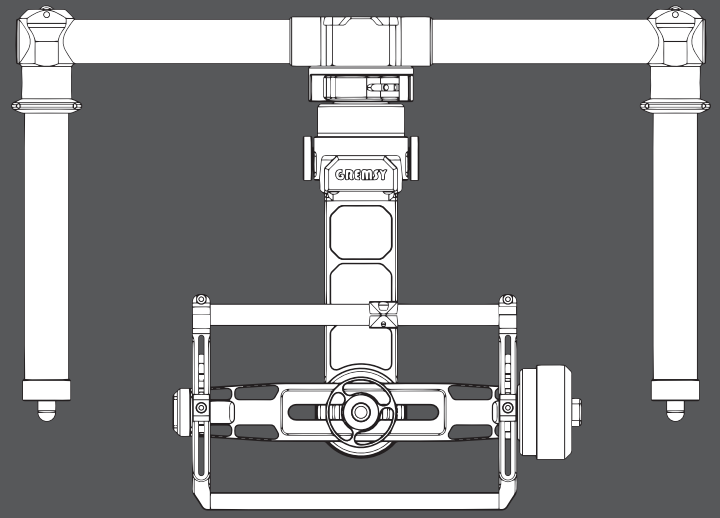
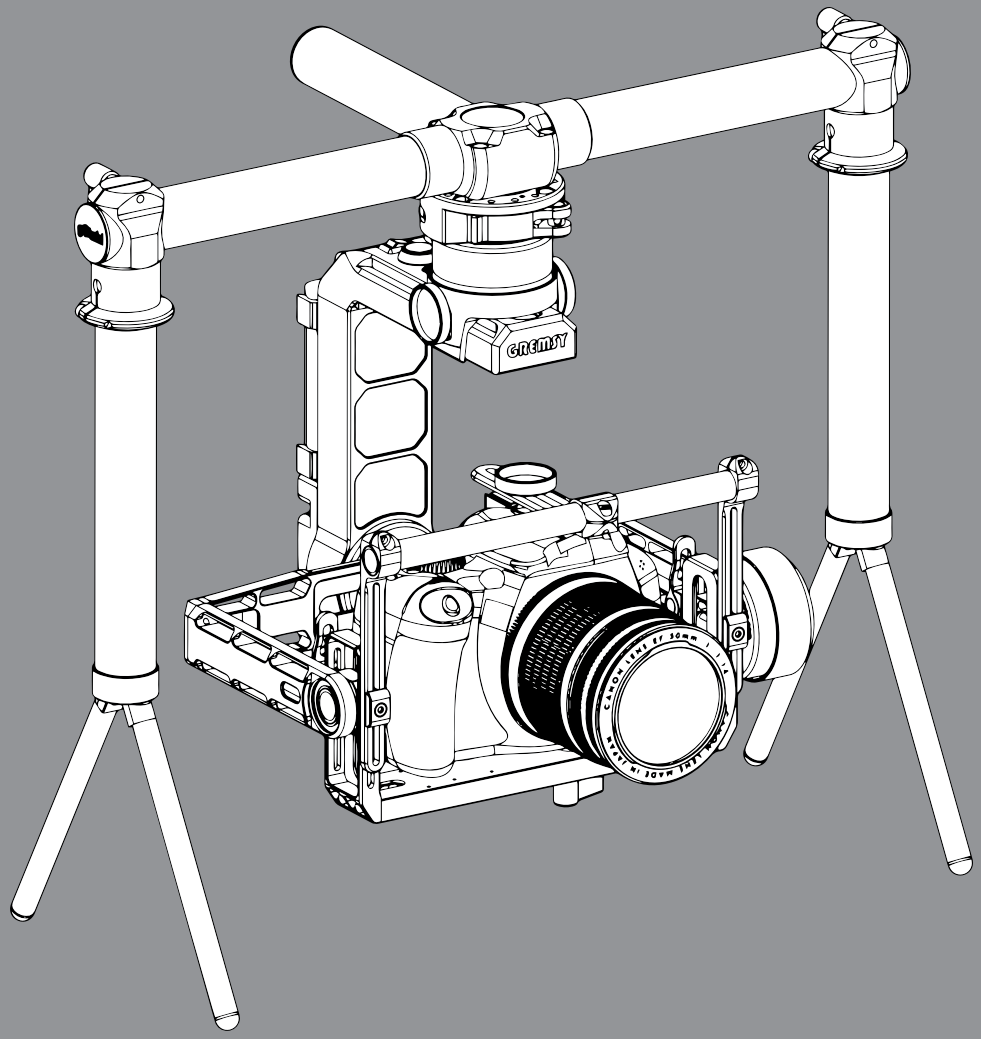
GREMSY H3 USER MANUAL

Ver 1.6





INTRODUCTION

The GREMSY H3, a 3-axis gimbal is the lightest and most powerful gimbal in its class for both handheld and aerial applications. Thanks to ultra high resolution encoders with up to 0.005 degree resolution and advanced motor control in combination with an ultra accurate IMU sensor, the GREMSY H3 produces amazingly smooth footage bringing a new level of stability to even the most demanding situations. The built-in stand makes it extraordinarily portable, compact and convenient during transport. Designed to be as light as possible, the gStabi H3 can support a wide range of professional cameras and accessories with a combined weight of up to 3.7lbs.

CONTENTS

01. GETTING STARTED

- GREMSY H3 components 1
- Charging the battery 2
- Installing the battery 3
- Attentions before starting 3
- Battery handling 4
- Using the built-in stand 5
- Mounting the camera 5
- Powering up the H3 6
- Status LED indicator 7
- Operation mode 8
- Installing software / app 10
- Using USB/WIFI connection 11

02. BALANCING

- Tilt axis front-back balance 13
- Tilt axis vertical balance 14
- Roll axis balance 15
- Pan axis balance 16

03. SOFTWARE-TUNING

- Stiffness tuning 17
- Auto tuning 18
- Expert/advanced settings 19
- Follow mode settings 21
- Rotation limit 22
- IMU sensor 23

04. REMOTE CONTROL

- SBUS/PPM settings 24
- JR/SPEKTRUM settings 26
- JOYSTICK settings 27

05. WORKING OPERATION

- Normal operation 28
- Inverted operation 28
- Suitcase operation 28

06. UPGRADING FIRMWARE

29

07. TROUBLESHOOTING

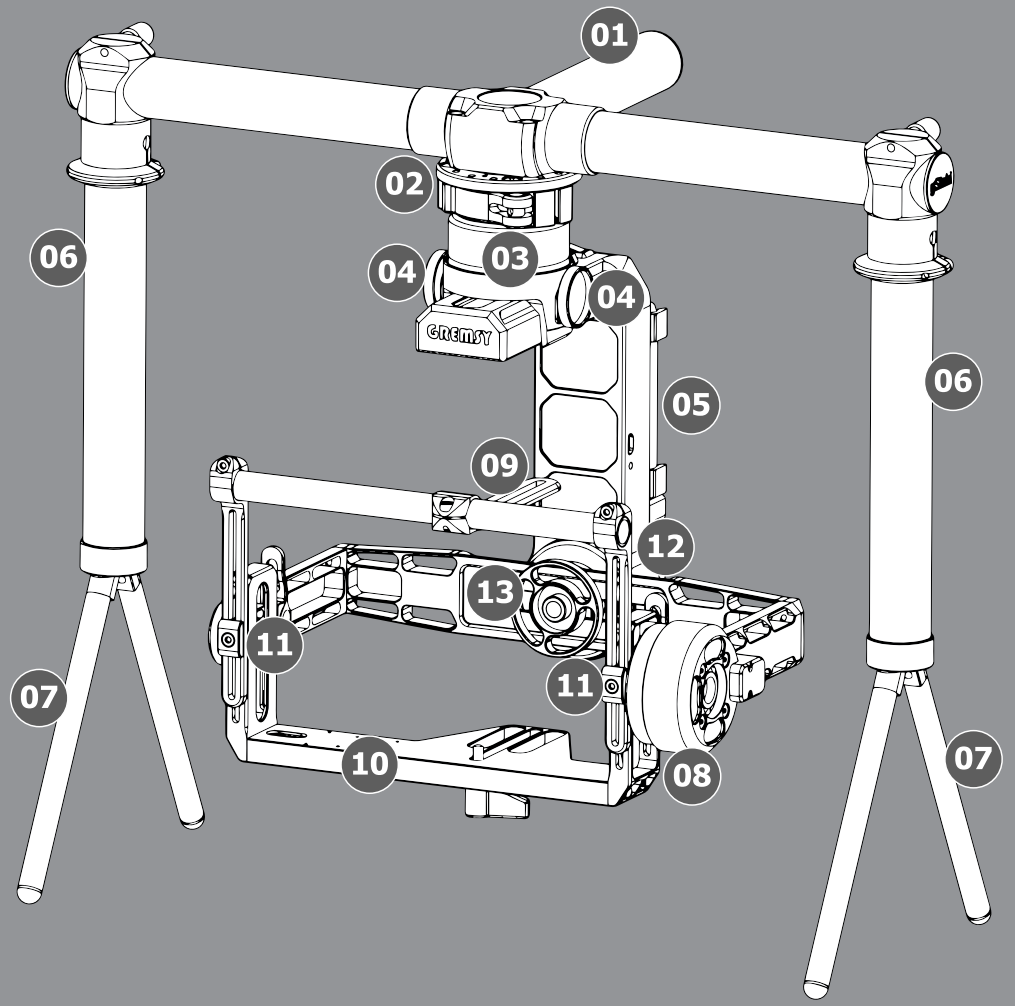
30

08. SPECIFICATIONS

31

GREMSY H3 COMPONENTS

01. Top handle
02. Quick release adapter
03. Pan motor
04. Pan axis adjustment
05. Battery
06. Side handles
07. Built-in stand
08. Tilt motor
09. Top bar slider / hotshoe
10. Camera tray / slider
11. Tilt axis vertical adjustment
12. Roll motor
13. Roll axis extended adjustment



CHARGING THE BATTERY

Follow these steps:

01 → 02 → 03 → 04 → 05 → 06 → 07 → 08 → 09

01. Connect the AC power cord to the charger.

02. Connect the AC power cord to the wall socket. All LEDs will light for 1 second and the charge status LED will flash green, which indicates the charger is ready to charge.

