your cameras size and weight. If your camera doesn't fit properly, move the camera to a different slot.



Figure 15

Adjust the fore and aft camera position, so that the camera sits level with the lens pointing straight out.



Figure 16

Adjust the vertical bar by pointing the camera lens either straight up or down. Loosen the knob to slide the bar up and down until the camera is no longer top or bottom heavy.

The camera should hold its position when pointed at any given angle.

Tighten the knob securely after the appropriate balance is achieved. (See Figure 13)

#7 GLIDECAM CENTURION ROLL BALANCE



Figure 17

The roll balance is adjusted in two different ways.

First: Roughly balance the roll axis by choosing the appropriate slot on the camera plate. Heavy cameras should be placed closer to the pitch motor, while lighter cameras should use the furthest slot from the pitch motor.

Second: Fine tune the roll balance by loosening the knob under the roll motor and sliding the bar left or right. Slide the bar to a position where the roll axis maintains a level horizon. If the roll bar is maxed out to one side, then change the slot position on the camera plate. Tighten the knob after the appropriate balance is achieved.

#8 GLIDECAM CENTURION YAW (PAN) BALANCE



Figure 18

Yaw balance is critical for moving the gimbal to extreme angles.

Adjust by loosening the knob on the side of the Yaw motor.



Figure 19

Tilt the handlebars to determine if it is front or back heavy.



Figure 20

Move the yaw arm forward or backwards to find the center of gravity.

The yaw is balanced when you can tilt the handlebars and the camera will not rotate. This also means you should be able to put the camera at any given angle and the camera will hold that position without power to the motors.

Securely tighten the knob to hold the adjusted position.

#9 GLIDECAM CENTURION POWER ON

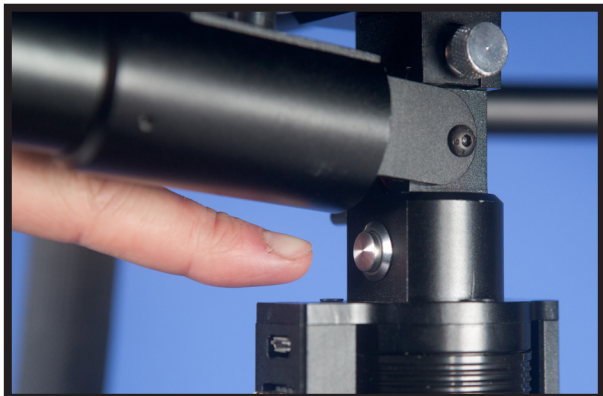


Figure 21

Once all three axis have been properly balanced, double check all screws and knobs are securely tightened. Your gimbal is ready to be powered on.

Locate the circular power switch located right above the yaw motor and below the single battery grip.

Before pushing the power button in, make sure your gimbal is completely still. The IMU sensor calibrates at startup and the gimbal must be at rest for about 5 seconds after the Power Button is pushed.

****NOTE** Do not turn on the Glidecam CENTURION without a camera attached. This can burn out the motors of the Glidecam CENTURION.**



Figure 22

Push the power button.

You will hear the initiating beeps and the motors will engage.

****NOTE** By default the Glidecam CENTURION calibrates on startup and uses the last chosen profile. If movement occurs during startup, the Glidecam CENTURION will skip calibration and use the last used settings. This can be changed in the software.**

#10 GLIDECAM CENTURION MODE SWITCH AND JOYSTICK



Figure 23

The joystick on top of the handle will manually control the pitch and yaw axis by toggling forward, backwards, left and right.

The joystick will move exponentially faster as you push it further from the center position. Do not rotate any axis more than 360 degrees with the joystick.

If you want the camera to move a different direction or speed than how the joystick moves it, the function can be inverted or customized in the software.

To change modes, push directly down on the joystick. The gimbal is shipped with 5 programmed Modes. Make sure you have the handle bar in line before changing modes.

- **One Push:** Follow Mode - camera follows your movements with pan and tilt. If the pan or tilt axis are not lined up where you want them, you can adjust the offset with the joystick.
- **Two Pushes:** Lock Pitch Mode - camera follows your pan, but the pitch is locked in position.
- **Three Pushes:** Lock mode - The camera stays locked in one position unless moved by the joystick.
- **Four Pushes:** Open for customization.
- **Five Pushes:** Calibrate ACC - This only needs to be done every once in a while to improve the gimbals positioning, or if your Glidecam CENTURION is not working properly.

