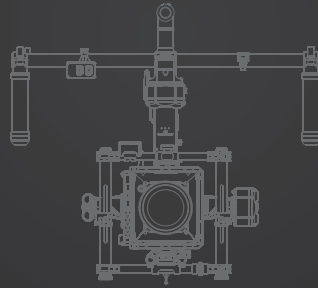


TILTAMAX
GRAVITY



USER MANUAL v2.1

GRAVITY

Gravity is a superior handheld gimbal system that we developed for professional users.

It's built with high strength aluminum magnesium alloy, titanium alloy and carbon fiber

Total weight is only 2.8kg (battery excluded).

Unique control for center gravity, can achieve precise 3-axis orthogonal full balance by turning the knob, which makes the whole system more stable and efficient.

Inner intelligent pointing system, guarantees super stability, no system crash and no drifting.

Designed for high end users, compatible for ARRI MINI, RED WEAPON, RED EPIC,

SONY F55/FS7/FS5 and CANON C300 MKII etc. Extremely versatile.

BATTERY USE CAUTION

Please charge batteries by Tilta authorized chargers.
Please keep the battery away from heat, never dispose battery into fire, explosion may occur.
Never hit the battery with force or sharpe items
Never take batteries apart.

DISCLAIMER OF LIABILITY EXEMPTION

1. Please make sure you have read this disclaimer before first use. You will be considered that you have accepted this disclaimer after start using this equipment.
2. In the course of using users will take full responsibility for the consequences that caused by inappropriate activities.
3. Never adjust and change the mechanical structure of this product. Tilta will not be responsible for any consequences that caused by behavior above.
4. If you have other inquiries, please feel free to contact our customer service.

SPECIFICATIONS

3-AXIS CRADLE HEAD(MODEL GB-T15)

WEIGHT(BATTERY EXCLUDED)	2.8kg
LOAD WEIGT	MAX 15kg
ANGULAR VIBRATION RANGE	±0.02
CONTROLLED ROTATION RANGE	TILT-90°TO+30° ROLL-90°TO+90° PAN±360°
MAXIMUM CONTROL SPEED	180°/s
WORKING TEMPERATURE	-19°C TO 50°C

MOTION CONTROLLER(MODEL TG-01)

WOKING FREQUENCY	2.400GHZ-2.483GHZ
SIGNAL EFFECTIVE DISTANCE	800m(OPEN SPACE)
POWER INPUT	DC1.1
WORKING TEMPERATURE	-19°C TO 50°C
WORKING VOLTAGE	14.8v

BATTERY(MODEL DC-220)

CAPACITY	2200mAh
VOLTAGE	14.8v
BATTERY TYPE	LiPo 6S
WORK ENVIROMENT	-19°C TO 50°C

CHARGER (MODEL CD-T168)

INPUT VOLTAGE	220v-360v
OUTPUT VOLTAGE	16.8v
OUTPUT CURRENT	1.5A 100W

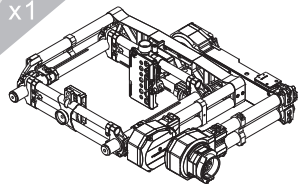
TILTA



TILTAMAX

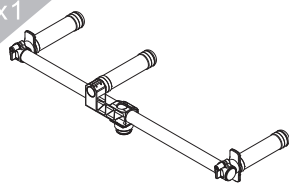
CHECK LIST

x1



3-AXIS GIMBAL

x1



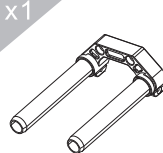
HANDHELD BAR

x1



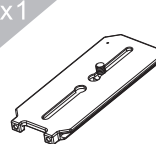
STAND

x1



15mm * 25mm ROD+
ADAPTOR

x1



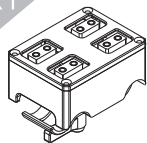
BASEPLATE

x1



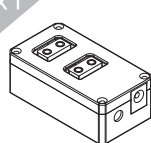
BATTERY

x1



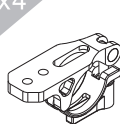
POWER SUPPLY BOX
(B-TAPx4)

x1



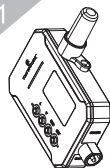
POWER DISTRIBUTION
MODULE (B-TAPx2)

x4



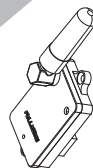
CROSS-BAR
ADAPTOR

x1



MOTION EJECTOR

x1



MOTION RECEIVER

x1



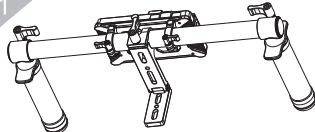
MOTION EJECTOR
ADAPTOR

x1



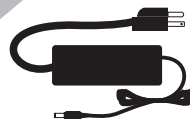
2.5/3/4mm ALLEN KEY

x1



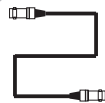
HANDHELD MOTION CONTROL MODULE

x1



CHARGER

x2



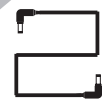
SDI SIGNAL CABLE
(50cm)

x1



B-TAP TO DC CABLE
(75cm)

x1



DC TO DC CABLE
(50cm)