03. Choose Li-ion battery and select the recommended charging current of 2A.

04. Connect the battery main charge lead to the charger lead input on the front of the charger. Make sure the red plug connects to the red socket and the black plug connects to the black socket of the charger.

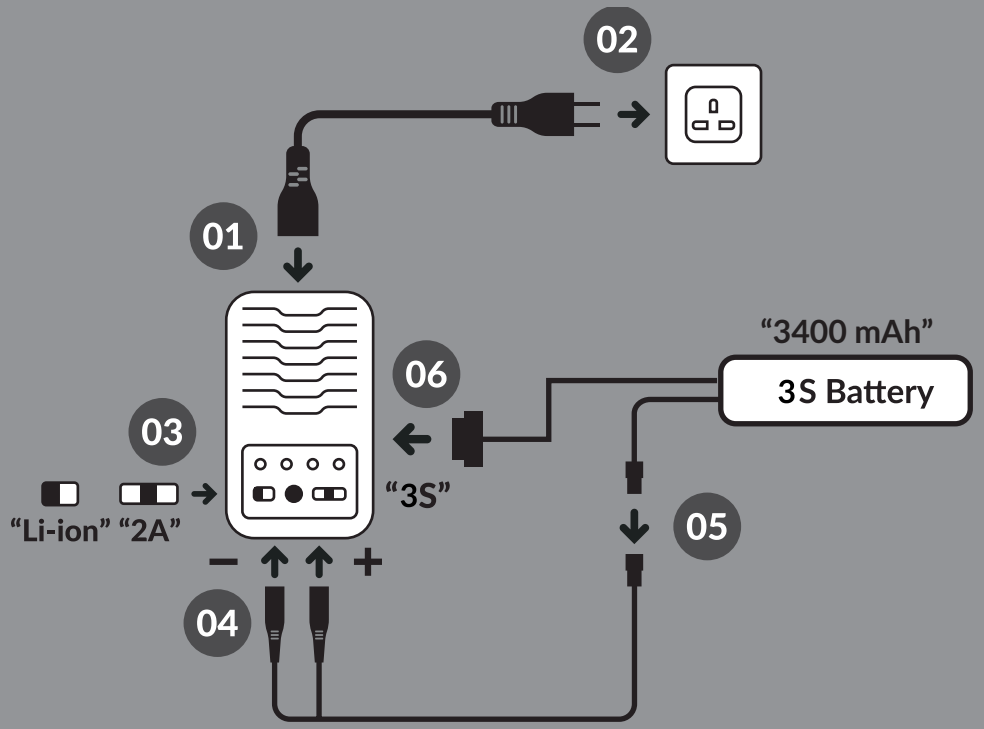
05. Connect the 3S 3400mah gPower battery to the charge lead. Make sure the red positive (+) and black negative (-) terminal connect to corresponding colored terminal on the charger.

06. Connect the battery balance lead to the "3S" balance socket on the side of the charger. The charger will automatically start charging.

07. The cell 1-3 LED's will glow continuously indicating a 3 cell battery pack is being charged. The charge status LED and the cell status LED will light solid red.

08. The charge status LED will glow solid green when the battery is fully charged.

09. Unplug the battery from the balance port and charge lead. The battery is now ready for use.



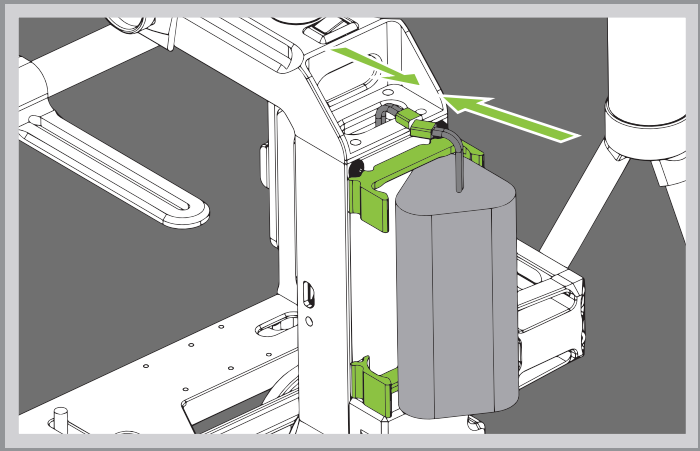
Battery Specification

Battery Type: Lithium Ion
Capacity: 3400 mAh
Voltage: 11.1V
Max Continuous Discharge: 2C (6.2A)
Max Charge Voltage: 4.2V per cell
Minimum Discharge Voltage: 3.0V per cell
Dimensions: 71mm (L) x 34mm (W) x 34mm (H)
Weight: 143.5g

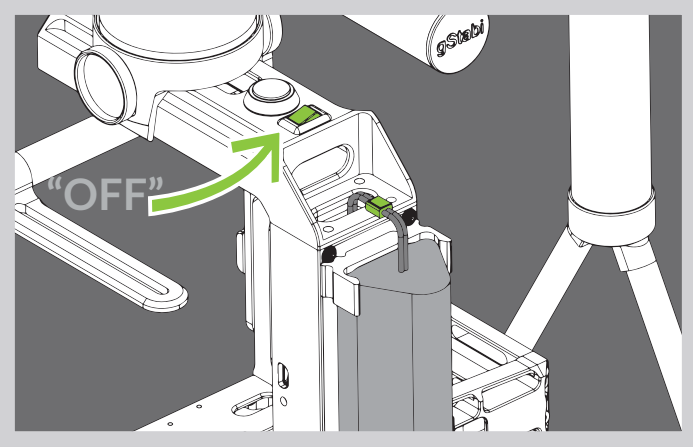
Charger Specification

AC Input Voltage: 100-240V, 50-60HZ
Output Power: 20W
Charging Current (Selected by Switch): 1A, 2A, 3A
Current Drain for Balancing: 200mA
Dimensions: 135mm (L) x 35mm (W) x 20mm (H)
Weight (Without Cable): 176g
4 LEDs for Balancing Indicator
1 LED for Charging Status

INSTALLING THE BATTERY



Slightly put one side of the battery to the battery compar-ment then insert the other side.



Make sure the power switch is set to the “OFF” postition. Then connect the battery lead to the power input connecter of the H3.

NOTE: The battery and input connecter are keyed. Do not force the battery and input connector together.

ATTENTION BEFORE STARTING

- Do not attemp to calibrate the accelerometer unless it is requested by a Gremsy technician.
- Do not perform 360 degree rotations on TILT or ROLL axis otherwises cables will get twisted and broken.

BATTERY HANDLING

01. WHEN USING THE BATTERY

Misusing the battery may cause the battery to get hot, explode, or ignite and cause serious injury. Be sure to follow the safety rules listed below:

- Do not place the battery in fire or heat the battery.
- Do not install the battery backwards so that the polarity is reversed.
- Do not connect the positive terminal and the negative terminal of the battery to each other with any metal object (such as wire).
- Do not carry or store the batteries together with necklaces, hairpins, or other metal objects.
- Do not penetrate the battery with nails, strike the battery with a hammer, step on the battery, or otherwise subject it to strong impacts or shocks.
- Do not solder directly onto the battery.
- Do not expose the battery to water or salt water, or allow the battery to get wet.
- Do not disassemble or modify the battery. The battery contains safety and protection devices which, if damaged, may cause the battery to generate heat, explode or ignite.
- Do not place the battery on or near fires, stoves, or other high-temperature locations. Do not place the battery in direct sunshine, or use or store the battery inside cars in hot weather. Doing so may cause the battery to generate heat, explode, or ignite. Using the battery in this manner may also result in a loss of performance and a shortened life expectancy.
- Do not insert the battery into equipment designed to be hermetically sealed. In some cases hydrogen or oxygen may be discharged from the cell which may result in rupture, fire or explosion.

Immediately discontinue use of the battery if, while using, charging, or storing the battery, the battery emits an unusual smell, feels hot, changes color, changes shape, or appears abnormal in any other way.

- Do not place the batteries in microwave ovens, high-pressure containers, or on induction cookware.
- In the event that the battery leaks and the fluid gets into one's eye, do not rub the eye. Rinse well with water and immediately seek medical care. If left untreated the battery fluid could cause damage to the eye.

If the device is to be used by small children, the caregiver should explain the contents of the user's manual to the children. The caregiver should provide adequate supervision to insure that the device is being used as explained in the user's manual.

- When the battery is worn out, insulate the terminals with adhesive tape or similar materials before disposal.

Be sure to follow the rules listed below while charging the battery. Failure to do so may cause the battery to become hot, explode, or ignite and cause serious injury.

- When charging the battery, either use a specified battery charger or otherwise ensure that the battery charging conditions are met.
- Do not attach the batteries to a power supply plug or directly to a car's cigarette lighter.
- Do not place the batteries in or near fire, or into direct sunlight. When the battery becomes hot, the built-in safety equipment is activated,preventing the battery from charging further, and heating the battery can destroy the safety equipment and can cause additional heating, breaking, or ignition of the battery.
- Do not continue charging the battery if it does not recharge within the specified charging time. Doing so may cause the battery to become hot, explode, or ignite.

