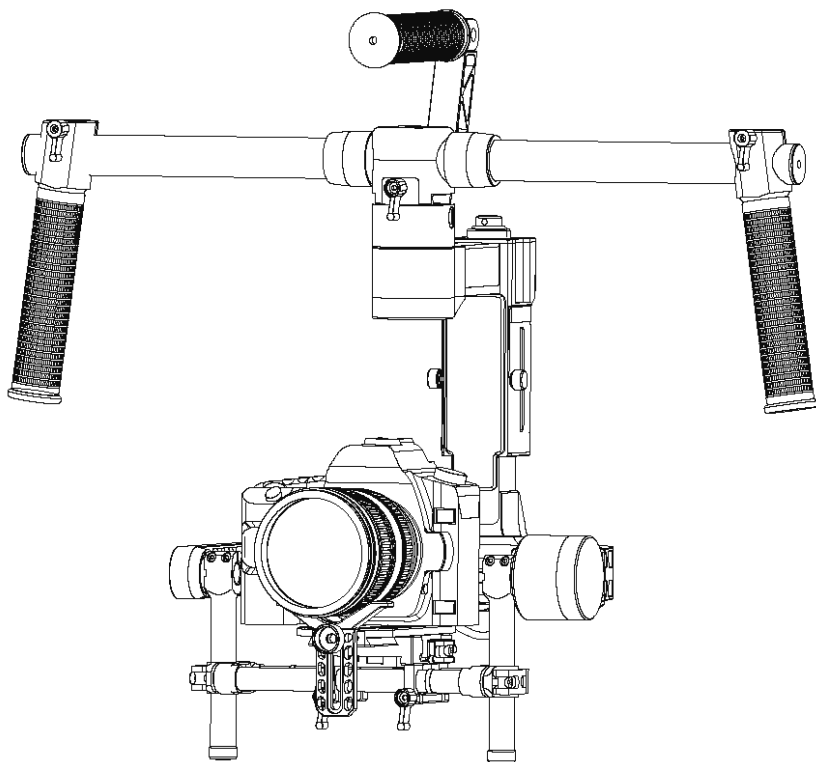


SHINING 闪灵

User Manual



Disclaimers and warnings

Congratulations on purchasing your new Zhiyun product. Please read this manual and disclaimer carefully before using this product.

By using this product, you hereby agree to this disclaimer and signify that you have read it fully. You agree that you are responsible for your own conduct and any content created while using this product, and for any consequences thereof. You agree to use this product only for purposes that are proper and in accordance with local regulations, terms and any applicable policies and guidelines.

Do not modify or adjust the Shining. As Zhiyun has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed or accepted for any resulting damage or injury. By the using, setting up, or assembling of the product, the user accepts all resulting liability. Zhiyun assumes no liability for damages or injuries incurred directly or indirectly from the use of this product.

You shall get product information and user manual through visiting the theme page of Shining in www.zhiyun-tech.com. Please check the latest manual according to the version number. If not, please download and use the latest one. Zhiyun shall not inform of the manual upgrade.

If you meet some problems while setting up the product, please turn to the authorized agent or Zhiyun client service center for help. Zhiyun and Shining are registered trademarks of Zhiyun. All names of products, brands, etc., appearing in this manual are trademarks or registered trademarks of their respective owner companies. This product and manual are copyrighted by Zhiyun, with all rights reserved. No part of this product or manual shall be copied or translated in any form without permission.