x1



MOTION POWER
CABLE

TILTA



TILTAMAX

GETTING TO KNOW YOUR GRAVITY

MOTORS

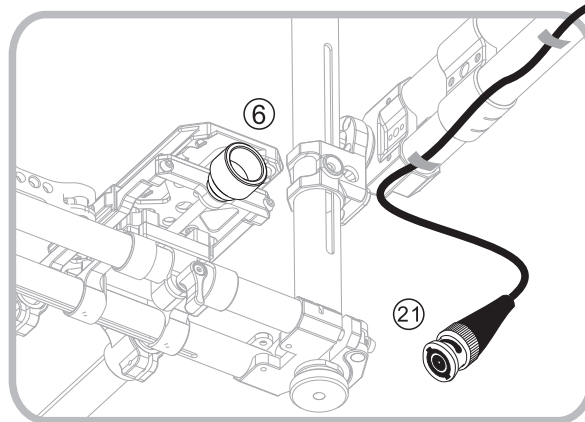
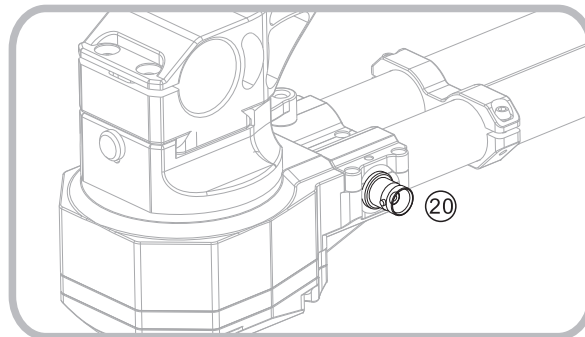
1. Tilt axis motor
2. Roll axis motor
3. Pan axis motor

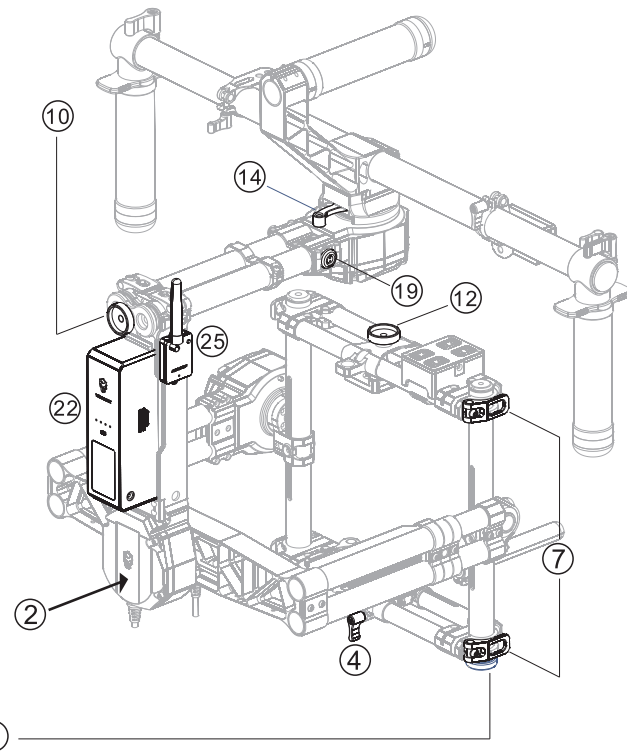
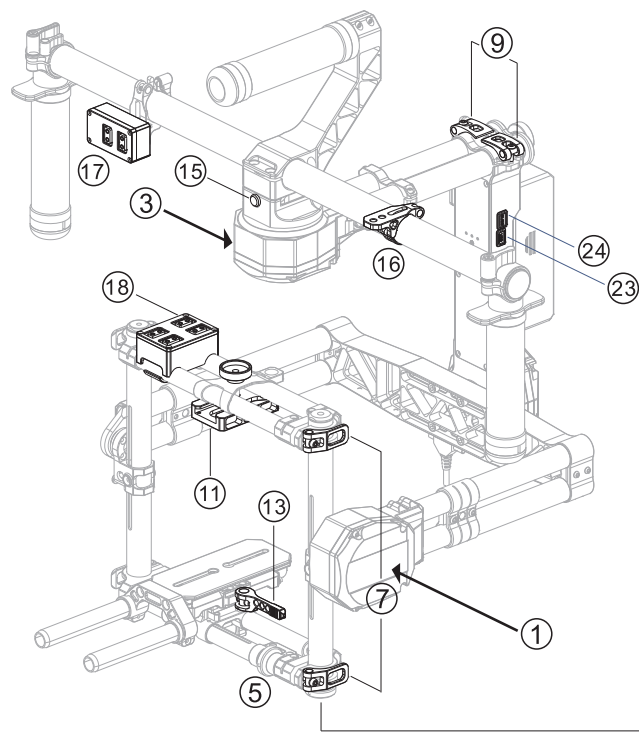
CENTER OF GRAVITY AND FIXING

4. Roll axis center of gravity releasing handle
5. Roll axis center of gravity adjustment knob
6. Front and back center of gravity adjustment knob
7. Top and base fixing bridge releasing handle x4
8. Top and base fixing bridge center of gravity adjustment knob
9. Pan axis center of gravity releasing handle
10. Pan axis center of gravity adjustment knob
11. Top fixing plate
12. Top fixing plate fastening knob
13. Base sliding plate fastening handle
14. Handheld cross-bar fastening handle
15. Handheld cross-bar safety seal
16. Cross-bar adaptor