02. WHEN CHARGING

The temperature range over which the battery can be charged is10°C to 45°C. Charging the battery at temperatures outside of this range may cause the battery to become hot or to break. Charging the battery outside of this temperature range may also harm the performance of the battery or reduce the battery'slife expectancy.

For optimal performance and extended life, do not allow your battery voltage to drop below 3.3V per cell, or 13.2v total.

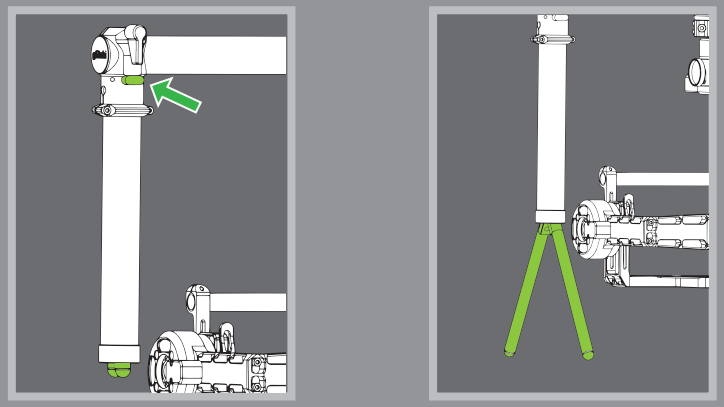
03. WHEN DISCHARGING THE BATTERY

Do not discharge the battery using any device except for the specified device. When the battery is used in devices aside from the specified device it may damage the performance of the battery or reduce its life expectancy, and if the device causes an abnormal current to flow, it may cause the battery to become hot, explode, or ignite and cause serious injury.

The temperature range over which the battery can be discharged is -10°C to 60°C. Use of the battery outside of this temperature range may damage the performance of the battery or may reduce its life expectancy.

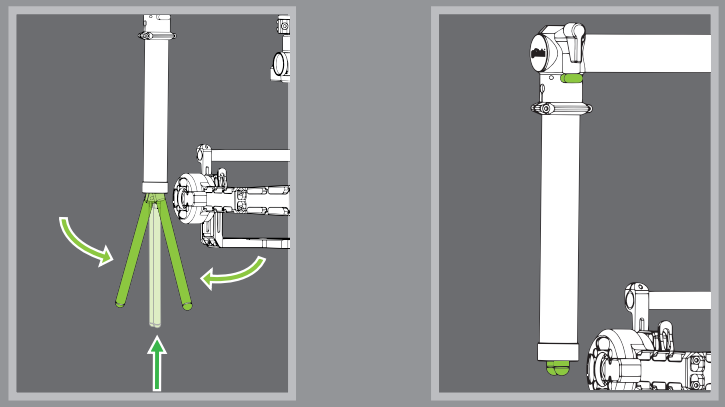
USING THE BUILT-IN STAND

01. POP-OUT STAND



Press the button on top of side handle to release the built-in stand.

02. POP-IN STAND

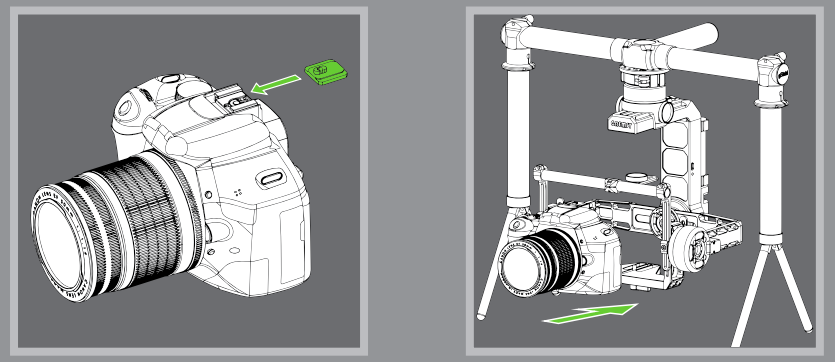


Use hand to close the 2 carbon rods then push it inside the side handles.

WARNING: Be careful when you pop-out the stand, the legs of the stand might hit your eyes.

MOUNTING THE CAMERA

Slide hotshoe on to the camera. Put the camera on to the camera tray. Follow intructions on the section “BALANCING THE H3” on page 13 for more detail.



POWERING UP THE H3

NOTE: always start the gimbal with a balanced camera set up otherwise after initialization the controller will return an error followed by a red color indicator.

After connecting the battery and turning the power switch on, the gimbal will perform gyro calibration (if “Calib Gyros on Start up” is selected) and series of alignments, self tests, which last about 10 seconds and will determine the status of the gimbal, indicated by the Status LED color. During this time , don’t touch the gimbal or camera.

STEP 01:
Connect the battery and turn the power switch on.

STEP 02:
Wait about 10 seconds, do not touch the gimbal or camera.

STEP 03:
If the status LED is blinking green, the gimbal is ready for use. By default, the gimbal is in Follow mode. Press the Function Button one time to turn motors on. Pan and tilt will hold the last orientation during turning on motor in follow mode so use your hand to position pan and tilt as your prefered orientation.

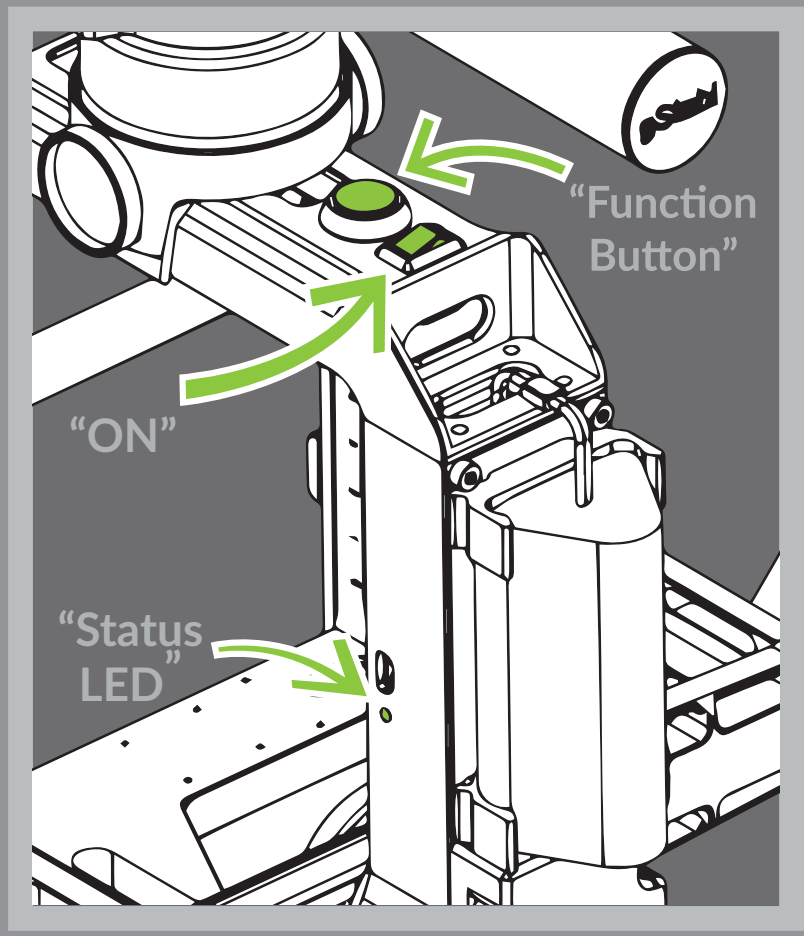
NOTE: the controller will record the pan position the first time you turn motors on as home position. To return to home position, turn motors off and on again.

If the status LED is blinking red, the battery is empty.

If the status LED is solid red, something is wrong with the sensor and motors cannot start.

Connect to the software/apps to check details of the error message.

Read “LED STATUS INDICATOR” in next section for more information.



STATUS LED INDICATOR

STATE	LED STATUS	DESCRIPTION
1	Blink	Low Battery
2	Solid	System Error (Motor or IMU)
3	Blink	Calibrating
4	Solid	System Boot
5	Blink	System Ready
6	Blink	Lock Mode
7	Solid	Follow Mode
8	Blink	Remote with Lock Mode
9	Solid	Remote with Follow Mode
10	Blink	Auto-tuning in process
11	Blink	Canlink with Lock Mode
12	Solid	Canlink with Follow Mode

OPERATION MODE

The GREMSY H3 has 2 operation modes:

LOCK MODE: is a stabilization mode where the camera maintains orientation independently of the rest of the gimbal and the orientation can be changed by an external control signal from remote control or joystick.

FOLLOW MODE: in this mode the camera will mimic the operator's movement and allows one person to control camera tilt and pan without using an external device like a remote control.

The GREMSY H3 supports:

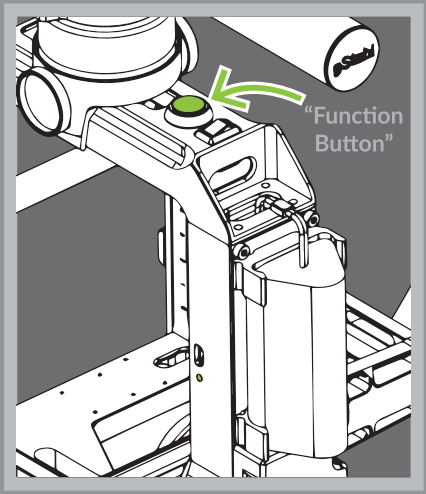
SINGLE OPERATOR: using FOLLOW mode or Joystick to control the direction of a camera.

DUAL OPERATOR: a second operator can use a Remote Controller (SBUS, SPEKTRUM) or iPad Application with Motion/Gesture Control.