Using the manual

Legend



Important



References or Definitions

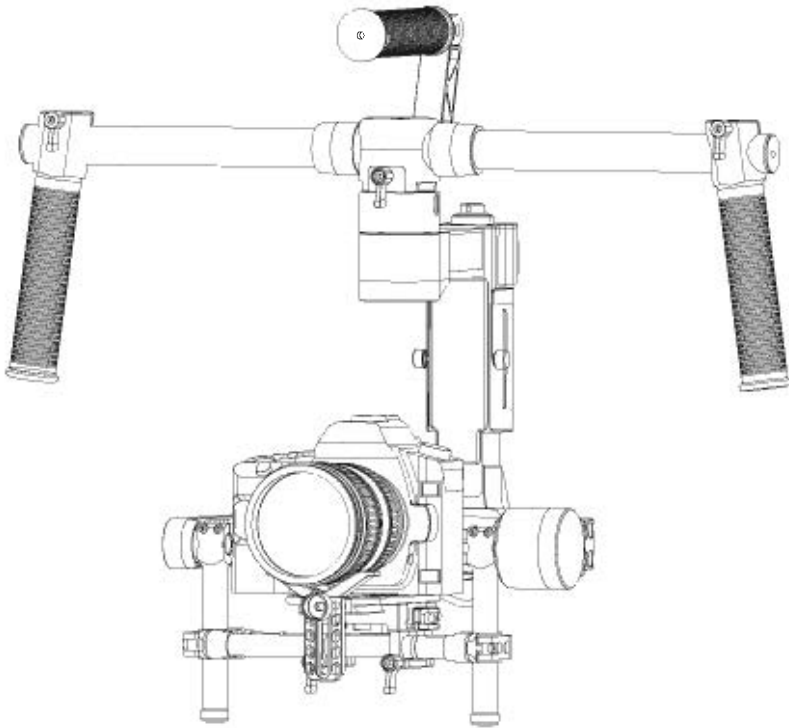
Summary

Developed for filmmaking professionals, the Zhiyun Shining marks a generational leap forward in camera stabilization technology. The Shining is light, small and convenient to use. The technology built into the Zhiyun Shining allows a broad spectrum of cameras, of varying sizes and weights, to be stabilized during filming.

A brushless gimbal stabilization system is not simply three brushless motors moving on three axes. Shining can process movement calculation in milliseconds, which reduces angular vibration to less than $\pm 0.05^\circ$ of translated movement, meaning that the camera will remain perfectly steady. The Shining can be used in two operation modes: Locking Mode and Pan and Tilt Following Mode.

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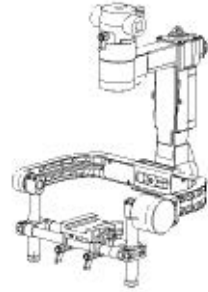
Shinning Features

1. The first professional gimbal with removable 18650 batteries, advanced protection technology from over-discharge, reverse and over-current.
2. Each motor, with the automotive grade magnetic encoders, brings precise sine wave FOC, and very smooth torque.
3. Quick, simple and tool-less camera mounting system saves time and effort.
4. Multiple 1/4 inch screw thread brings more convenience for auxiliary equipment.
5. The built-in wireless control module can be connected with Zhiyun's gimbal remote controller or smartphone APP which can also be used for wireless control and firmware upgrade.
6. The industry's first to achieve 32bX4 MCUs , running in parallel at 4k hertz. The number is far beyond the reach of any other gimbals.
7. 9-axis IMU sensor, combined with Zhiyun's efficient attitude control algorithm and advanced servo control algorithm, the gimbal is able to sense, compute then control the camera to a 0.01-degree accuracy, within 0.25 millisecond.
8. Very broad load range (350g - 3600g), from Mirrorless to professional DSLR without parameter adjustment.
9. Advanced control method and clever roll space design, enter three status (underslung, upright and briefcase) without any settings, avoid over stress caused by camera reverse.
10. Reserved external extended interface to meet future constantly increased accessories.

Packing List

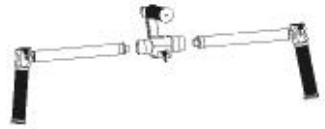
Gimbal x1

The Shining includes built-in Zhiyun motor drive modules, USB port, an external interface port, a 32-bit DSP processor, a battery protection module, a built-in wireless module, a built-in independent IMU module.



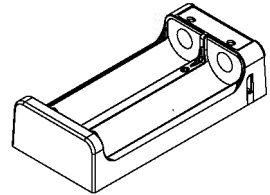
Handle Bar x1

Customizable handle bar for the gimbal. The handle bar is assembled from five parts, including a top handle, two handle bars and two grips.



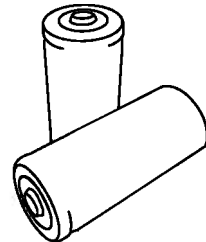
Li-ion Battery Charger x2

Customized for 18650 Li-ion Battery.



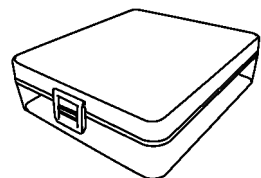
18650 Li-ion Battery x8

Capacity:2000mAh



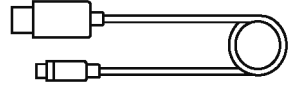
Battery Storage Box x2

For 18650 Li-ion batteries.