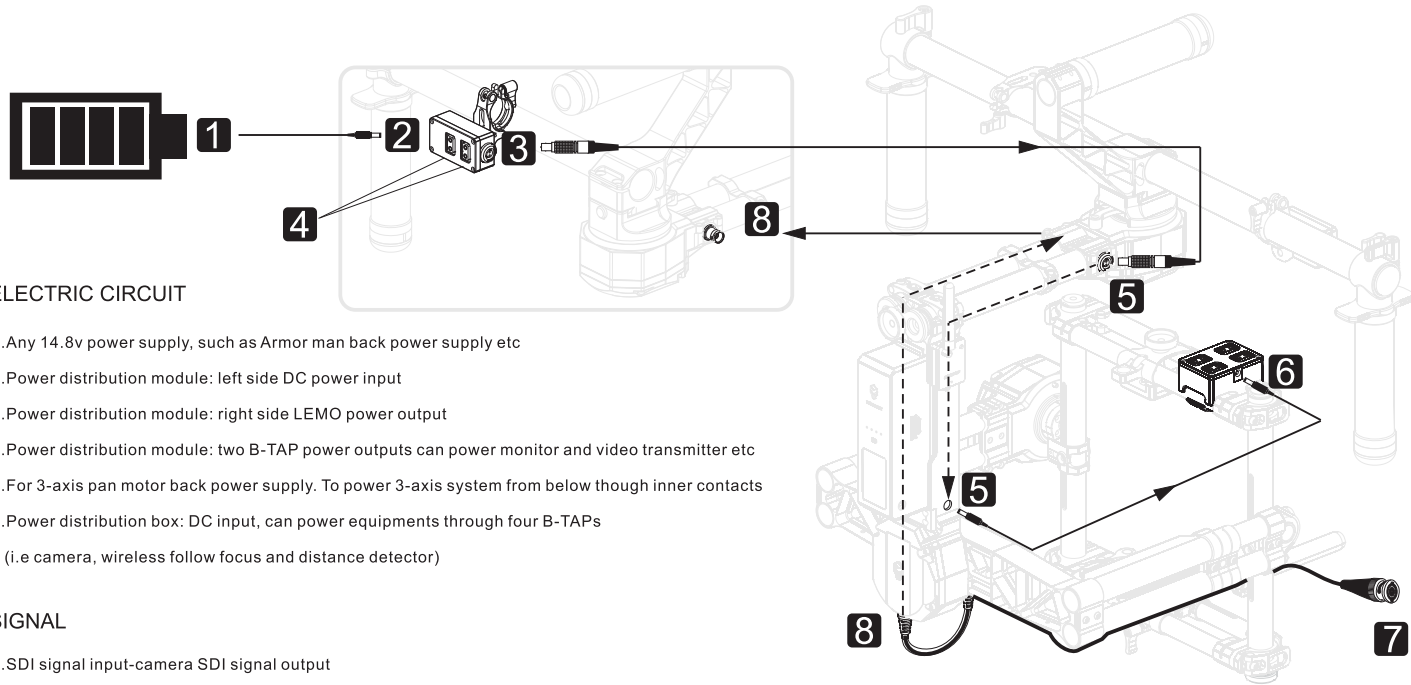
SIGNAL AND ELECTRIC CIRCUIT

17. Power distribution module (B-tap x 2)
18. Power supply module (B-tap x 4)
19. External power input
20. SDI signal output
21. SDI signal input (for camera signal output)
22. Battery
23. USB interface (for hardware update)
24. SUSB interface (for external remote control receiver)
25. Motion control receiver module





GRAVITY ELECTRIC CIRCUIT AND SIGNAL CONNECTION DIAGRAM



ELECTRIC CIRCUIT

1. Any 14.8v power supply, such as Armor man back power supply etc
2. Power distribution module: left side DC power input
3. Power distribution module: right side LEMO power output
4. Power distribution module: two B-TAP power outputs can power monitor and video transmitter etc
5. For 3-axis pan motor back power supply. To power 3-axis system from below through inner contacts
6. Power distribution box: DC input, can power equipments through four B-TAPS (i.e camera, wireless follow focus and distance detector)

SIGNAL

7. SDI signal input-camera SDI signal output
8. To pan axis back output by inner contacts (signal will be diverted surround the handheld cross-bar)

GRAVITY External circuit ————

GRAVITY Inner circuit - - - - -

The electric circuit design concept of Gravity is originated from a very common problem that is we always have far too many cables around the camera.

1. Complicated cables will affect the movement of the motors.
2. Too many external equipment will give more weight on the cradle head.

GRAVITY'S SOLUTION IS

The signal and electric circuit will be led from the base to the top through the 3-axis gimbal system, so you will be able to operate the distribution of signal and electric near the 3-axis cross-bar handle.