SWITCHING BETWEEN MODES

USING THE "FUNCTION BUTTON"

PRESS TIMES	MODES
Once time	Turn motors on
2 times	Lock mode
3 times	Follow mode
Hold 3 seconds	Turn motors off
4 times	Calib Gyros



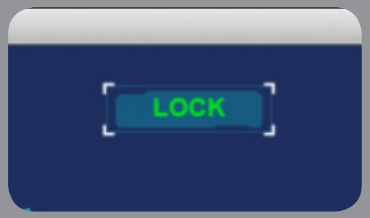
USING THE MODE CHANNEL ON REMOTE CONTROL

POSITIONS	MODES
01	Follow mode *Motors on*
02	Lock mode *Motors on*
03	Motors off

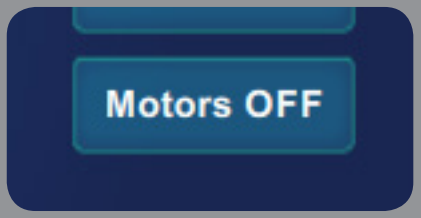
NOTE: if there is a remote control signal, changing modes or turning motors on/off by other methods such as using the function button or software will not take effect because the remote control signal has highest priotity and override the command.

OPERATION MODE

USING SOFTWARE



Click on the Lock/Follow button at the top-right corner of the software window to toggle between modes.



Click on Motors ON/OFF to turn motors ON/OFF.

USING IPAD

Click on the Lock/Follow icon to choose Lock Mode/Follow Mode.

Click on the center circle icon to turn motors On/Off.

USING IPHONE

Click on the Lock/Follow icon to choose Lock Mode/Follow Mode.
Click on the center circle icon to turn motors On/Off.

USING ANDROID

Click on the Lock/Follow icon to choose Lock Mode/Follow Mode.
Click on the center circle icon to turn motors On/Off.

INSTALLING THE SOFTWARE / APP

Download at:

www.gremsy.com -> Support -> Software & Manuals.

USING USB/WI-FI CONNECTION

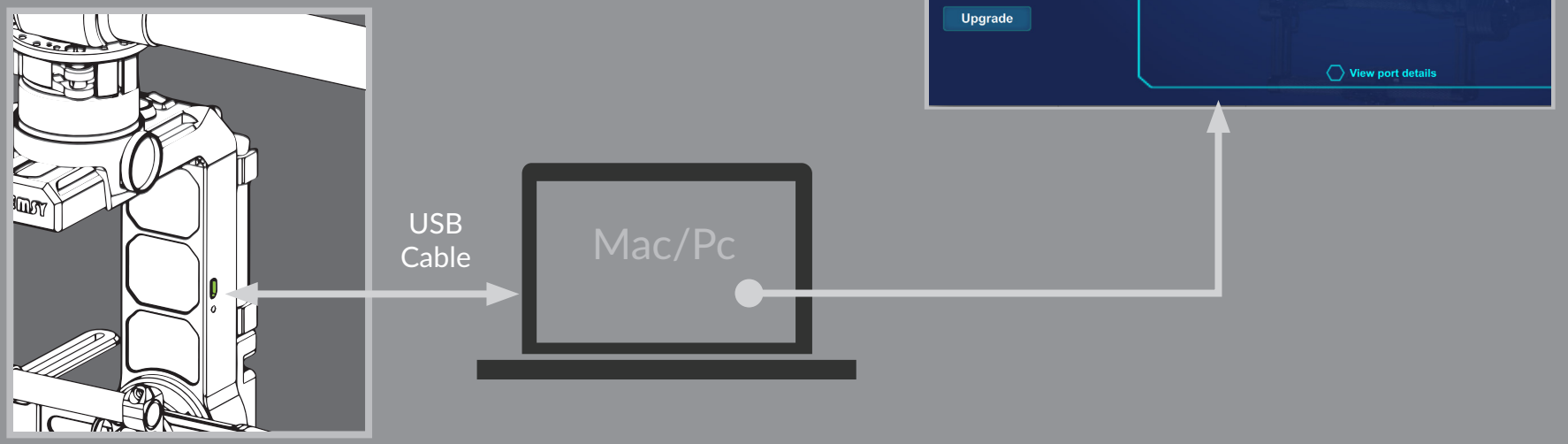
To configure and monitor data of gStabi Software/Apps either USB/WI-FI connection is required.

01. USING USB:

NOTE: make sure the Silab USB driver is already installed. Driver can be found at: *www.gremsy.com -> Support -> Software & Manuals.*

STEPS TO CONNECT:

1 - Power on the H3.
2 - Connect USB cable from gStabi controller to Mac/PC.
3 - Run the gStabiSC software.
4 - In gStabiSC software, select “Serial” option on “connection” tab.
5 - Select the port in the list.
6 - Click on the “Connect” button.



USING USB/WI-FI CONNECTION

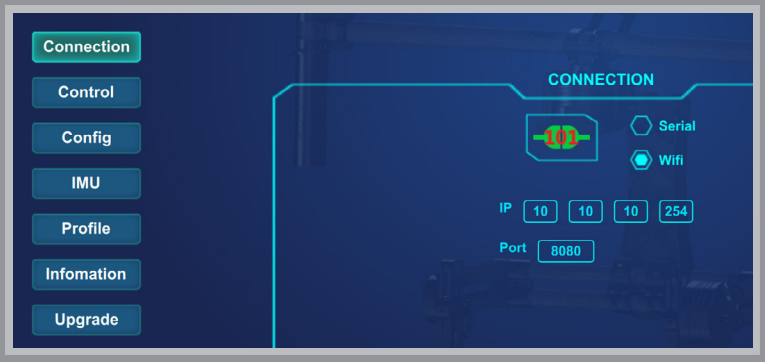
02. USING WI-FI CONNECTION:

DEFAULT WI-FI PASSWORD:
gremsygstabi

ON MAC/PC

STEPS TO CONNECT:

1 - Select the wifi network named gStabi_xxxx
2 - Enter the default wifi password: gremsygstabi
3 - Run the gStabiSC software.
4 - In the gStabiSC Software, select the “Wifi” option on the “Connection” tab.
5 - Click on the “Connect” button.



Wifi connection default values:

IP: 10.10.10.254
PORT: 8080

ON iOS/ANDROID DEVICES

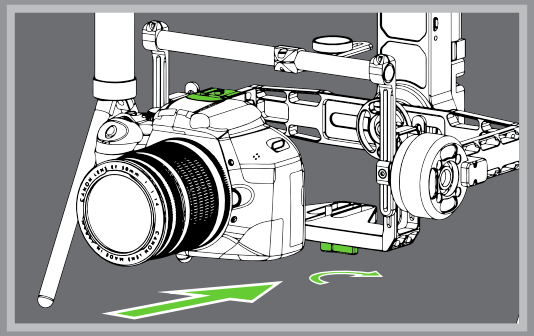
STEPS TO CONNECT:

1 - Select the wifi network named with gStabi_xxxx
2 - Enter the default wifi password: gremsygstabi
3 - Start the gStabi Application. Application will detect and connect to gStabi System automatically.

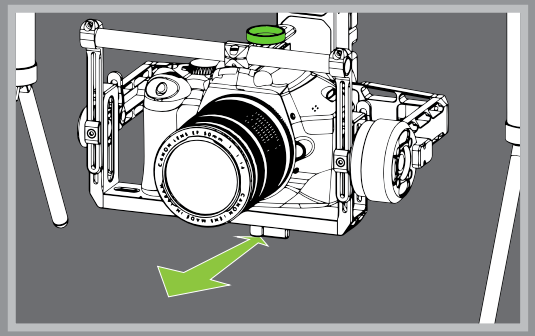
To achieve the best performace from the gStabi, proper balancing is necessary. Accurate balance is critical in shots where the gimbal will be subjected to extreme movements or accelerations (running, horseback riding, biking, car mounts, helicopters...). Proper balance will result in longer battery runtime.
There are 3 axes that need to be precisely balanced prior to powering up the gimbal.

STEP 1: TILT FRONT-BACK BALANCE

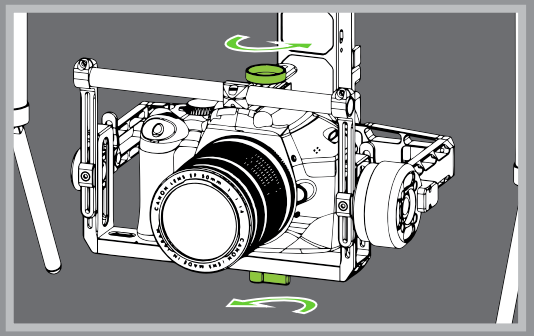
When the proper front-back balance is achieved, the camera will stay level when you remove your hand.



1. Insert the camera to the camera tray and slightly tighten the camera using thumbscrew .



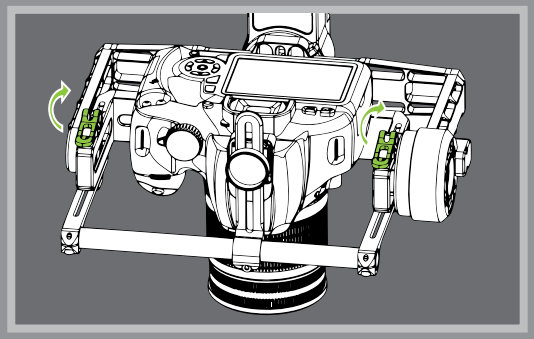
2. Slightly tighten the knob on the top bar to the hotshoe. Gently slide the camera forward or backward until the tilt axis remains level.



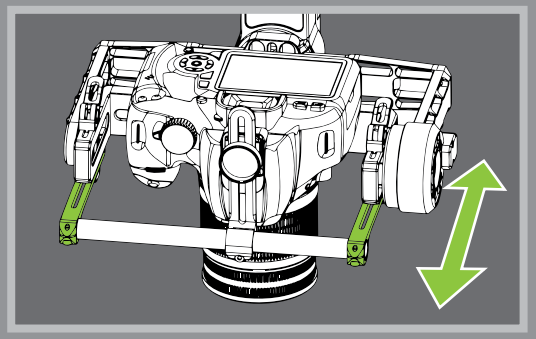
3. Tighten the thumbscrew and the top bar knob to lock the camera and camera tray in position.