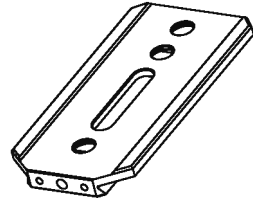
Micro-USB Cable x2

For upgrade and batteries charge.



Camera Mounting Plate x1

For mounting your camera onto the gimbal.



Accessories Package

Camera Screw A (1/4") x2

Camera Screw B (3/8") x2

Camera Screw C (1/4") x2

Camera Screw D (3/8") x2

Lens Support x1

Lens Support Screw x1

3 mm Allen Wrench x1

6 mm Allen Wrench x1

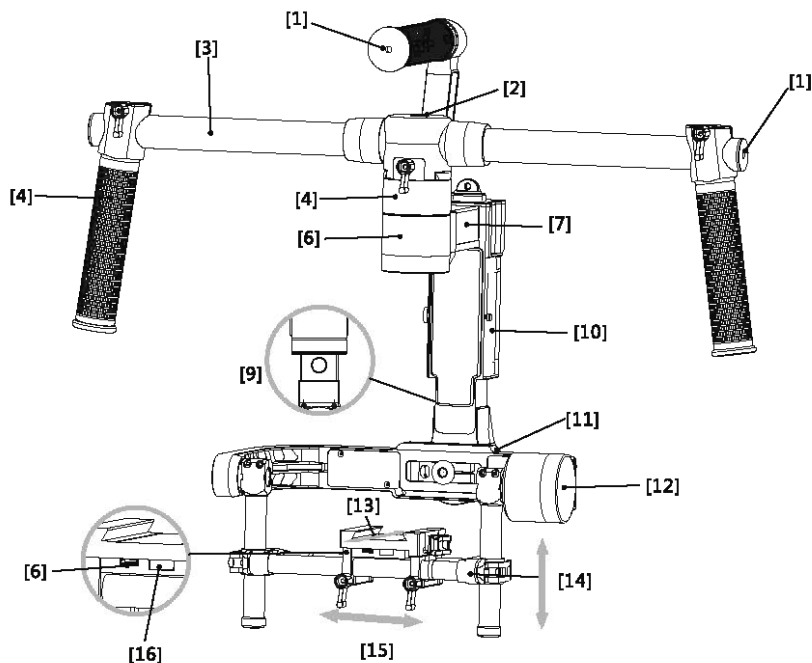
Certificate of Quality x1

User Manual x1

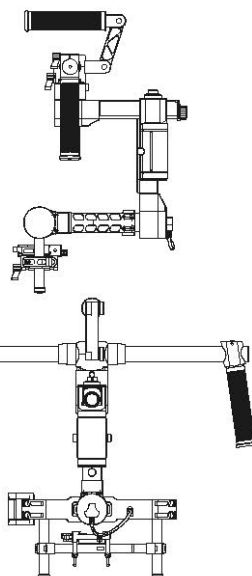
Warranty Card x1



Shining Diagram



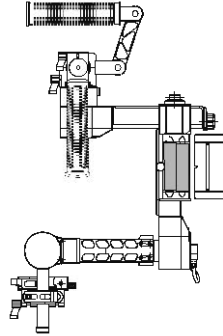
1. 1/4 Screw thread
2. 3/8 Screw thread
3. Top Handle Bar
4. Side Handle
5. Quick Release Mount
6. Pan Motor
7. Pan Adjustment Slider
8. USB Port
9. Power Button
10. Batteries compartment
11. Roll Motor
12. Tilt Motor
13. Fore and Aft Adjustment
14. Tilt Vertical Adjustment
15. Roll Adjustment
16. Extended Function Interface



Getting Started

18650 Li-ion Battery

Zhiyun 18650 Li-ion battery was specially designed for the Shining. Before you start using your Shinning, be sure to charge the battery with Zhiyun approved charger. When the 18650 Li-ion batteries are fully charged, the Shining has a maximum run-time of six hours. (When installing the batteries, please note the cathode and anode.)



