

TORNADO PROACTION

USER MANUAL

INTRODUCTION

The TORNADO ProAction™ is a ground imaging system designed to extend your Panasonic® camera GH4 and SONY® a7 with real-time imaging transmission. The system includes the ProAction™ ground handle and GB603 gimbal. The ProAction™ features pitch controller, allowing for precise camera angle control. The GB603 gimbal, 3-Axis self-stabilizing gimbal, enables you to capture smooth and fluent photographs and video footage.

SPECIFICATIONS

ProAction™

Dimensions: 14.17*10.04*14.57in (360*255*370mm)

Weight(without battery): 52.91oz (1.5kg)

Battery Weight: 7.72oz (219g)

Included Battery: 4S/14.4V 0.3C 2600mAh 37.44Wh Lithium-Ion Battery

Runtime: 2.5 Hours

Working Voltage: 12.0~16.8V

Working Current: 0.68~1.0A

Compatible Device: GB603

GB603

Dimension: 8.27x8.66x9.25in (210x220x235mm)

Weight (Without camera): 31.4 oz(890g)

Weight(with camera): 56.5 oz (1600g)

Axes: 3

Working Voltage: 12.0~25.2V

Working Current: 0.38~1.0A

Control Angle Accuracy: $\pm 0.02^\circ$

Maximum Control Range:

Pitch: $-30^\circ \sim 100^\circ$

Roll: $-30^\circ \sim 30^\circ$

Yaw: $0^\circ \sim 360^\circ$

Mechanical Range:

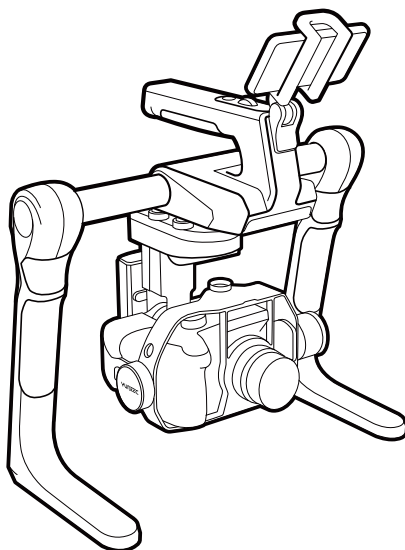
Pitch: $-120^\circ \sim 75^\circ$

Roll: $-40^\circ \sim 40^\circ$

Yaw: $0^\circ \sim 360^\circ$

Maximum Pitch/Yaw Control Speed: $30^\circ /s$

Compatible Device: GH4, SONY® a7



NOTICES AND WARNINGS

IMPORTANT NOTE: All safety precautions and warnings, instructions, warranties and other collateral information is subject to change at the sole discretion of Yuneec. For the most up-to-date information please visit the corresponding product page at www.Yuneec.com or contact the nearest Yuneec office or authorized distributor.

The following special language terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

NOTICE: Procedures, which if not properly followed, create a possibility of property damage and/or little to no possibility of injury.

CAUTION: Procedures, which if not properly followed, create the probability of property damage and/or a possibility of serious injury.

WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage and/or serious injury or create a high probability of superficial injury.

WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, property and/or cause serious injury.

WARNING: This is a sophisticated consumer product. It must be operated with caution and common sense, and requires some basic mechanical ability. Failure to operate this product in a safe and responsible manner could result in damage to the product, property and/or cause serious injury. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Yuneec. The instruction manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings prior to assembly, setup and/or use in order to operate the product correctly and avoid damage or serious injury.

GENERAL SAFETY PRECAUTIONS AND WARNINGS

WARNING: Failure to use this product in the intended manner as described in instruction manual can result in damage to the product, property and/or cause serious injury. This product is not a toy!