STEP 2: TILT VERTICAL BALANCE

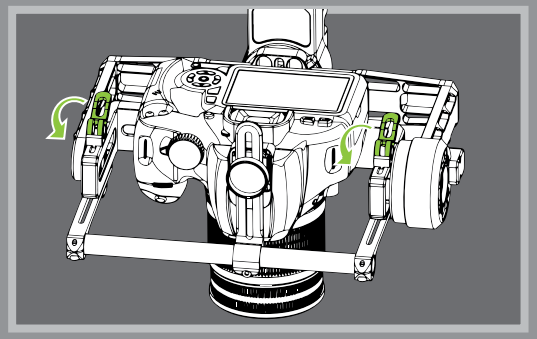
When the proper vertical balance is achieved, you can rotate the camera in any angle and it will stay at that position.



1. Rotate the tilt axis so that the lens is pointing upward and loosen both vertical adjustment clamps.



2. Gently slide the camera tray and the top bar forward and backward until the camera remains pointing upwards when released.

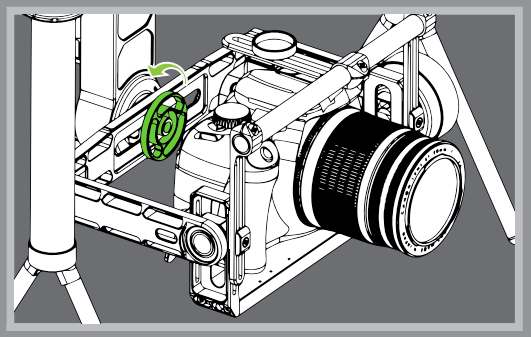


3. Tighten the clamps and check the number markings on both vertical bars are the same.

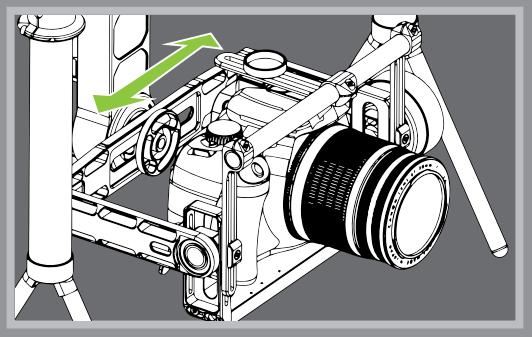
Sometimes you may need to go back to tilt front to back balance if the vertical balance could not be achieved.

STEP 3: ROLL BALANCE

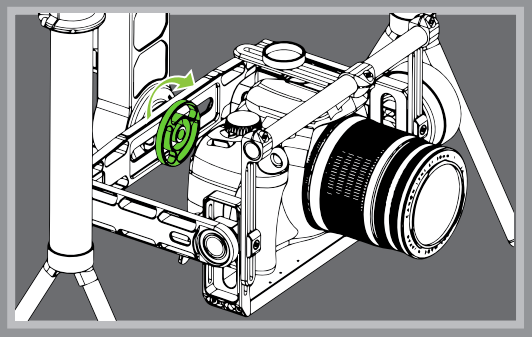
When the proper left-right roll balance is achieved, the camera will stay level when you remove your hand.



1. Loosen the adjustment knob of the roll axis to allow the roll bar to slide left and right.



2. Slide the camera left or right until roll axis remains level.

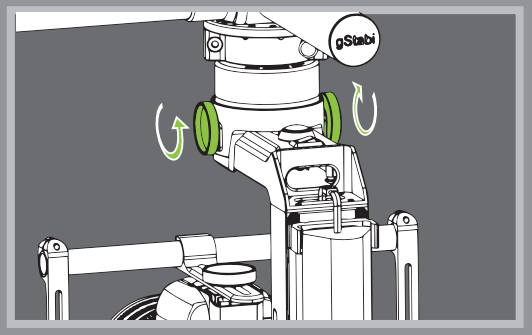


3. Tighten the adjustment knob of the roll axis to lock the roll bar in position.

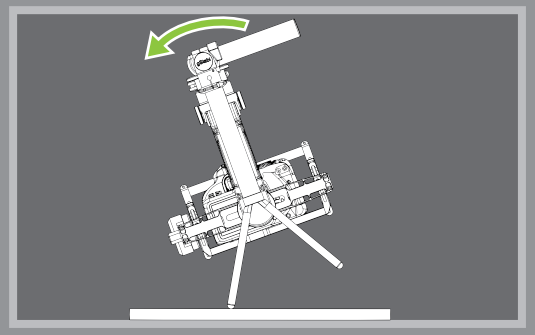
STEP 4: PAN BALANCE

NOTE: Make sure the battery is installed before doing Pan Balance.

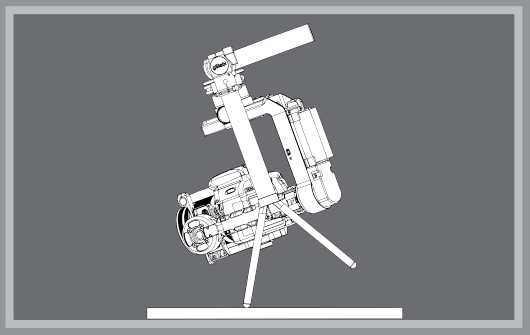
Tilt the handle about 20 degrees and identify if the gimbal is front heavy or back heavy. Slide the pan axis slider until the camera does not swing.



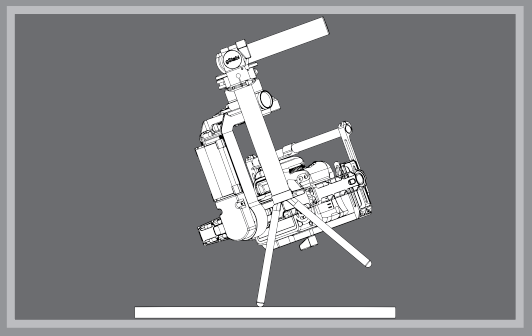
1. Gently loosen the knobs on the pan axis slider to allow the pan axis slider to slide front or back.



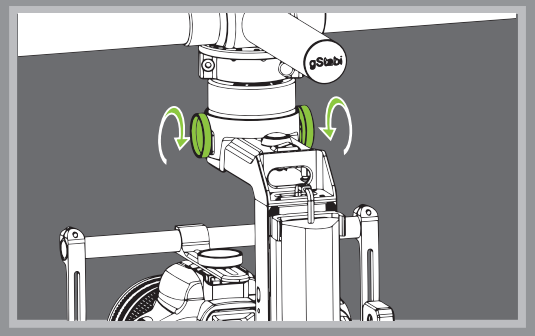
2. Align pan axis parrallel with the handle bar and release. Observe which way the pan axis rotates.



3. If the front of the gimbal is pointing to the low side it means the gimbal is front heavy. Slide the pan axis slider to back.



4. If the back of the gimbal is pointing to the low side it means the gimbal is back heavy. Slide the pan axis slider to front.



5. Try sliding the pan axis slider to the front or back until the camera does not swing and camera will stay at any given position when released. Tighten both knobs to make sure pan axis slider is locked in place.

After the camera is balanced on the gStabi, it's time to fine tune some parameters for best performance.

STIFFNESS TUNING

Stiffness settings have a significant impact on the performance of the gStabi System. The "Stiffness" settings adjust the degrees to which the gimbal tries to correct for unwanted camera movement and hold the camera stable. The higher you can run the setting without vibration or oscillation, the better.

GENERAL METHOD:
Start with a low value of 20 for all axes then turn motors on. Slowly increase this setting until you feel an oscillation in each axes, then reduce it until the oscillation subsides. You can touch on the camera to feel the oscillation during tuning. Increase the stiffness setting 5-10 points at a time until oscillation appears then reduce 5 points until oscillation subsides.

STEP 01 - TILT STIFFNESS
Slowly increase this setting until you feel an oscillation in the tilt axis, then reduce the setting until the oscillation subsides. Make sure there is no vibration when tilting the camera up and down and when moving the handle in any orientation.

STEP 02 - ROLL STIFFNESS
Slowly increase this setting until you feel an oscillation in the roll axis, then reduce the setting until the oscillation subsides. Pick the gstabi up and make sure there is no vibration when you move the handle around.

STEP 03 - PAN STIFFNESS
Slowly increase this setting until you feel an oscillation in the pan axis, then reduce the setting until the oscillation subsides. Pick the gstabi up by the top handle and make sure that no vibrations are present when you move the handle around.

AUTO TUNING

The Auto-Tuning function provides automatic adjustment of each motor's stiffness value to find a good setting, the process will take around 1-2 minutes. Please turn motor on prior to starting Auto-Tuning.

NOTE:
The settings found by Auto-Tuning are usually good to start with, however it's recommended to manually reduce stiffness if there is oscillation in a specific axis or increase stiffness in case if it is too low.

EXPERT / ADVANCED SETTINGS

ADVANCED SETTINGS

There are some advanced parameters that normally do not need to be adjusted. Leave these parameters at default settings unless they are required for troubleshooting.

GYRO TRUST:

If this value is high, attitude estimation will trust the gyro more and the accelerometer less. If Gyro Trust is too high attitude estimation is only accurate short term and will drift over time since gyros are subject to drift. If Gyro Trust is low, attitude estimation is accurate in long term but is subject to the effects of horizontal acceleration and will cause the attitude estimation to be inaccurate while accelerating/decelerating.