Power Protection

Over-Discharge Protection	Discharging stops automatically when the battery voltage reaches 3.0V, preventing over-discharge damage
Short-Circuit Protection	Automatically cuts power supply when a short circuit is detected

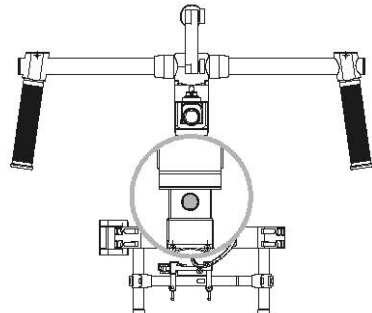
Zhiyun 18650 Li-ion Battery Specifications

Type	Li-ion
Capacity	2000mAh
Charging Environment Temperature	0° C~40° C
Operating Environment Temperature	-10~40° C
Charging/Discharging Environment Relative Humidity	<80%

- Note: be sure that every battery is fully charged in the right way, any battery voltage lower than 3.0V cannot run the gimbal.
- Always use Zhiyun approved chargers. Zhiyun takes no responsibility for any consequences resulting from the use of non-Zhiyun approved chargers.

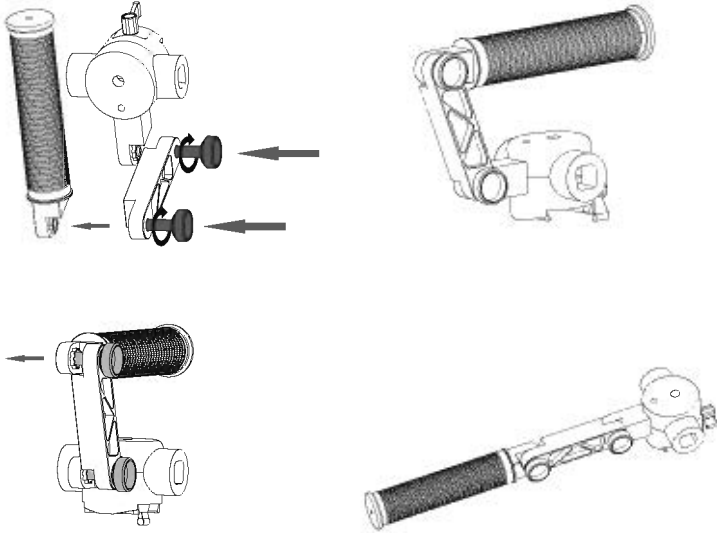
Turning on the Shinning

Press the Power button, Shining enters standby mode. After about seven seconds, Shining starts to work. The default mode is Following Mode.



Assembling the Handle Bar

1. Adjust the handle bar to the angle you need, then tighten the screw. If a re-adjustment of the angle is needed, loosen the screw and pull the handle in radial direction, when the angle is proper, tighten the screw again.



2. Attach the handle bars to both sides of the top handle and tighten the grip screws.

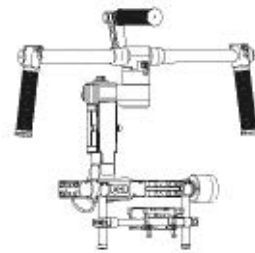
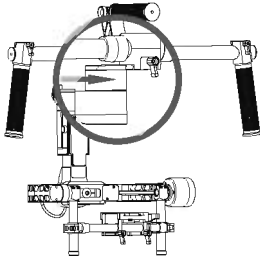


3. Attach the grips to the handle bar and lock them in the preferred position.



Installing Handle Bar onto the Gimbal

1. Place the handle bar in position as shown below, then slide it horizontally into the gimbal and tighten the lock-knob.
2. Hold the gimbal by the grips, make sure that the gimbal is not obstructed during a 360 degrees pan. The installation is complete.



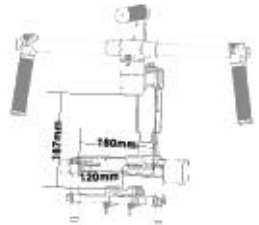
Mounting the Camera

The Shining uses an adjustable camera mounting plate that allows you to easily balance, install and remove the camera. The Shining has been tested with the following types of cameras. Other cameras similar in size and weight may also be compatible.