****NOTE**:** Sometimes after being shipped overseas it is necessary to calibrate the accelerometer (sensor). Make sure your Glidecam CENTURION is completely level because this re-calibrates the sensor for a level position.

- **Hold Mode Switch:** Calibrates Gyro - Make sure to hold the CENTURION completely still when calibrating the gyro. The gyro is also calibrated at startup when the gimbal is completely still.
- **Inverted mode:** Achieved by flipping the camera upside down in follow mode, or restarting the gimbal in an inverted position.

These modes are customizable in the software. Other modes include: set tilt angles by hand, briefcase, return home...

****WARNING**** Do not change any of the software profiles or settings without first saving your current settings. Every gimbal is uniquely calibrated. This means if you alter the settings of your original settings we cannot send you the original profile. Save your profile before editing.

****WARNING**** The joystick is used for trimming. Not following or framing.

****WARNING**** It is important to be stationary when switching modes with the Glidecam CENTURION joystick.

****NOTE**** Lock mode is the suggested mode to make software adjustments.

#II GLIDECAM CENTURION CUSTOM GRIP POSITIONS

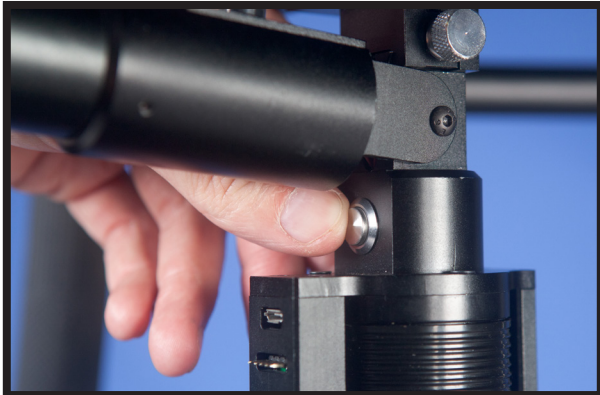


Figure 24

The gimbal can be operated with several grip positions. You can also invert the gimbal with the single grip or double grips.

Power the gimbal off.



Figure 25

Hold the pitch motor or camera in place and invert the rest of the gimbal 180 degrees around it. (Always remember to keep the pitch motor on the right hand side when looking at the camera lens.)

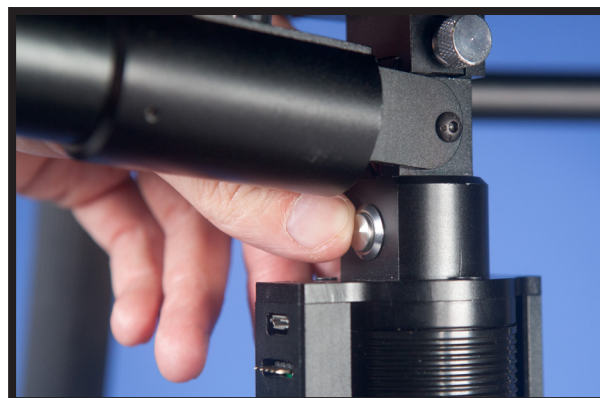


Figure 26

Keep the gimbal stable and power back on.



Glidecam CENTURION shown in SINGLE GRIP MODE.

Figure 27



Glidecam CENTURION shown mounted on a tripod.

Figure 28



Glidecam CENTURION shown mounted on a tripod.

Figure 29



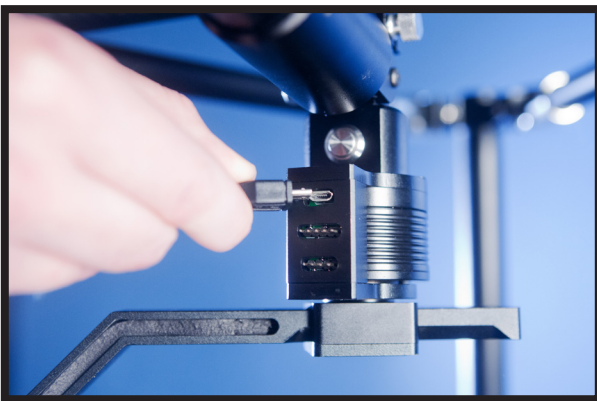
Glidecam CENTURION shown in vertical mode.