OUTPUT FILTER:

Defines the strength of the filter applied to motors output. If the gimbal has oscillations that cannot be corrected by adjusting stiffness settings, you can use the Output Filter to further tune the gimbal and remove the oscillation.
If the oscillation is fast or buzzing (high frequency), try increasing Output Filter.
If the oscillation is slow or rocking (low frequency), try decreasing Output Filter.

NOTE: the higher the Output Filter is changed, the more delay you add to the motor output. Normally for lightweight cameras, the inertia of the camera is small therefore the rate of change in movement is fast, in turn it's necessary to keep the filter low enough so that motor output is not lagging compared with rate of change in movement of camera. For heavy cameras the inertia of the camera is large therefore the rate of change in movement is slow which allows a higher Output Filter. Higher filter values also results in higher stiffness settings but too much filter could cause low frequency vibration.

DEFAULT VALUES:

Gyro Trust	200
Gyro Filter	2
Output Filter	4

GYRO FILTER:

Defines the strength of the filter applied to to Gyro sensor output. If the gimbal has oscillations that cannot be corrected by adjusting stiffness settings, you can use the Gyro Filter to further tune the gimbal and remove the oscillation.
If the oscillation is fast or buzzing (high frequency), try increasing Gyro Filter.
If the oscillation is slow or rocking (low frequency), try decreasing Gyro Filter.

NOTE: the higher the Gyro Filter the more delay you add to angle estimation of the controller. Normally for lightweight camera, the inertia of camera is small therefore the rate of change in movement is fast, in turn it's necessary to keep the filter low enough that angle estimation of the controller is not lagging compared with rate of change in movement of the camera. For heavy cameras the inertia of the camera is large therefore the rate of change in movement is slow which allows a higher Gyro Filter.

EXPERT / ADVANCED SETTINGS

EXPERT SETTINGS

There are some expert parameters that normally do not need to be adjusted. Leave these parameters at default settings unless they are required for troubleshooting.

If “Auto power adjustment“ is selected, “Hold strength” will be the minimum power level required for corresponding axis. The controller will automatically adjust power level from minimum to maximum level depending on displacement between current angle and commanded angle.

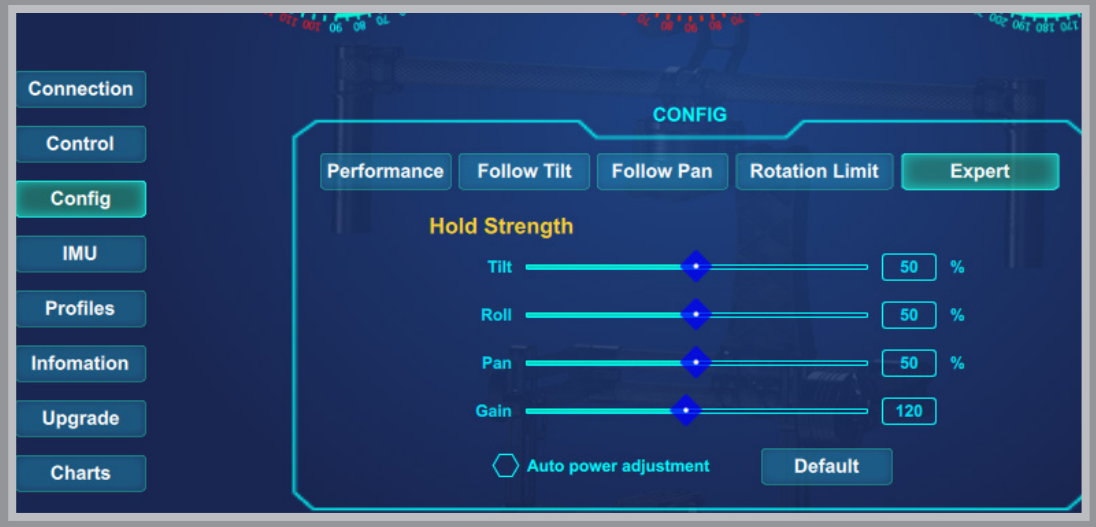
NOTE:
For heavy cameras it’s suggested to increase hold strength for each axis around 10% than default value.

If “Auto power adjustment” is not selected “Hold strength” will be fixed power level provided to corresponding axis and should be adjusted manually. This option is only recommended for advanced users.

Gain:
Defines how fast each axis will return to commanded positon.

To reload default expert settings just press “Default” in expert menu.

HOLD STRENGTH	TILT	ROLL	PAN
	40	40	40
GAIN	120		
Auto power adjustment: Selected			



FOLLOW MODE SETTINGS

The most widely used mode in handheld application is follow mode where the gimbal operator controls pan and tilt of the camera. The camera movement will mimic the user's input from the handle while footage remains stable. Once you finish tuning "Stiffness" settings properly you can adjust some parameters of follow mode to achieve a satisfying result. The follow mode can be configured to be either very linear and robotic, or smooth and cinematic.

SPEED:

Defines how fast camera will follow handle movement.

SMOOTHNESS:

Smooth out the camera movement by adjusting this parameter.
The higher the value is the smoother camera moves but at the expense of more delay in following the movements of the handles.

WINDOW:

When the handle movement is out of the window zone, the camera starts to move. Within the window zone, the camera maintains its direction.

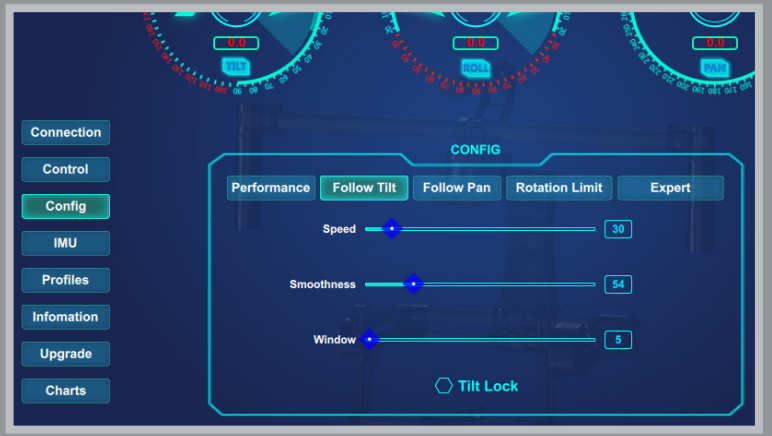
TILT LOCK:

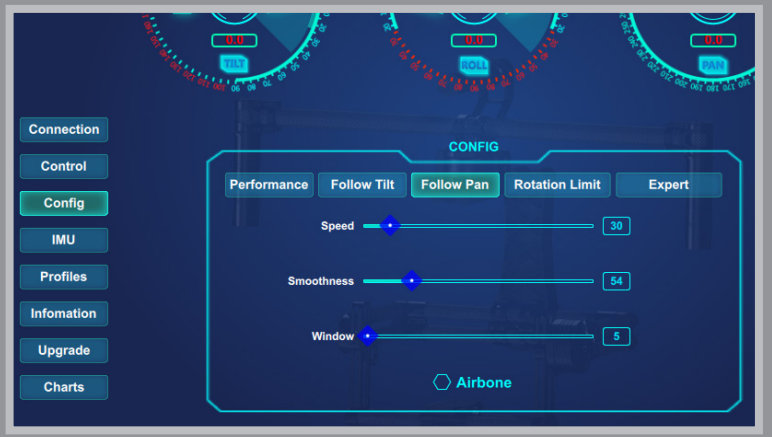
If this option is selected, the tilt axis will maintain its angle and only be controlled by joystick or remote control.

NOTES:
When walking or running, it's recommended to set the tilt window to 20-30 degrees or have "Tilt lock" selected to reduce walking motion in the footage.
When riding a horse or running, it's recommended to set the pan window to around 20-30 degrees because you can't hold the gimbal still.

AIRBORNE:

This feature is not available on the H3.





ROTATION LIMIT

Travel of each axis can be limited using UP LIMIT and DOWN LIMIT.

UP LIMIT:

Set the up limit for tilt or roll axis (in 1 degree unit).

DOWN LIMIT:

Set the down limit for tilt or roll axis (in 1 degree unit).

TILT OFFSET:

Set the tilt offset (in 0.1 degree unit) and is only applicable when there is no remote control signal since remote control will override the tilt angle.

ROLL OFFSET:

Set the roll offset (in 0.1 degree unit) is only applicable when there is no remote control signal since remote control will override the roll angle. This is useful to fine trim the horizon.

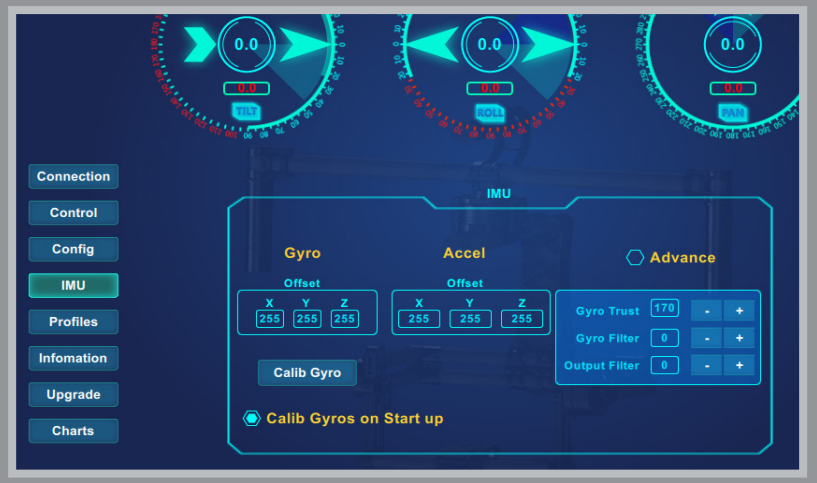
IMU SENSOR

The IMU sensor used in the H3 is a combination of a high precision 3 axis gyroscope sensor and a 3 axis accelerometer sensor. The H3 controller has a special algorithm to provide attitude estimation based on input data from the IMU sensor. This attitude estimation helps the controller to command motor output to compensate for camera movement.