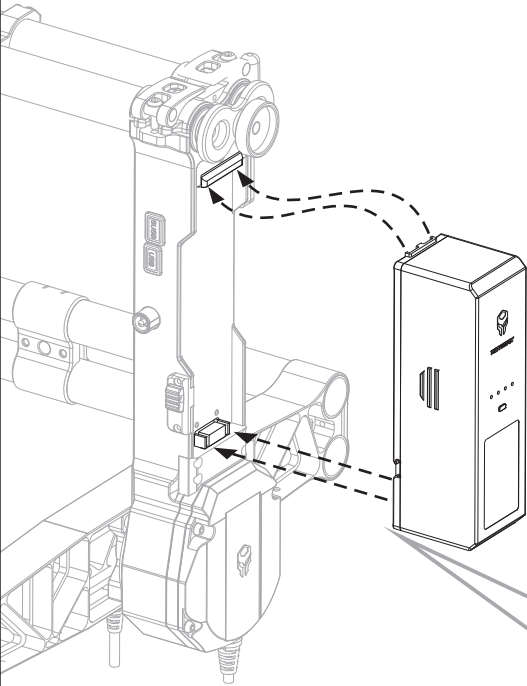
GRAVITY

3-AXIS STABILIZED HANDHELD GIMBAL SYSTEM

————— TO GET STARTED —————

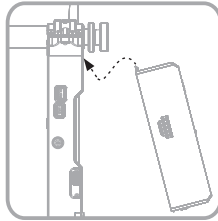
HOW TO USE YOUR GRAVITY

INSTALLING BATTERY



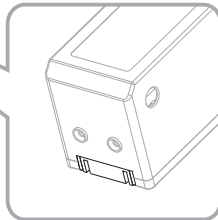
1

Tilt the top of the battery and slide it into the socket

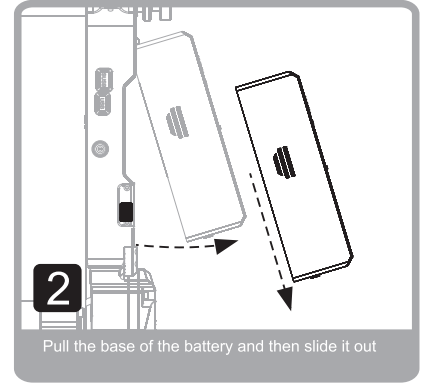
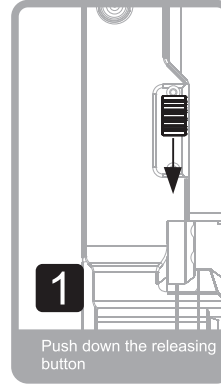


2

Push the base of the battery into the socket to finish installing



TAKING OFF THE BATTERY



⚠ BATTERY USE CAUTION

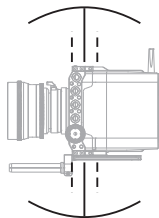
1. Please charge batteries by Tilta authorized chargers.
2. Please keep the battery away from heat, never dispose battery into fire, explosion may occur.
3. Never hit the battery with force or sharp items.
4. Never try to take the battery apart.
5. Please make sure the battery is correctly installed. Incorrectly installed battery will cause short out or no power.

HOW TO INSTALL YOUR CAMERA

1. Make sure the lens and other equipments are correctly installed on the camera.
2. Install the follow focus or other equipments on the 15mm rods. Make sure camera, lens and other equipments are fully fastened to avoid movements during shooting.

FIX THE CAMERA INTO THE BASEPLATE

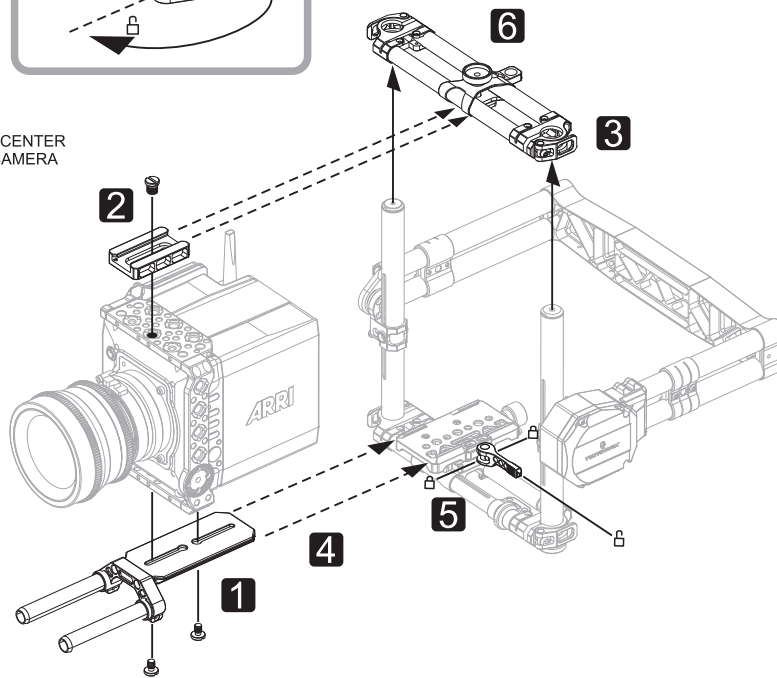
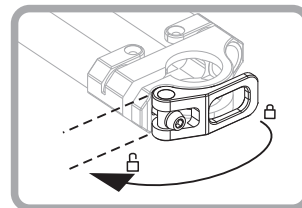
1. Select the correct 1/4 and 3/8 screws
2. Make sure where the gravity center of the camera is
3. Take out the baseplate
4. Aim the gravity center of the camera with the center of the baseplate and then use screws fasten



GRAVITY CENTER
OF THE CAMERA

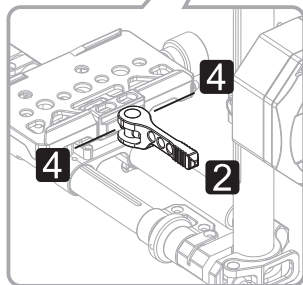
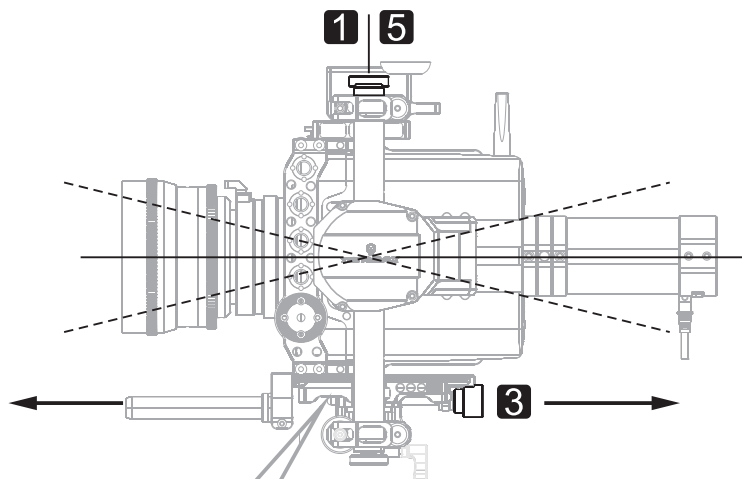
INSTALL THE CAMERA ONTO THE CRADLE HEAD