Figure 30

#12 GLIDECAM CENTURION SOFTWARE SETUP

The Glidecam CENTURION works right out of the box. No setup or calibration necessary. However if you want to make adjustments to the Glidecam CENTURION this has been provided to you. The Glidecam CENTURION comes shipped with a USB drive with the appropriate software and drivers required to make adjustments. Copy the contents and install the drivers if necessary.

****WARNING**** Do not change any of the software profiles or settings without first saving your current settings. Every gimbal is uniquely calibrated. This means if you alter the settings of your original settings we cannot send you the original profile. Save your profile before editing.



Glidecam CENTURION USB port.

Figure 31



Glidecam CENTURION USB connection with software running.

****NOTE**:** Save your profile before editing.

Figure 32

#13 GLIDECAM CENTURION SOFTWARE DEFAULT SETTINGS

It is important to always save your profile so you can restore to your original settings. However if you have lost your settings we have provided a default set of settings below. Certain options are unique to your Glidecam CENTURION and are marked “CUSTOM” below. These can be configured by choosing “AUTO” to automatically configure them to your values (Figure 33). In Figure 39 the custom values are configured by choosing “CALIB. EL. FIELD”.

****NOTE**** If you would like to manually calibrate the Glidecam CENTURION choose IMU Calibration Helper. You will have to position the camera in each of the axes and register it’s position. A check mark will appear when the position is registered. In this section you can also calibrate the gyro.

****NOTE**** If you have a heavy camera or the shot is shaky you can adjust the PID Controller values. (P) will add power, (D) will smooth the shot, and (I) is how fast the CENTURION corrects it’s position. To get a smooth shot it will take adjusting all 3 values. Adding more (P) will make the Glidecam CENTURION able to handle your heavier camera but may require you add more (D) to smooth the shot now that more power is used. Reverse for lighter cameras.

****NOTE**** The sensor of the Glidecam CENTURION can be reversed to the opposite side. This will require the Glidecam CENTURION to be calibrated again.

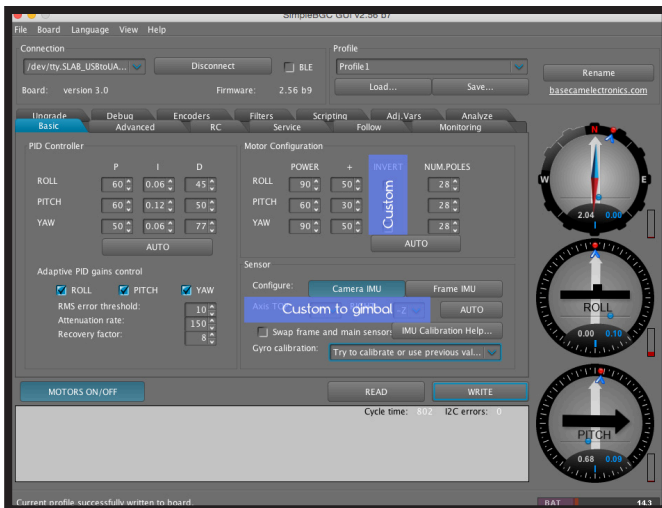


Figure 33

Glidecam CENTURION software basic settings.

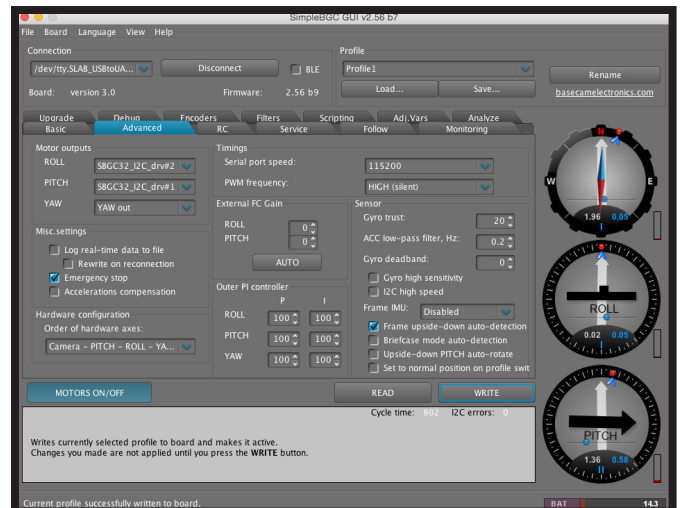


Figure 34

Glidecam CENTURION software advanced settings.