GYRO CALIBRATION:

It's suggested to calib Gyro if you notice any kind of drift in any of the axes although the controller has had made a dual point temperature calibration and compensation at the factory. Excessive Gyro drift will cause horizon drift and unwanted behavior. To do Gyro Calibration please turn motors off and make sure the gimbal remains perfectly stationary during calibration. It will take 3 seconds to complete a Gyro Calibration.

NOTE: After Gyro Calibration, Gyro Offset X, Y, Z will change to a new value depending on the temperature.



ACCELEROMETER CALIBRATION:

Do not use this function, please contact Gremsy Support Engineers. Accelerometer sensor was calibrated properly at factory to achieve accurate horizon level with special and precise equipment. Users do not need to do this unless it's required for troubleshooting.

REMOTE CONTROL

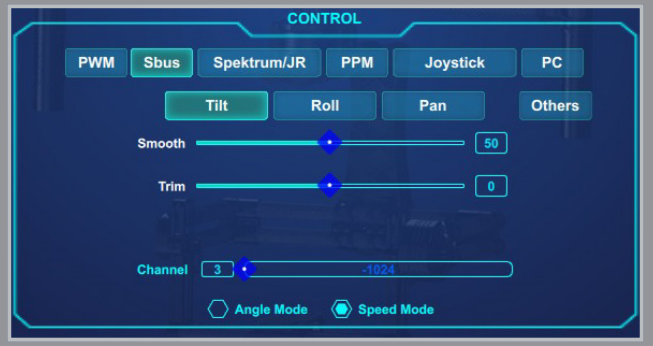
gStabi supports SBUS, SPEKTRUM and PPM receivers. There are some parameters to be aware of before assigning channels to the receiver.

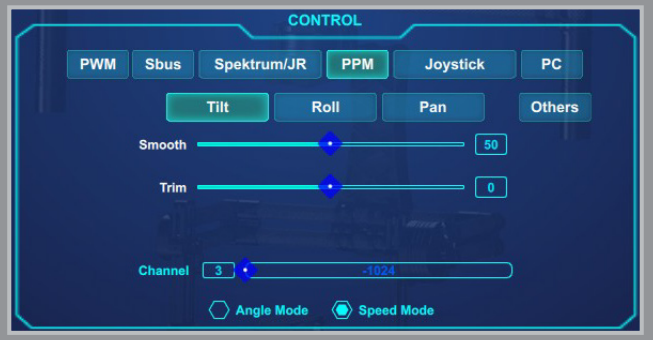
SMOOTH: increasing this number will smooth out the movement of the corresponding axis but will also cause a delay.

SPEED: increasing this number will increase the speed of movement in the corresponding axis. Only applicable in Speed Mode.

SPEED MODE: when speed mode is selected, the speed of the corresponding axis will depend on how far the stick position is from the neutral position. It is recommended that TILT and PAN channels should be set to speed mode.

ANGLE MODE: when angle mode is selected, the corresponding axis will move to the angle set by current stick/knob position. It's recommended ROLL channel should be set to angle mode.

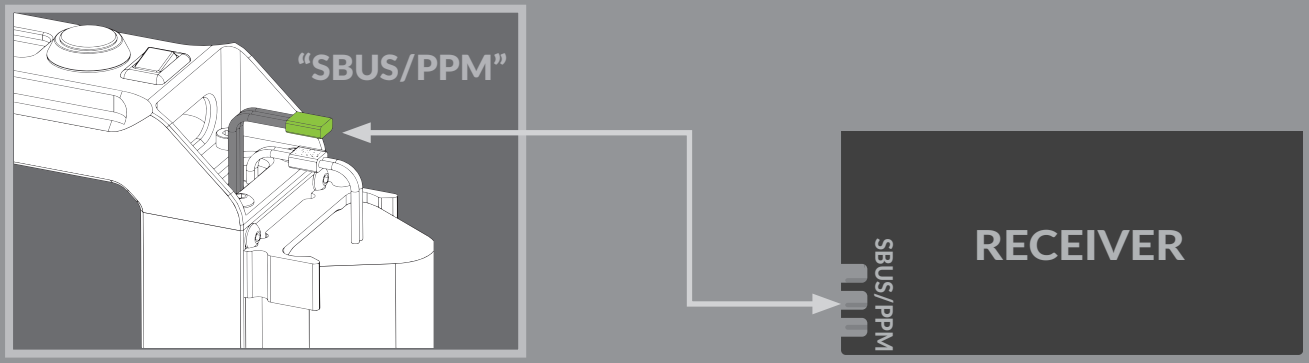




SBUS/PPM SETTINGS

RECEIVER CONNECTION

Simply connect SBUS/PPM wires from the receiver to the SBUS/PPM connector of the gStabi controller.



NOTES: The SBUS/PPM port has 5V output to power the receiver, please do not use external power supply to power the receiver at the same time. Doing so may damage the electronic inside the gimbal.

SBUS/PPM SETTINGS

CHANNEL SETTINGS

There are 6 channels to assign : MODE, TILT, ROLL, PAN, TILT SPEED, PAN SPEED.

Assign MODE channel first then follow the order above because MODE channel is used to change operating modes of the gimbal and should be assigned with a 3 position switch as follows:

Switch at position 1: FOLLOW MODE , MOTORS ON
Switch at position 2: LOCK MODE , MOTORS ON
Switch at position 3: MOTORS OFF

TILT and PAN channel should be in speed mode and ROLL channel in angle mode.

TILT SPEED or PAN SPEED could be assigned to the same channel and should be assigned to throttle stick,dial, or other non-centering control on the transmitter.

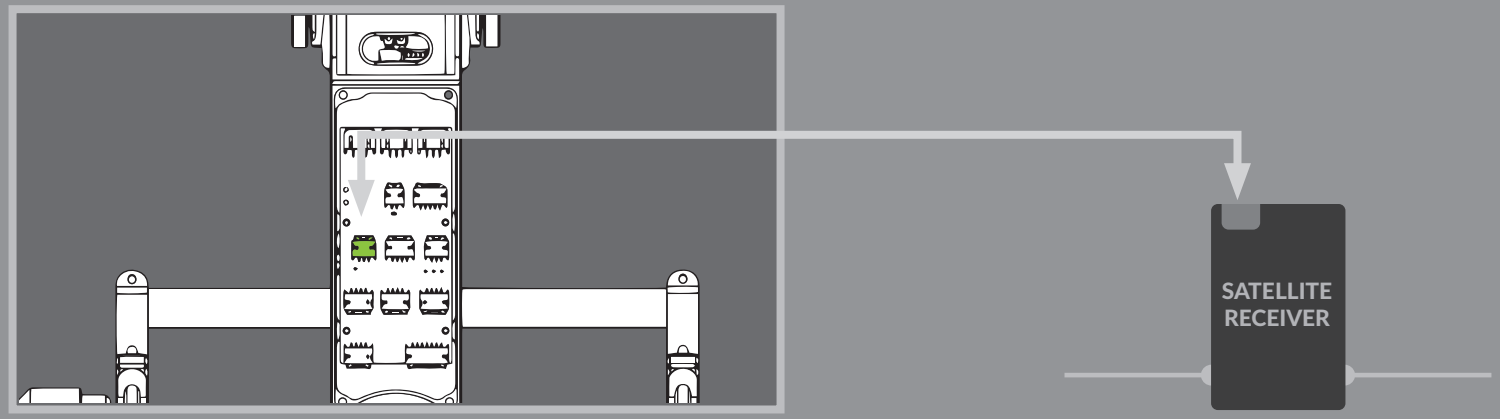
Below is an example of channel assignment to the Futaba T8FG.

	CHANNEL	CONTROL	NOTE
MODE	5	SC	3 positions switch
TILT	2	J2	Speed mode
ROLL	4	T4	Angle mode
PAN	1	J1	Speed mode
TILT SPEED	3	J3	
PAN SPEED	6	RD	

JR / SPEKTRUM SETTINGS

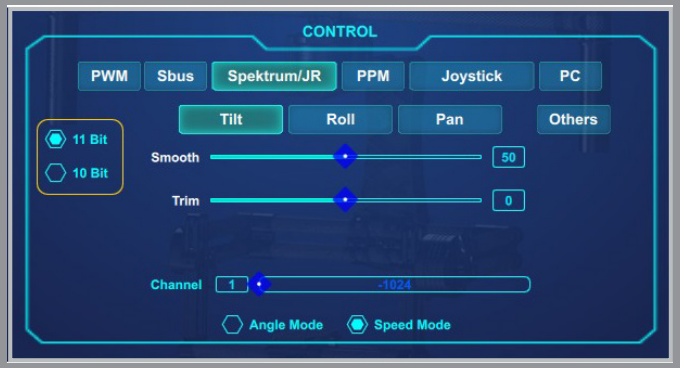
JR / SPEKTRUM SATELLITE RECEIVER CONNECTION

Open the plastic cover and connect satellite receiver to the correct connector as shown in the picture. Make sure satellite receiver is already bound to the transmitter (RED led is solid).



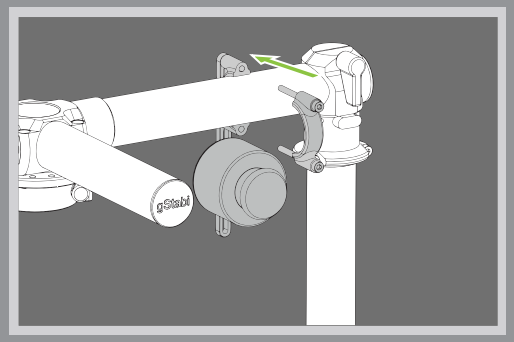
CHANNEL SETTINGS

Choose 10 bit or 11 bit type resolution on the software and assign proper channels as per SBUS settings.