2. Install the top plate (the position various depending on different types of cameras)
3. Loosen the cross-bar on the cradle head
4. Slide the camera into the dovetail plate (aim the cradle head baseplate with the gravity center of the camera)
5. Fasten the front and back locker
6. Fasten the top cross-bar and the spinning knob on the top (make sure you do this step properly to avoid movements during shooting)



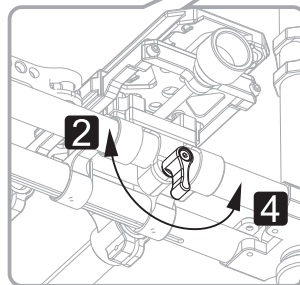
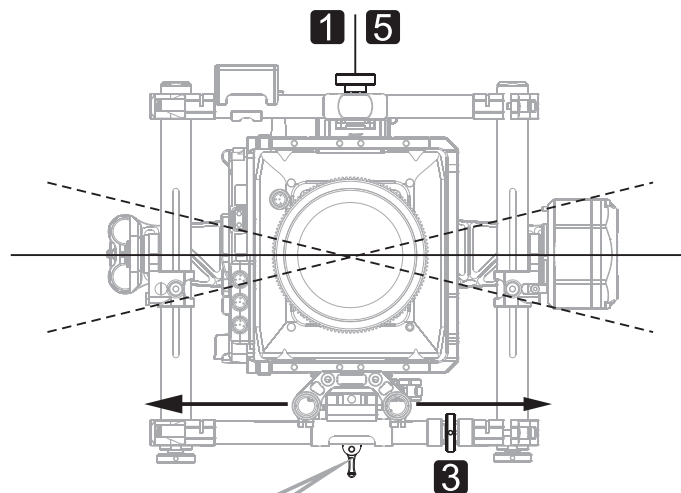
TO USE YOUR GRAVITY

GRAVITY CENTER FRONT AND BACK ADJUSTMENTS FOR TILT AXIS



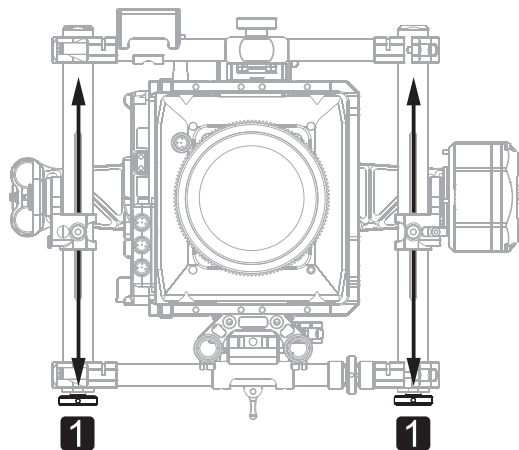
- 1** Release the knob on the top plate
- 2** Release the locking handle on the baseplate
- 3** Twist the adjustment knob until the camera is balanced when you release it
- 4** Fasten the locking handle on the baseplate
- 5** Fasten the knob on the top plate

LEVEL ADJUSTMENT FOR ROLL AXIS



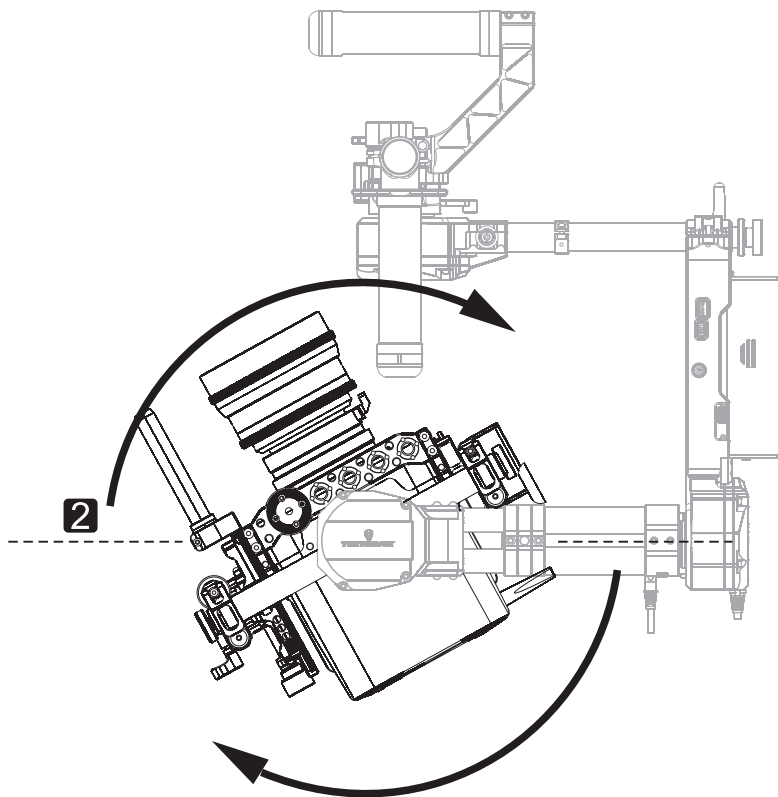
- 1** Release the knob on the top plate
- 2** Loosen the adjustment screw on the cradle head
- 3** Twist the adjustment knob until the camera is balanced when you release it
- 4** Fasten the locking screw
- 5** Fasten the locking knob on the top plate