****NOTE**** Choose “AUTO” to fill in the custom options to your Glidecam CENTURION.

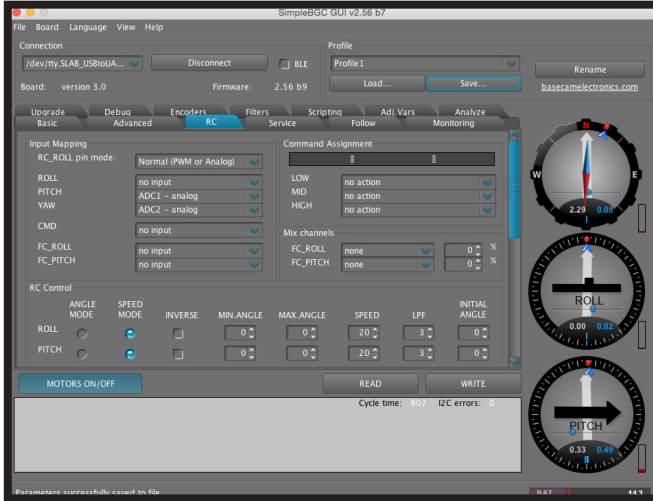


Figure 35

Glidecam CENTURION software RC settings.

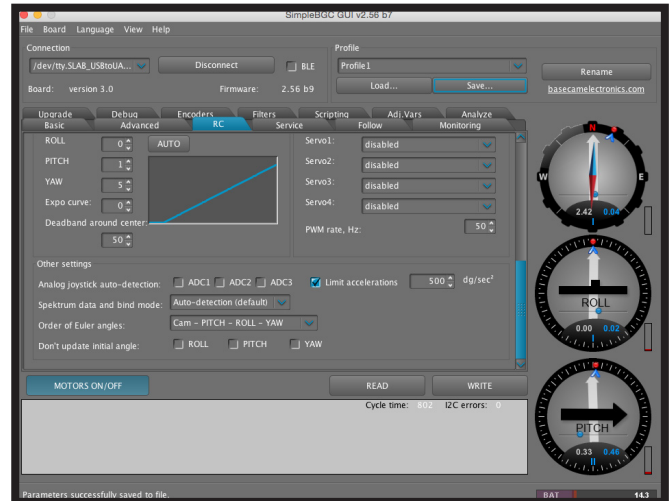


Figure 36

Glidecam CENTURION software RC settings continued.

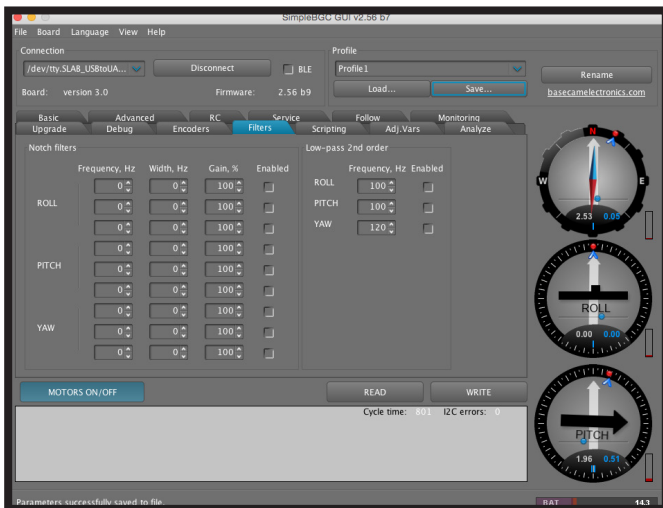


Figure 37

Glidecam CENTURION software filter settings.

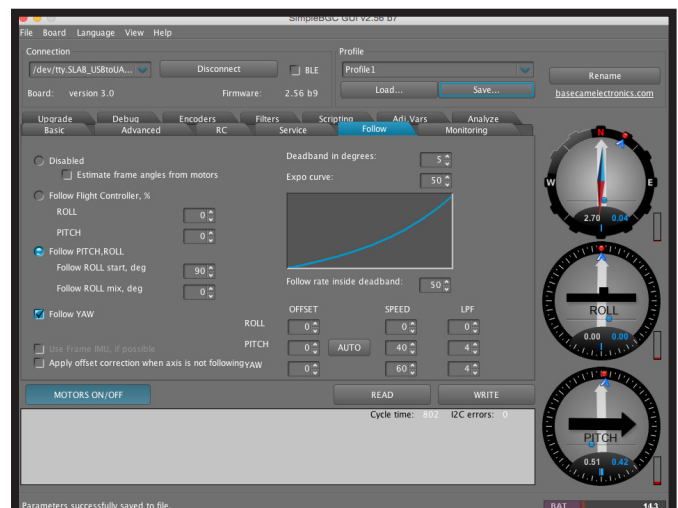


Figure 38

Glidecam CENTURION software follow settings.