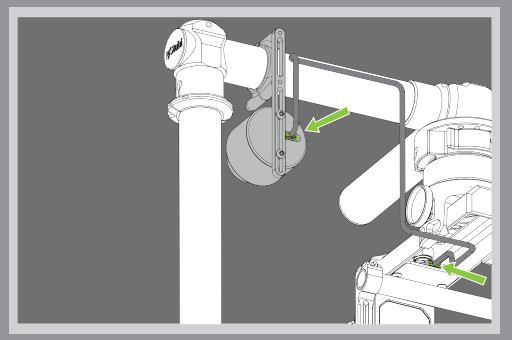


JOYSTICK SETTINGS

JOYSTICK CONNECTION



Install joystick bracket using 2xM3 to hold the joystick in place.



Connect joystick cable on the joystick connector and on the pan bracket.

JOYSTICK SETTINGS

To enable Joystick operation user should select “JOYSTICK” in CONTROL menu and switch to Lock mode.

Pan and till speed , Pan and till smoothing are adjustable via software as below.

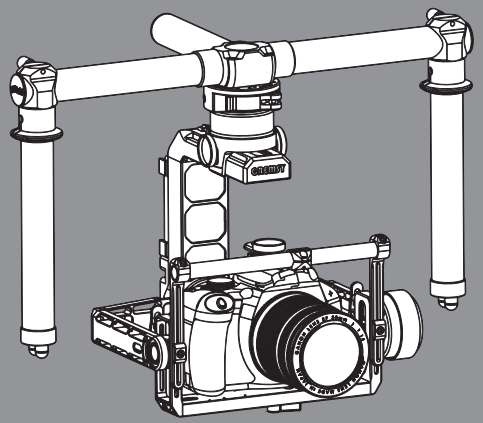
SMOOTH: increasing this number will smooth out the movement of the corresponding axis but will also cause a delay.

SPEED: increasing this number will increase the speed of movement in the corresponding axis.

There are 3 types of operation in the gStabi: Normal, Inverted and Suitcase operation. For normal and inverted operation gStabi automatically detects the operation mode as well as camera tray position (top or bottom) during start up for proper operation without any user input.

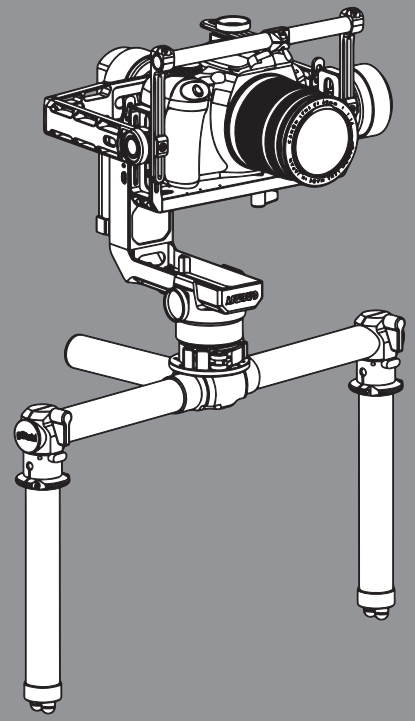
NORMAL OPERATION

The standard and default operation where the camera is underslung.



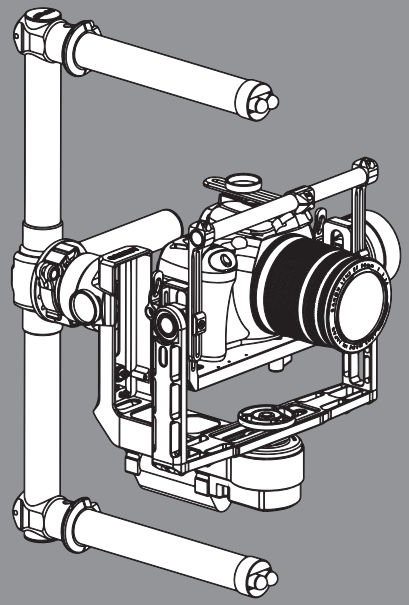
INVERTED OPERATION

When the gimbal is in follow mode and normal operation, flip the gimbal forward 180 degrees and it will change to inverted operation.
Moreover you can set the gimbal into Inverted operation before turning it on, it is useful for car mounts or other high camera position, as it allows you to shoot higher and/or at eye level.



SUITCASE OPERATION

Suitcase operation allows you to hold the gStabi in a small profile close to your body and easily move along a narrow space.
To enter suitcase operation, set the gimbal in lock mode then tilt the gimbal on the roll axis 90 degree to the left or right then change to follow mode. To return to normal/inverted operation simply set the gimbal into lock mode then move the handle to normal/inverted operation.



UPGRADING FIRMWARE

Only USB connection allows upgrading firmware.

Refer to Section "01. GETTING STARTED" for USB connection.

NOTE:

- Make sure Silab USB driver is already installed. Driver can be found at: *www.gremsy.com -> Support -> Software & Manuals.*

- *Download the lastest firmware at: www.gremsy.com -> Support -> Software & Manuals.*

HOW TO UPGRADE:

1 - Power on the H3.
2 - Connect USB cable from gStabi controller to Mac/PC.
3 - Run the gStabiSC software.
4 - In gStabiSC software, select "Serial" option on "connection" tab.
5 - Select the port in the list.
6 - Click on the "Connect" button.
7 - Go to "Upgrade" tab.
8 - "Browse" to firmware file from your computer.
9 - Click "Upgrade" button. The process will take about 2 minutes.

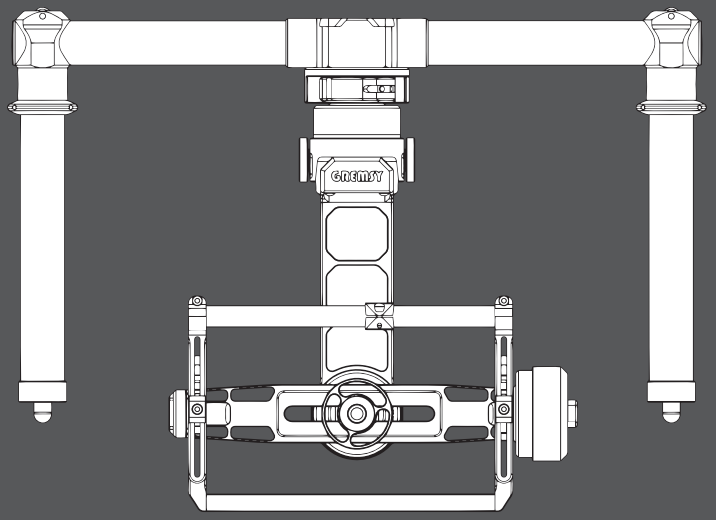
HOW TO CHECK FIRMWARE VERSION:

1 - Click "Information" tab.

PROBLEM	POSSIBLE CAUSES	SOLUTION
Status LED is blinking red	Low Battery	Recharge battery
Status LED is solid red during startup	Camera is not balanced well or not installed	Check camera balancing
	IMU cable is loose	Check in software for IMU sensor error, re-seat IMU sensor connector
	Tilt motor cable or encoder cable is loose	Check in software for Tilt error, re-seat tilt motor connector and encoder connector
	Roll motor cable or encoder cable is loose	Check in software for Roll error, re-seat roll motor connector and encoder cable
	Roll motor cable or encoder cable is loose	Check in software for Pan error, re-seat pan motor connector and encoder cable
Status LED is solid red during operation	IMU sensor cable is loose	Re-seat IMU sensor connector
Status LED is solid white after start up	Exessive gyro drift	Re-calibrate
gStabi seems to be drifting	Gyro sensor is drifting too much	Re-calibrate gyro
gStabi has ossilation in one or more axes	Stiffness setting is too high	Reduce stiffness
	Quick clamp/thumbscrew/top bar nut is not tightented	Check tightening. If necessary adjust the clamp tension with a hex wrench
	Camera mounting is not stiff enough	Check camera mounting
	Filters settings are incorrect: Gyro and output filter should only be changed if other methods of reducing oscillation have failed	Please read more in manual about Gyro filter and output filter (Advaced settings)
Motors seem to be weak	Stiffness is too low	Increase stiffness
	Autopower adjustment is not enabled	Check in Expert menu if Autopower adjustment is enabled or not
Footage appears to wobble side to side or up and down	Camera is not properly balanced	Check camera balance
	Stiffness setting is low	Increase stiffness settings. If you can identify which axis is poorly stabilized, start with that axis' Stiffness. Higher Stiffness will achieve better stabilization. The tuning process is described in the user manual.

Product Name	GREMSY H3
System Type	3-Axis Digital Gyro-Stabilized
Weight (without battery)	1.37 kgs / 3.0 lbs
Weight Ecofly (without battery)	0.96 kgs / 2.1 lbs
Camera Cage (Standard) (L X W X H)	90mm x 162mm x 150mm
Construction	Aluminum, Carbon Fiber
Input Voltage	12.6 VDC
Battery	3S 3400mAh Li-ion (weight: 143.5 g)
Connection	USB, Wifi
Payload	1.7 kgs / 3.7 lbs
OS Platform Supported	Windows / Mac / iOS / Android
Single Operator	Follow Mode, Thumb Joystick
Dual Operator	SBUS / Spektrum/ PPM
Pan Range	360 degree continuous
Tilt Range	+/- 90 degree
Roll Range	+/- 45 degree
Encoder Resolution	0.005 degree

GREMSY®



gremsy.com