Black Magic Cinema Camera	Canon 5D MK III	Nikon D800
Black Magic Pocket Cinema Camera	Canon 6D	Panasonic GH3
Canon 1Dc	Canon 7D	Panasonic GH4
Canon 5D MK II	Canon C100	Sony α 7 series



1. Make sure the gimbal is not turned on when mounting the camera.
2. Camera Size Requirements: The maximum depth from the center of gravity on the camera base plate is 120 mm. The maximum width is 169 mm as shown in the image to the right. The maximum height, measured from the top of the camera base plate, is 187 mm as shown in the image to the right.
3. To avoid obstructing camera movement, the use of soft connection cable is recommended.



1. Attach the camera mounting plate to your camera using the provided camera screws A, B, C or D. Camera screws A and B only fit the holes of the mounting plate, while the camera screws C and D only fit the slot of the mounting plate. Be sure to use the correct 1/4" or 3/8" screws. Secure the camera as firmly as possible. Some cameras have two tripod mounting holes. If two mounting holes are available on your camera, use them both. Choose the correct screw holes, according to your camera's configuration.

2. Install the lens support by gently pushing it up, so that it is applying light pressure to the lens. Then tighten the thumbscrew.

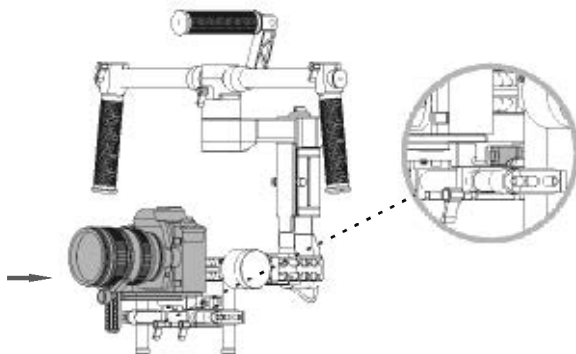


Why do you need a lens support?

Q Certain cameras have a very tight lens securing system, and some cameras such as the Canon 5D MK II and MK III have very loose lens securing systems. The Shining balances the camera as one solid unit. If the mounted camera has a loose lens securing system, the lens support must be used. This is because a loose connection between the lens and the camera body may allow vibrations that travel through to the camera but not directly to the lens, resulting in the two masses shaking at different frequencies. The resulting oscillations will be transmitted to the IMU, causing the whole gimbal to shake. If the lens support fits, it's best to use it at all times.

! · The lens support can be installed facing outward or inward to accommodate different lens types.
· Ensure alignment of the camera plate and then tighten the mounting screw, before tightening the lens support.

3. With the gimbal facing outward on the tuning stand, slide the mounting plate into the receiver until the safety lock engages. Make sure the gimbal is not turned on when balancing the camera.

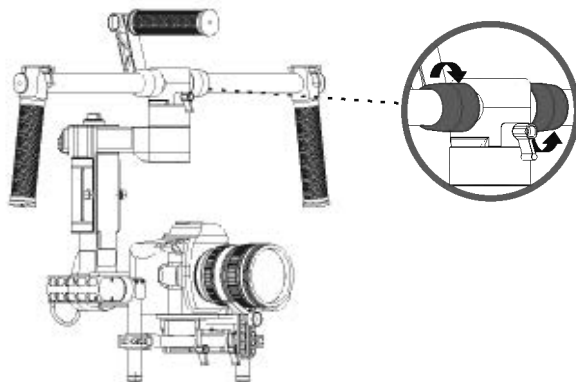


4. When the camera achieves a rough balance, tighten the camera base side clamp. You can adjust the tightness of the clamp with an Zhiyun Allen Wrench.

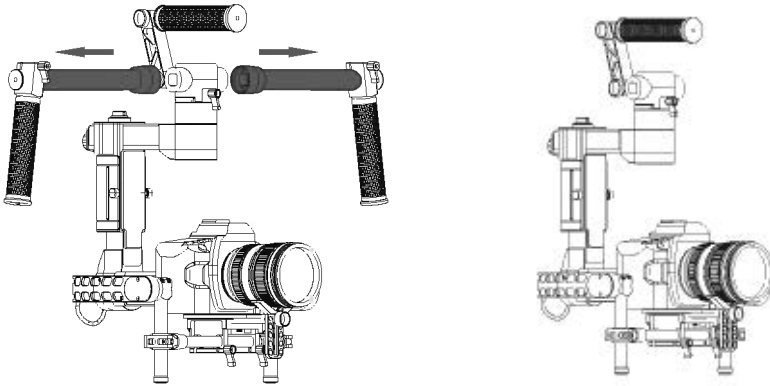
Configuring the Handle Bar

The customized handle bar of the Shining can be removed. If necessary, by following the steps below.