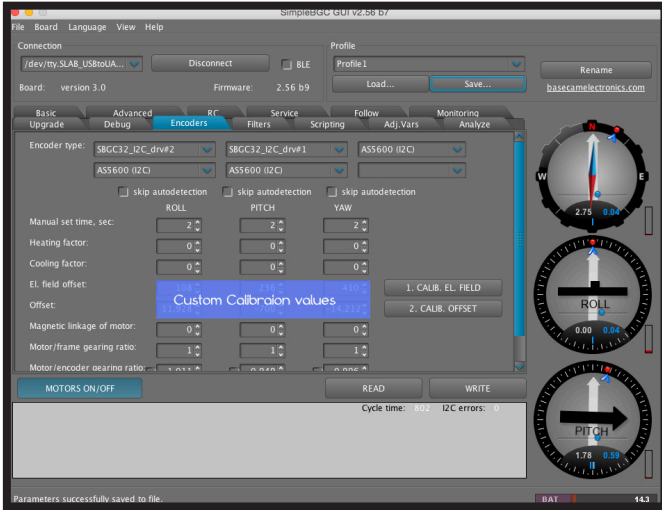


Figure 39

Glidecam CENTURION software encoders settings.

****NOTE**** Choose “CALIB. EL. FIELD” to get the custom calibration values for your Glidecam CENTURION.

****NOTE**** Software version 2.56 and earlier require the user to manually move each axis during calibration. On newer versions, the gimbal automatically moves each axis and calibrates on it's own.

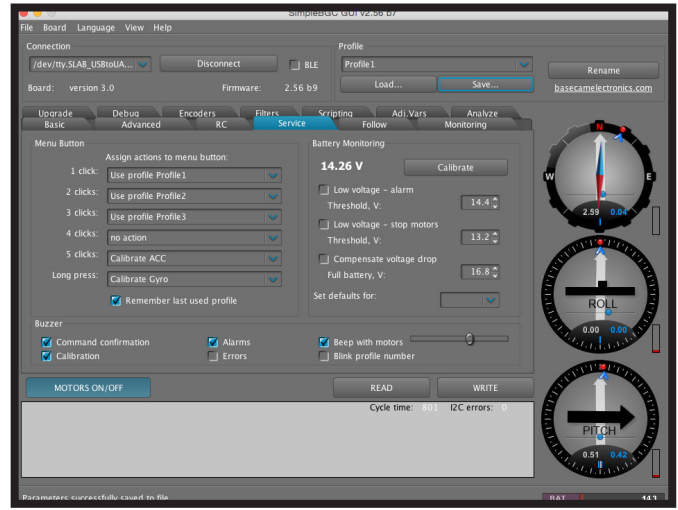


Figure 40

Glidecam CENTURION software service settings.

#14 TROUBLESHOOTING

PROBLEM	SOLUTION
Adjusting the balance is hard to move.	Try loosening the 4 screws around the knob for easier movement. Make sure to tighten all loose screws to increase strength and minimize vibration.
Joystick direction is not going the direction I want.	You can invert the joystick movement in the RC tab of the software. You can also customize the speed.
Weak motors or no power to motors.	Check your batteries and make sure they are fully charged. If you need more power to the motors you can increase the power setting in the basic tab of the software.
Gimbal is creating a slight vibrating.	Make sure the camera is securely attached and all the knobs and screws are tight. Sometimes small vibrations are noticed with lighter camera setups. If this is affecting the footage then lower the Power and “D” value in the software. Always save your current settings before making any changes to the software. If it is not noticed in the footage then don’t change the settings.
Off center axis.	You can trim the pitch and yaw with the joystick. All axes can be held in the position you want for 2 seconds and the axis will hold the new position. You can also re-calibrate the ACC in the software for the new position you want. The roll axis can also be trimmed in the RC tab of the software.
Gimbal is drifting.	Calibrate the gyro. You can do this three different ways. Restart the gimbal, hold the mode switch, or manually do it through the software. In some situations you might need to first reset the gyro calibration in the software and then re-calibrate.
Gimbal axis spins out of control.	Power cycle your gimbal. The motor’s magnetic sensor might have skipped a step. If it continues, connect your gimbal to the software to read any potential errors. Recalibrating the sensors and encoders is the last resort, but should also fix this issue.
Follow mode is too slow or fast.	Speed and settings can easily be adjusted in the “follow mode” tab of the software.