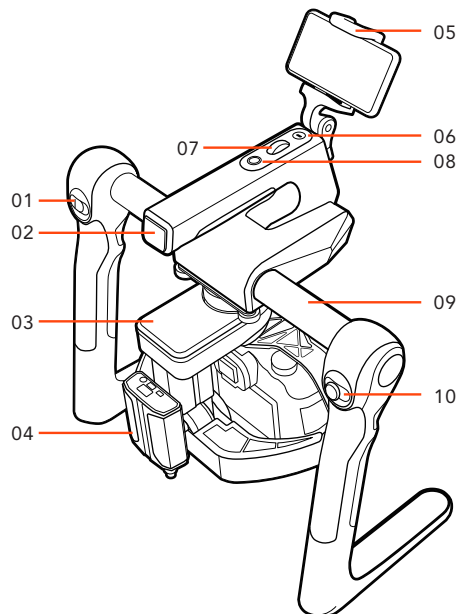
WARNING: As the user of this product you are solely and wholly responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

Always allow your TORNADO ProAction™ to initialize properly on a flat and stable surface prior to switching it on.

Always operate your TORNADO ProAction™ in a respectful and safe manner.

OVERVIEW

- 01 Power/Mode Selection Switch
- 02 Battery Indicator
- 03 GB603 Gimbal
- 04 LK-58
- 05 Phone Holder
- 06 Control Status Indicator
- 07 Pitch Control Wheel
- 08 Function Switch Button
- 09 ProAction™ Hand Holder
- 10 Gimbal Control Stick



BATTERY WARNINGS AND USAGE GUIDELINES

WARNING: Lithium batteries are significantly more volatile than alkaline, NiCd or NiMH batteries. All instructions and warnings must be followed exactly to prevent property damage and/or serious injury as the mishandling of Lithium batteries can result in fire. By handling, charging or using the included Li-ion batteries battery you assume all risks associated with Lithium batteries. If you do not agree with these conditions please return the complete product in new, unused condition to the place of purchase immediately. You must always charge the Lithium battery in a safe, well-ventilated area away from flammable materials.

Do not disassemble or modify the battery pack. The battery pack is equipped with built-in safety/protection features. Should these features be disabled, the battery pack can leak, overheat, emit smoke, burst and/or ignite.

Do not discard the battery pack into fire or heat it. Otherwise, its insulation can melt down, its gas release vent or safety features will be damaged and/or its electrolyte can ignite, possibly leading to leakage, overheating, smoke emission, bursting and/or ignition on it.

Do not immerse the battery pack in water or seawater and do not allow it to get wet. Otherwise, the protective features in it can be damaged, it can be charged with extremely high current and voltage, abnormal chemical reactions may occur in it, possibly leading to leakage, smoke emission, bursting and/or ignition.

Do not pierce the battery pack with a nail or other sharp objects, strike it with a hammer, or step on it. Otherwise, the battery pack will become damaged and deformed, internal short-circuiting can occur, possibly leading to acid leakage, overheating, smoke emission, bursting and/or ignition.

Do not strike or throw the battery pack. The impact might cause leakage, overheating, smoke emission, bursting and/or ignition. Also, if the protective feature in it becomes damaged, it could become charged with an extremely high current and voltage, abnormal chemical reactions can occur, which can lead to acid leakage, overheating smoke emission, bursting and/or ignition.

When charging Battery Pack, please put battery in a fire proof container. Please don't leave battery pack and charger on the wood material or carpet and unattended.

Use specific Lithium charger only. Do not use a NiMH or NiCd charger- Failure to do so may cause fire, which may result in personal injury and property damage.

Always monitor charging process to assure batteries are being charged properly. Failure to do so may result in fire.

If at any time the user witnesses a battery starting to balloon, swell up, smoke or hot, discontinue charging process immediately, disconnect the battery and observe it in a safe place for approximately 15 minutes. This may cause the battery to leak, and the reaction with air may cause the chemicals to ignite, resulting in fire.

Wire lead shorts can cause fire! If the wire is accidentally short, the battery must be placed in a safe area for observation for approximately 15 minutes. Additionally, if a short occurs and contact is made with metal, severe injuries may occur due to the conductivity of electric current.

Never store or charge battery pack inside a car in extreme temperatures, since extreme temperature could ignite fire.

INSTALLING THE BATTERY

STEP 1) Slide the battery cover / door from the ProAction™ with slight force.

STEP 2) Install the battery in the battery compartment with the side of balancing head facing upwards. And then connect the Power Connector to the gimbal.