1. Loosen the two grip screws where the handle bar meets the gimbal, as shown.



2. Remove the grips from the handle bar.
3. You can remove one or both sides of the handle bar.
4. The resulting configuration is shown below.

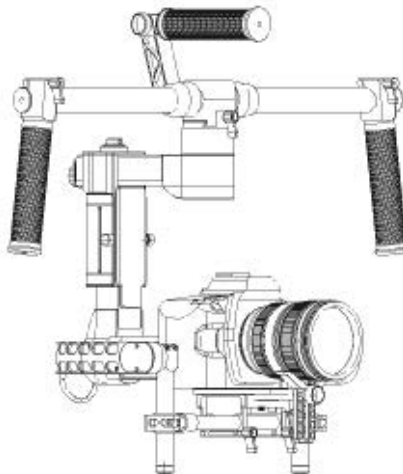


Balancing

To obtain the best performance from the Shining, proper balancing is a must. Accurate balance is critical for shots where the Shining will be subjected to extreme movements or acceleration (running, horseback riding, biking, car mounts, helicopters, etc.). proper balance will also offer a longer battery runtime. There are three axes that need to be accurately balanced prior to turning on the Shining and setting up the software.



- The camera needs to be fully configured, with all accessories, prior to installing and balancing the camera on the gimbal. If the camera has a lens cap, be sure to remove it prior to balancing.
- Be sure that the Shining's power is turned off while balancing the camera.



Step 1: Balancing the Vertical Tilt

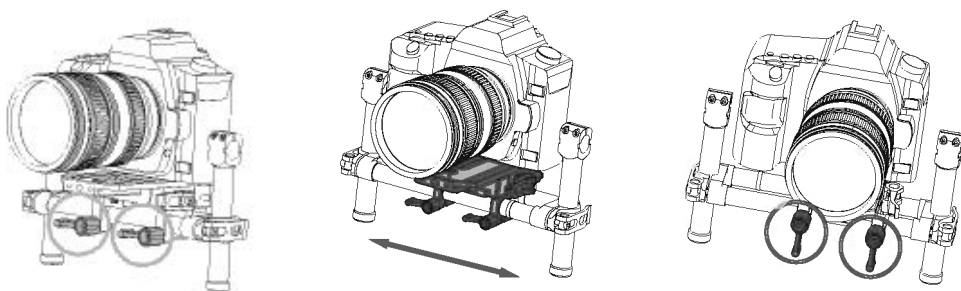
1. Rotate the Tilt Axis so that the camera lens is pointing upward and loosen the two vertical adjustment tabs.
2. Gently slide the camera mount crossbar forwards or backwards until the camera points upwards when released.
3. Tighten the tabs and manually rotate the assembly, simulating tilt, to ensure there is no binding in the tilt motor. When proper balance is achieved, you can rotate the camera to any tilt angle, and it will stay in that position.



Ensure the measurement marks match up on either side of the vertical bars. If they do not match up, the assembly could possibly be skewed higher or lower on one side, which would cause the tilt motor to bind.

Step 2: Balancing the Roll Axis

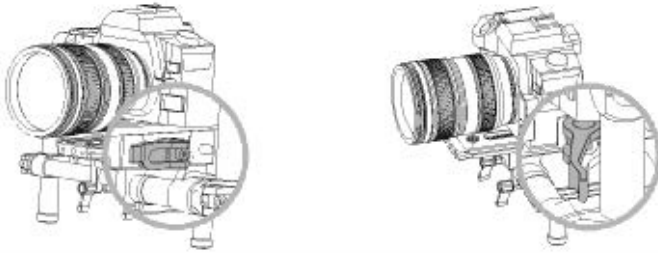
1. Loosen the two lock-knobs to allow the camera and mounting plate to slide left and right.
2. Slide the camera left or right until the Roll Axis remains level.
3. Tighten the two lock-knobs to lock the camera mounting plate in position.



When adjusting the roll balancing position of the camera, only loosen the two lock-knobs a few turns to allow the camera base to slide. Do not loosen the lock-knobs excessively.