VERTICAL CENTER OF GRAVITY ADJUSTMENT FOR TILT AXIS



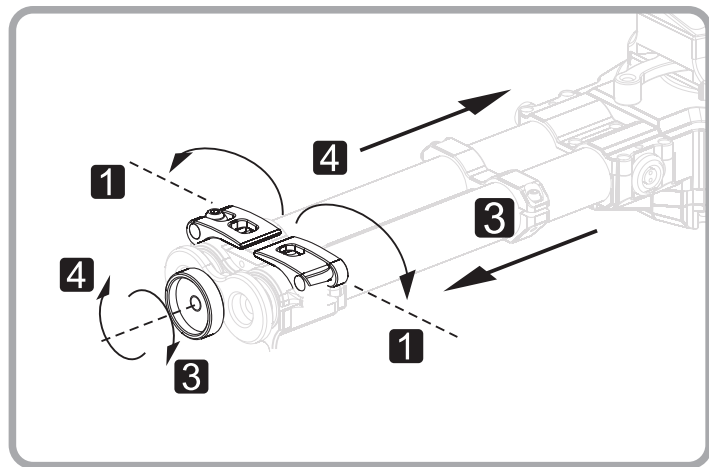
- 1** Shake the gravity adjustment knobs on the left and right until the camera is balanced when you release it
NOTE: Make sure the marks are set the same on the left and right, if you want to adjust the vertical center of gravity dramatically, you may need to re-adjust the front and back gravity center of the tilt axis.

- 2** Tilt the camera to make the lens facing upwards and stay in this position
NOTE: Please be extra caution from tilt longer lenses.

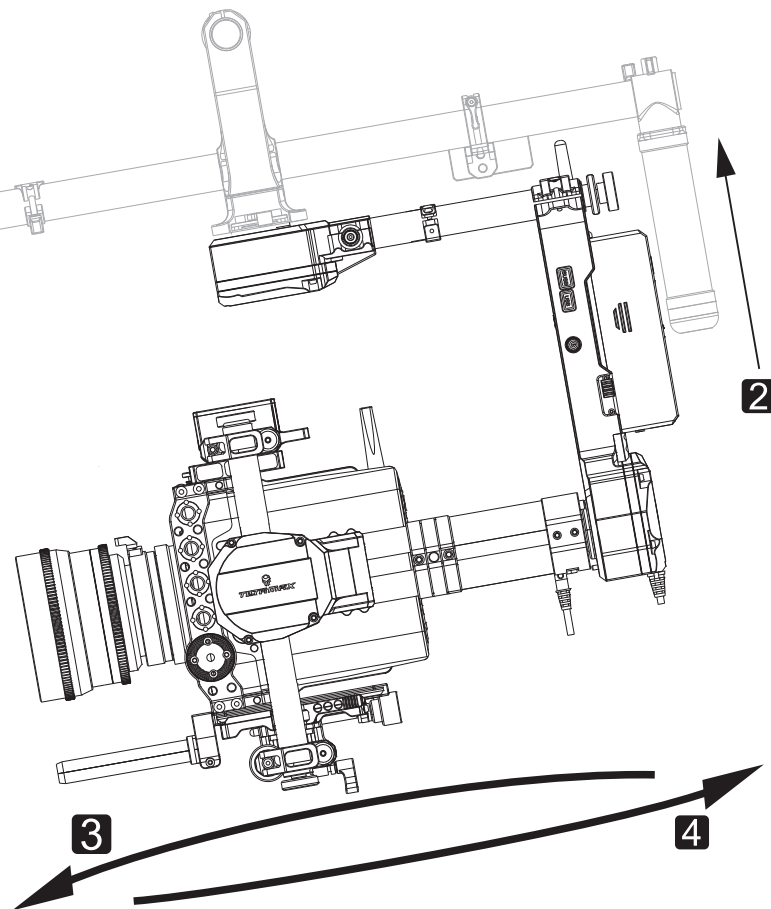


HOW TO USE YOUR GRAVITY

CENTER OF GRAVITY ADJUSTMENT FOR PAN AXIS

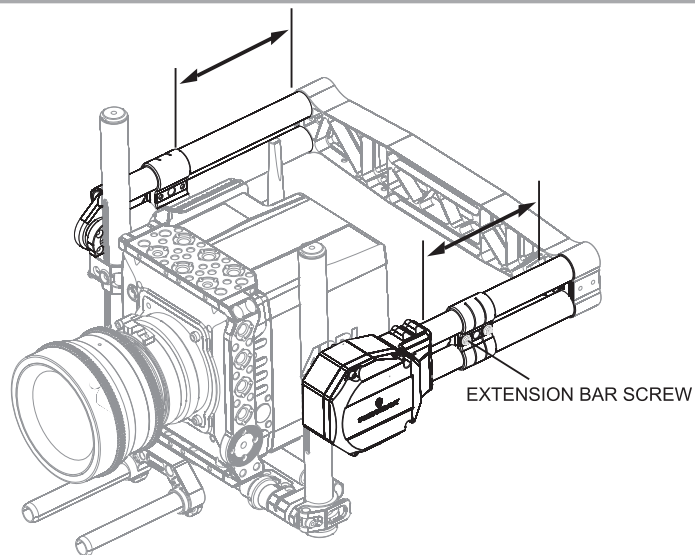


- 1** 1. Release the left and right safety locker
- 2** 2. Lift one side of the handle
- 3** 3. Turn the knob to the right if the camera faces down. By turning the knob, the center of gravity will go backwards (please see the diagram on the right)
- 4** 4. Turn the knob to the left if the camera faces up. Fasten the left and right safety locking handle on the pan axis when the camera is balanced.