STEP 3) Once you've installed the battery, put the antenna inside the compartment. Slide the battery cover / door downward with slight force and ensure you hear and feel a noticeable 'click' indicating the battery cover / door has been closed securely.

CHARGING THE BATTERY

Connect the Power Connector and Balancing Connector to the charger.

STEP 1) BATT/PROGRAM Select.

Press INC and DEC to go through all the programs and press START/ENTER to enter Li-Io BATT Program.

STEP 2) Mode Select

Press INC and DEC to go through all the modes and press START/ENTER to enter Li-Io Balance Charge Mode.

STEP 3) Battery Setting

Press START/ENTER, the current value will start to blink, then press INC or DEC to increase or decrease the value. After confirming your setting, press START/ENTER. For the Steady-Grip battery, it is recommended to set 1.8A (no more than 2A).

The battery cells number will start blinking, press INC and DEC to increase or decrease the value, and then press START/ENTER to confirm your setting. For the ProAction™, 4S should be selected.

STEP 4) Program Start

Press and hold START/ENTER for 3 seconds to start the program. The charger is detecting the battery cell and "BATTERY CHECK" will be on the screen

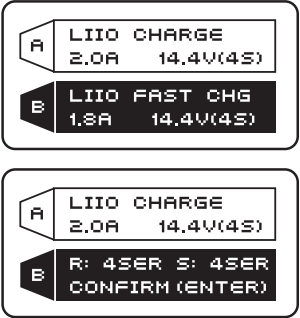
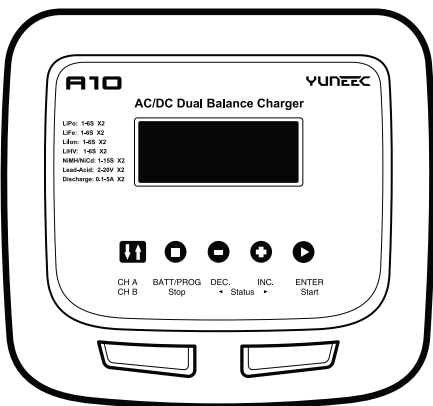
(the third block) R shows the number of cells detected by the charger and S is the number of cells set by you at the previous screen. If the numbers are not identical, press STOP to go back to the previous screen to recheck the number of cells of the battery pack before proceeding the next step.

(the fourth block) R shows the number of cells detected by the charger and S is the number of cells set by you at the previous screen. If the numbers are identical, press START/ENTER to start charging. It will take approximately 2 hours to charge a fully discharged (not over-discharged) battery. When the charging process finishes, "END: FINISH" will be on the screen.

STEP 5) Charging Status Monitor

During charge process, real-time status will be shown as the left screen.

During the charging process, press STOP to stop the charging process.



WARNINGS

During the charging process, a specific quantity of electrical energy is charged into the battery. The maximum permissible charge current varies depending on the type and performance of the battery. The relevant information is supplied from the battery manufacturer.

Only batteries that are stated to be capable of quick-charge are allowed to be charged at rates higher than the standard charging current.

Always refer to the user manual of the battery about the charging methods, recommended charging current and charging time. Especially, the lithium battery should be charged according to the charging instruction provided by the manufacturer strictly. Special attention should be paid to the connection of lithium battery.

Do not attempt to disassemble the battery pack.

Do not use the battery when the battery is humid.

Please pay attention that lithium battery packs can be wired both in parallel and in series.

In the parallel connection: With the total voltage staying the same, the battery's capacity is calculated by multiplying single battery capacity by the number of cells. The voltage imbalance may cause fire or explosion. The lithium battery is recommended to charge in series.

ATTACHING THE GB603 TO THE PROACTION™

STEP 1) Securely attach the GB603 to the ProAction™ with Gimbal Fastening Screws, then withdraw the Gimbal Cord from the left side, while ensuring the "Front" label on the Yaw Motor / Top Motor is facing toward the FRONT of the ProAction™.

Step 2) Insert the Gimbal Cord into the center carrying handle port with the side of pins facing upward.

Step 3) Install the Fastening Accessory Socket to the Camera (Take Panasonic camera GH4 as examples).