#15 OTHER CAMERA ATTACHMENT METHODS

Creating a gasket: If when attaching your camera to the CAMERA PLATE you find that the bottom of your camera isn't flat enough to allow for a good solid attachment, try making and adding a paper/cloth or rubber gasket to the CAMERA PLATE. (Try using a piece of a rubber dish washing glove.) Simply cut the material to the size of the top of the CAMERA PLATE and then create a hole in it to allow the CAMERA MOUNTING BOLT to fit through it, and into the base of your Camcorder.

Quick release plates: Attach the quick release plate to the Glidecam CENTURION CAMERA PLATE and then follow the balancing steps provided in the manual.

Monitor bracket: The Glidecam CENTURION monitor bracket accessory is sold separately. Attach the monitor bracket to the handlebar and then attach your monitor.

#16 PROFESSIONAL USAGE

If you are using the Glidecam CENTURION to shoot professional looking shots, and you plan on incorporating them into a short movie or some sort of commercial project, we suggest that you plan the shot out in advance, perhaps rehearse the move a few times before shooting, and that you use an assistant to help you during complex shots. This will give you optimum results and will make your movies look more professional.

Good luck with your shooting.

#17 WARNINGS

You should make sure that you are very careful when using the Glidecam CENTURION at night or in low light conditions. Do not make the mistake of focusing so much on what you are shooting that you trip or fall over something, or wander into something dangerous like a swimming pool or automobile traffic, and be extra careful when shooting on stairs etc. These cautions pertain to daytime shooting as well.

Storage - If you are going to store your Glidecam CENTURION for a long period of time then please store the unit in a dry or low to normal humidity area whenever possible. If you are unable to find an environment like this, then we suggest you store the unit in an air tight plastic container or bag. Standing the unit upright helps to alleviate stress on the system. It is also suggested you remove the batteries from the Glidecam CENTURION when placing it in storage.

Cleaning - Do not use solvents or harsh cleaners of any kind on your Glidecam CENTURION. If the unit becomes dirty, use only a cloth or sponge with water to gently rub the unit clean

#18 WARRANTY

For 1 year (90 days for batteries) from the date of shipment, we will repair or replace your Glidecam CENTURION, free of charge, in the event of a defect in materials or workmanship (the shipment date appears on your purchase receipt) which occurs during normal use in accordance with the Glidecam CENTURION's instruction manual. Shipping, packing, and insurance costs to and from the factory are your responsibility. This limited warranty extends only to the original purchaser, and you will need your purchase receipt. This warranty does not cover, by way of example, damage caused by products not supplied by us or damage resulting from mishandling in transit, accident, misuse, vandalism, neglect, modification, lack of reasonable care (or commercial use, including rentals to others) of the Glidecam CENTURION or service by anyone other than us. There are no express warranties except as listed above. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

WE ARE NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE UNIT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD.

To obtain service during (or after) the warranty period: Contact **Glidecam Industries' Customer Service** Department by calling **1-781-585-7900** or write to us at: **23 Joseph Street, Kingston, MA 02364** and explain the problem.

DO NOT SEND THE UNIT TO US WITHOUT FIRST OBTAINING A RETURN AUTHORIZATION NUMBER.

GLIDECAM INDUSTRIES, INC.

For more information
about ***GLIDECAM***
products and training please
visit ***GLIDECAM*** on the web.

www.Glidecam.com

or

Follow us on



[Facebook.com/Glidecam](https://www.facebook.com/Glidecam)



[Twitter.com/Glidecam](https://twitter.com/Glidecam)



[Instagram.com/Glidecam](https://www.instagram.com/Glidecam)

GLIDECAM INDUSTRIES, INC.

23 Joseph Street
Kingston, MA 02364
Phone: 1-781-585-7900
Phone: 1-800-600-2011
Fax: 1-781-585-7903
Website: www.Glidecam.com