SUPREME EXTENSION ADJUSTMENT

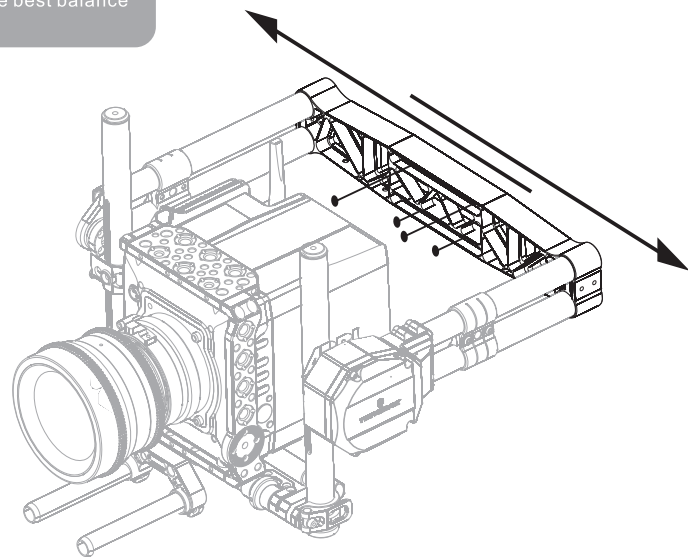
When you are shooting with bigger and heavier cameras, you may adjust the camera to the best balance by supreme extension adjustment.



1

EXTENSION FUNCTION

1. It can help you to balance longer cameras
2. Leave the camera on a flat surface and loosen the screws on the extension bar, extend the bar to the suitable length then fasten (you will need to adjust the balance of all three axis)



2

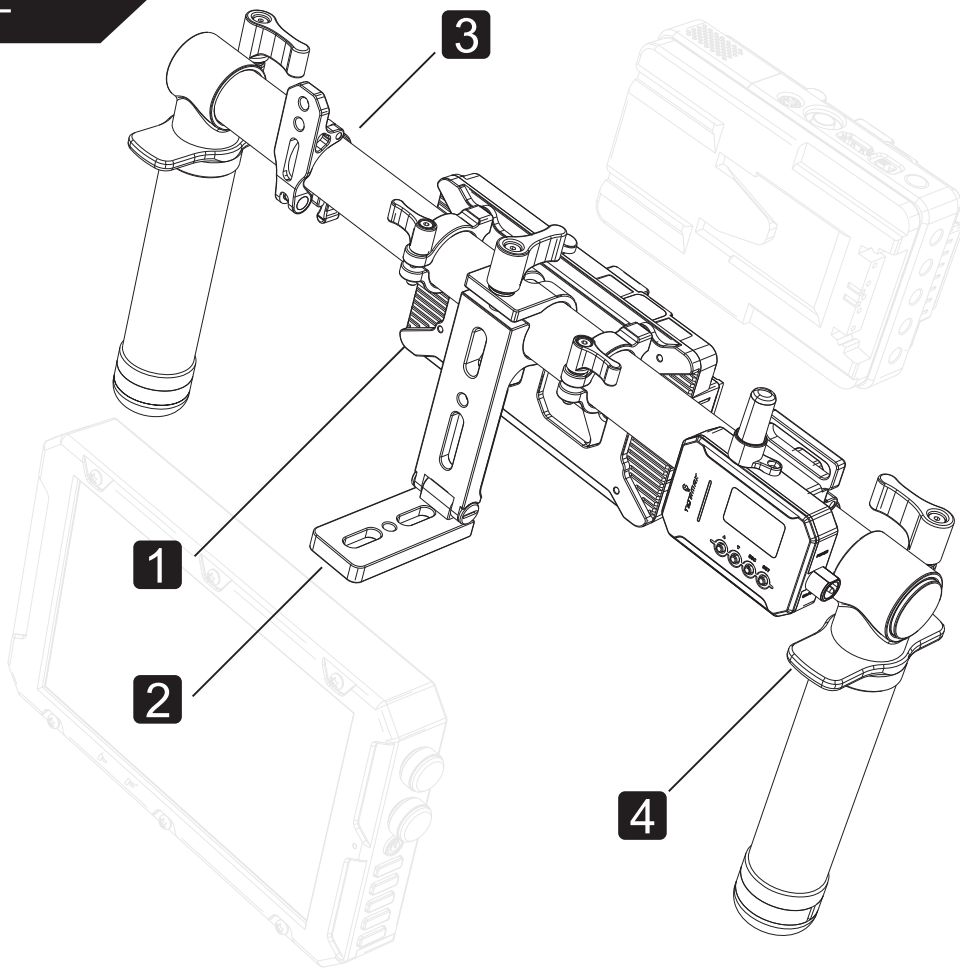
EXTENSION FUNCTION

1. It can help you to balance wider cameras
2. Leave the camera on a flat surface and loosen the screws on the extension bar, extend the bar to the suitable length then fasten (you will need to adjust the balance of all three axis)