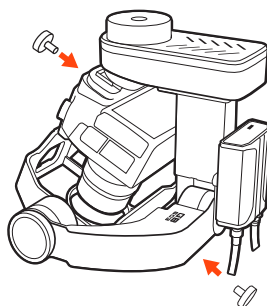
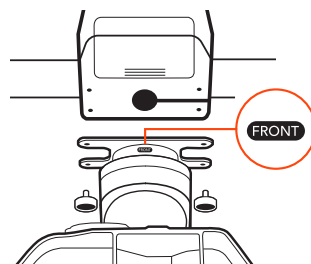
Step 4) Flip the camera's LCD screen for better view-taking, fold out and then fold in.

Step 5) Push the camera forward into Camera Frame.

NOTICE: Make sure the Camera Battery and SD card have been installed!

Step 6) Rotate the upper and lower Camera Fastening Screws to secure position as illustrated.

NOTICE: If the camera has WiFi connectivity with a mobile device, you may mount the mobile device to the special mount located at the front of the ProAction™ to use it as a view finder. For detailed operations, please refer to your camera manufacturer's instruction manual. Skip this procedure if your camera or phone doesn't have this function



FOR THE SONY® α7 CAMERA

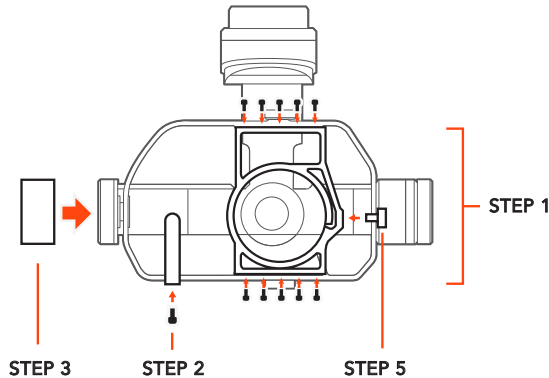
STEP 1) Replace the GH4 camera lens mount frame with SONY® α7 lens mount frame, and secure the 10 screws on the top and bottom of the frame to fix the frame.

STEP 2) Install the infrared ray mount device to the left side of the SONY® α7 lens mount frame, secure the screw on the bottom of the device, and connect the white connector to the IR port

STEP 3) Mount the SONY® α7CG balancer on the GB603 as illustrated.

STEP 4) Push the camera forward into Camera Frame.

STEP 5) Rotate the Camera Fastening Screw to secure position as illustrated.

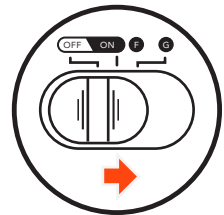


POWERING ON/OFF

Place the ProAction™ on a flat and stable surface, then switch the Power and Mode Selection. The defaulted mode is Double Hands Operating and the Pitch Control Wheel can't control the GB603.

CAUTION: Do not touch the gimbal once the ProAction™ is in powering-on state, lest gimbal servo motor vibration or overload.

NOTICE: When switching off the TORNADO ProAction™, power off the ProAction™ first, then press the stop recording button to save the images, and turn off the camera at last.



PROACTION™ CONTROLS

The Power and Mode Selection Switch has three gears. The Left is Power-off, the Middle is Follow Mode and the Right is Global Mode.

FOLLOW MODE: In the Follow Mode, the camera lens will track the gimbal in Yaw axis. The user can only control the pitch direction through Gimbal Control Stick on the right.

GLOBAL MODE: In the Global Mode, the camera lens stick to a fixed direction instead of following the movement of the ProAction™ Frame. The user can Control the Yaw and Pitch Direction through Gimbal Control Stick.

NOTICE: Place the Proaction™ on a flat and stable surface and then connect the gimbal and power cord. Switch on the power and wait it to complete the initialization. Whichever mode the gimbal is in, it will boot-up. Once the gimbal is powered on, it starts self-check and the Battery Indicator will be solid green. At the same time, the Control Status Indicator blinks green and blue alternatively. When the self-check (start-up) process completes, the Control Status Indicator will glow solid blue. The user can switch freely between Follow Mode and Global Mode without powering off the gimbal.