Step 3: Balancing the Tilt Axis

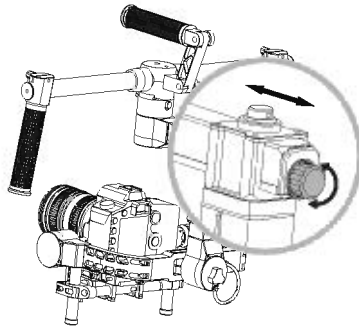
1. Loosen the camera base's side clamp to allow the camera and mounting plate to slide forwards and backwards.
2. Slide the camera forwards or backwards until the tilt axis remains level. Only very small adjustments are required to achieve the proper balance.
3. Tighten the side clamp to lock the camera and mounting plate in position. If properly balanced, the camera should be able to remain steady at any given tilt angle.



Step 4: Balancing the Pan Axis

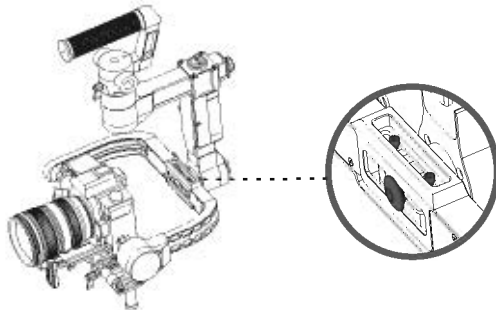
1. Loosen the clamp on the pan axis via 3mm allen wrench and turn the knob to slide the assembly. Identify if the Shining is front heavy or rear heavy.
2. While the Shining is resting on the tuning stand, try rotating the Shining along the pan axis by lifting one side of the handle bar. If the camera does not swing, the pan axis is properly balanced. Tighten the clamp after balancing is complete.

Note: it is normal that the rotary knob still can rotate after tightening the screw.



Advanced Roll Adjustment

If additional roll adjustment is needed in cases where the camera itself is too light in comparison to the tilt motor assembly, advanced roll adjustment can be achieved by loosening the indicated screws and pushing the assembly to the right or left.



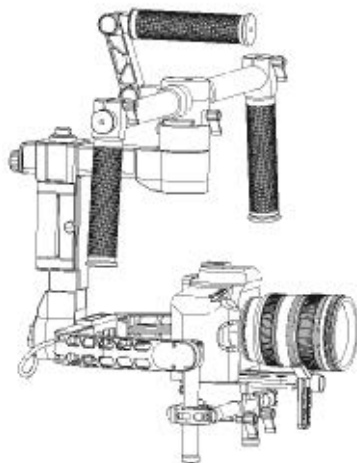
Operation Modes

The Shining can be used in two operation modes: Pan and Tilt Following Mode and Locking Mode. You can change to the Underslung Status, Upright Status and Briefcase Status at any mode.

Note: modes only can be switched by using Zhiyun wireless controller or Zhiyun APP(Zhiyun Assistant).

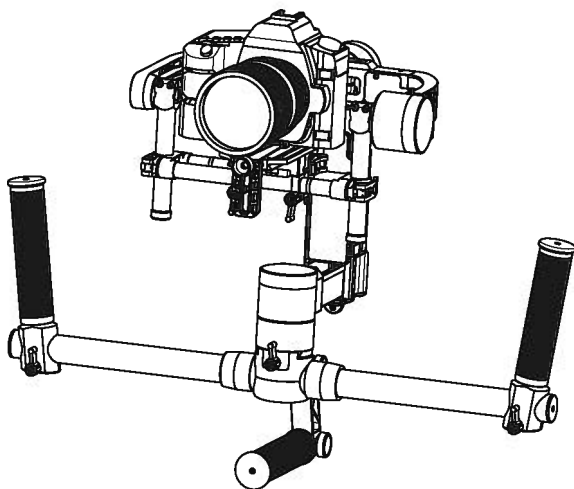
Underslung Status

The Underslung Status is the default working status.



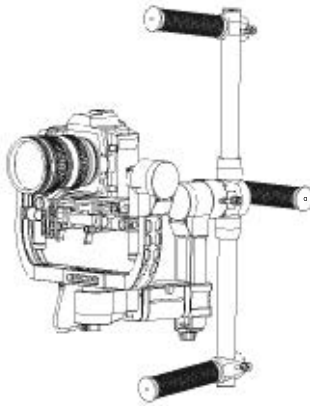
Upright Status

Flip the gimbal forward 180 degrees and it will automatically change to Upright Status. Alternatively, you can change the gimbal into upright status before turning it on. Upright Status is ideal for car mounts or other top down perspective camera positions, as it allows you to shoot higher and/or at eye level.