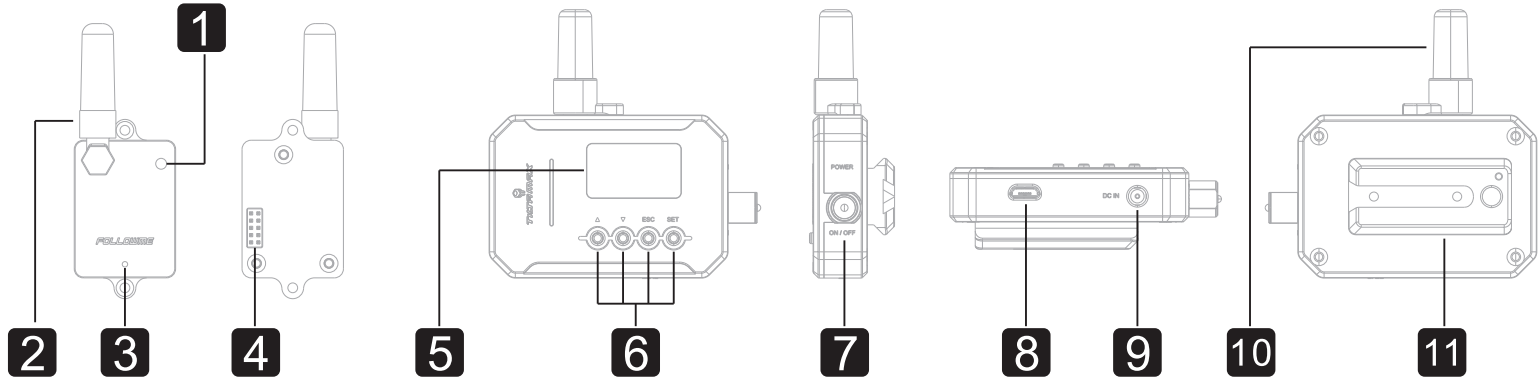
GRAVITY MOTION CONTROL

MOTION CONTROL HANDGRIPS

1. Battery plate- can adapt V lock or Anton Bauer batteries. It can work with TILTAMAX wireless video transmitter external battery. You can also purchase optional IDX plate or Anton Bauer plate.
2. Monitor holder- to install wireless video transmitter monitor.
3. Cross-bar adaptor- to install motion control ejector connector.
4. 360 degrees spinning handles, comfortable for longer shooting time



ALL YOU NEED TO KNOW ABOUT THE GRAVITY MOTION CONTROL



Follow me is the wireless motion control device for GRAVITY.

You will be able to follow up by one person and control the lens by the other.

This device will help the operator to follow up and shoot at the same time and makes the gimbal system more powerful.

Camera man can simulate the camera movement by turning the handgrips.

It is almost like operating the real camera.

It is more straight forward and easy to use than traditional controller.

You can also install the handgrips on a tripod to work with high resolution wireless video transmitter.

You only need to focus on the monitor, it's more suitable for shooting.

- | | | |
|--------------------------|----------------------------------|------------------------|
| 1. Receiver on/off | 5. Motion control display screen | 9. Power interface |
| 2. Receiver antenna | 6. Menu button | 10. Motion antenna |
| 3. Receiver signal light | 7. Ejecter on/off | 11. 1/4 handle adaptor |
| 4. Receiver interface | 8. USB interface | |

The status for maximum signal distance and working time were collected in an experimental environment. It's for reference only.

GRAVITY

3-AXIS STABILIZED HANDHELD GIMBAL SYSTEM

————— TO START THE MOTION CONTROL EXPERIENCE —————

TO USE YOUR GRAVITY MOTION CONTROL

NOTE: Please make sure the tilt direction of the motion control is the same as the lens in order to achieve better control.

- 1** The motion control includes an ejector and a receiver. It is a remote control module. It has a standard NATO adaptor, you can handheld it or install it on a tripod depending on your shooting preference.
- 2** To install your motion control (make sure the ejector is correctly installed on the leveled surface for accurate operation)
- 3** Make sure your 3-axis gimbal system is powered off when you plug in the motion control receiver.
- 4** Switch on the gimbal system, enter receiver's main menu, select channel option, then match the handgrips
- 5** Press the on/off on the receiver and hold it for 3 seconds until the signal light is on.
- 6** Receiver will confirm the matching is successful, press the confirm button and hold it for 3 seconds until it changes to 2TX. Then you may start shooting.

GRAVITY MOTION CONTROL MENU

CONNECTED DEVICE

SIGNAL

●	tilta689	2
R:	60	▣
P:	30	▣
Y:	-80	▣

WORKING STATUS

REAL-TIME STATUS FOR 3-AXIS

●	Menu	2
RcMode		
TraceMode		
GcuMode		
RcConfig		
Channel		
GyroCali		
AccCali		
InfoView		

||||● RcMode 2
Mode: Angle

||||● TraceMod 2
Roll : ENABLE
Pitch: ENABLE
Yaw : ENABLE

||||● GcuMode 2
Mode : 0
PitchYaw : Tace

||||● RcConfig 2
R-d: 60 R-S: 60
P-d: 30 P-S: 60
Y-d: -80 Y-S: 60

||||● Channel 2
Rf Chanle : 6
Enter To Bind

||||● GyroCali 2
R: 53 60 Begin
P: 10 65 Exit
Y: 10 37

||||● AccCali 2
R: 667 Begin
P: 360 Exit
Y: 1303

||||● RcMode 2
Mode: Spd
Restart Effect

||||● TraceMod 2
Roll : DISABLE
Pitch: ENABLE
Yaw : ENABLE

||||● GcuMode 2
Mode : 1
Yaw : Tace

||||● RcConfig 2
Pitch Dead:30

||||● RcConfig 2
30%

||||● GyroCali 2
⚠ Are you Sure?
Yes No

||||● AccCali 2
⚠ Are you Sure?
Yes No

||||● GcuMode 2
Mode : 2
3Aixs:Gimble

||||● RcConfig 2
Roll Scale:60

||||● GyroCali 2
Cali Will Begin
3 Second

||||● AccCali 2
Cali Will Begin
9 Second

||||● GyroCali 2
30%

||||● AccCali 2
55%

TILTA



TILTAMAX

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