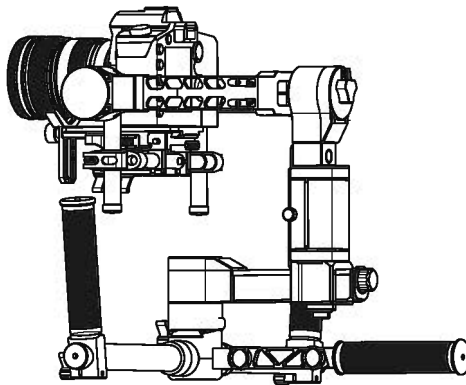
Briefcase Status

Briefcase Status allows you to hold the Shining in a narrow space, makes camera more flexible while shooting. To use Briefcase Status, tilt the gimbal 90° to the left or right on the roll axis.



Maintenance of Gimbal

1. Balance the handle bar and keep the gimbal flat. (When putting the gimbal upside down, please ensure the ground is flat and the top handle bar should be down, otherwise the gimbal may fall forward and overturn.)



2. The electronic gyroscope initialization or acceleration sensor calibration may be required in the following circumstances:

- 1). If there is deviation in the starting angles on roll or tilt.
- 2). If the gimbal has not been used for a long period of time.
- 3). If the temperature of the operating environment has changed considerably since the gimbal was last calibrated.

3. Refer to “Zhiyun Gimbal Tools” or Zhiyun Assistant to get the method of calibration. When the batteries are not in use, please have them fully charged and put in dedicated storage box and prevent them from water, moisture and high temperature.

Specifications

General	
Built-in Functions	<ul style="list-style-type: none"> • Two Operation Modes • 32-bit DSP processor • Zhiyun motor drive modules • Pan and Pitch Following Mode • Battery protection module • USB connection • Locking Mode • Built-in wireless module • External extended interface • Built-in independent IMU module
Dimension	520 mm(W) x 260 mm(D) x 420 mm(H)
Camera Tray Dimensions	Maximum depth from the center of gravity on camera base plate: 120 mm Maximum height measured from top of the camera base plate: 187 mm Maximum width: 169 mm
PC/MAC Assistant Software Requirements	Windows XP SP3 or above; Mac OS X 10.9 or above
Mobile Assistant Software Requirements	iOS 7.0 or above; Android 4.3 or above; Support for Bluetooth 4.0 or above
Micro USB Port	For firmware upgrade, parameter adjustment and advanced calibration. Please refer to the Shining User Manual and Software Instruction.

Technical parameters

	Minimum	Standard	Maximum	Note
Input voltage	-	4S	-	4x18650 batteries
Operating current	110mA	300mA	6A	
Extended interface output voltage	14.0V	14.8V	16.8V	
Extended interface output current			3A	
Static attitude tracking accuracy	$\pm 0.01^\circ$		$\pm 0.03^\circ$	
Dynamic attitude tracking accuracy	$\pm 0.05^\circ$		$\pm 0.2^\circ$	
Tilt axis mechanical movement range	-110°	-	$+185^\circ$	
Roll axis mechanical movement range	-65°		$+245^\circ$	
Pan axis mechanical movement range	-	360°	-	
Tilt axis controlled rotation range	-110°	-	$+185^\circ$	
Roll axis controlled rotation range	-25°	-	$+25^\circ$	

Pan axis controlled rotation range	-	360°	+25°	
Tilt axis following rate	1° /s	-	50° /s	
Pan axis following rate	1° /s	-	80° /s	
Load Weight capacity (reference value)	350g	-	3.6kg	
Battery run-time(25°C)	-	6h	-	2000mAh*4 (Gravity balanced)
Operating temperature	-10°C	25°C	45°C	
Gimbal weight	-	3.1kg	-	With batteries

Federal Communication Commission (FCC) Radiation Exposure Statement

When using the product, maintain a distance of 20cm from the body to ensure compliance with RF exposure requirements.

FCC statements:

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes 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.