THE PROACTION™ FEATURES TWO GIMBAL GRIPPING METHODS:

DOUBLE HANDS OPERATING:

Grip the left and right handles of the ProAction™ with both hands. The Power and Mode Selection Switch is on the left side, while the Gimbal Control Stick is on the right side.

NOTICE: Once the ProAction™ is started up, no matter which mode it is in, the default mode is Double Hands Operating. The Control Status Indicator on center carrying handle will be solid red. The user can ONLY take control of the gimbal through Gimbal Control Stick on the right side.

Double Hands Operating Method

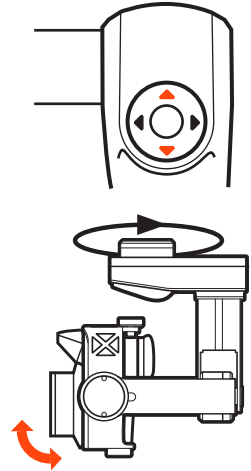
In the Follow Mode, the camera lens track the ProAction™ in Yaw axis. The user can only control the pitch direction through Gimbal Control Stick on the right.

Move the Gimbal Control Stick upward to trim the camera lens up. Move the Gimbal Control Stick downward to trim the camera lens down.

In the Global Mode, the camera lens does not move in the direction of the ProAction™ Frame but sticks to a fixed direction. The user can control both the Yaw and Pitch directions through Gimbal Control Stick.

Move the Gimbal Control Stick upward/downward to trim the camera lens up/down. Move the Gimbal Control Stick to the left/right to trim the camera lens left/right.

NOTICE: When in the Follow Mode, the Gimbal Control Stick can't control the GB603 in Yaw axis. When in the Global Mode, the Gimbal Control Stick can control the GB603 in Pitch and Yaw axes.



SINGLE HAND OPERATING:

Lift the center carrying handle with one hand. When holding the ProAction™ with single hand, press and hold the Function Switch Button in the rear of the Pitch Control Wheel. The Control Status Indicator will glow solid blue when successfully switched.

The control right has been switched to the Pitch Control Wheel on the center carrying handle. The Gimbal Control Stick on the right side of the ProAction™ is disabled in Pitch direction.

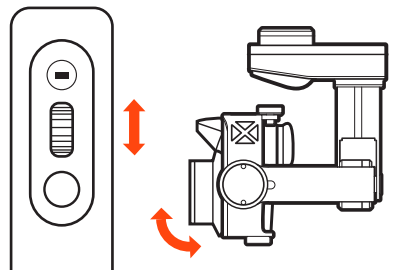
NOTICE: When the user holds the ProAction™ with single hand in the Global Mode, the user can control the camera in the Yaw direction through the Gimbal Control Stick.

Single Hand Operating Method

Roll the Pitch Control Wheel forward to move the camera pitch/angle downward, and roll the Pitch Control Wheel backward to move the camera pitch/angle upward.

ANGLE LIMITS

When operating the ProAction™, it is suggested to hold it horizontally for better photography experience, or at least to make sure the roll angle is less than 40 degree.



GH4 CAMERA APP

NOTICE: If your camera features the function of connecting the camera aperture with the WIFI through mobile device, you can mount your mobile device on the phone holder for better photography experience. Taking Panasonic GH4 as an example:

Mobile APP Installation

Step 1) Install Panasonic Image APP in your phone.

Step 2) When turning on the Camera, press Fn1 to activate Camera WiFi function, and then the WiFi Indicator will glow solid blue.

Step 3) Recognize the WIFI SSID and password on your camera screen, and then connect your mobile device to the camera through the WiFi.

Step 4) Tap the APP downloaded in your mobile device, then you can take the mobile device as a camera aperture.

Step 5) When the phone is activated the remote control function, it can also control the camera.

SONY® α7 CAMERA APP

Mobile APP Installation

STEP 1) Install PlayMemories Mobile APP in your phone.

STEP 2) When turning on the SONY® α 7 CAMERA, press the Menu and tap the Application on the screen, then choose the Application List.

STEP 3) Tap the Smart Remote Embedded and recognize the WIFI SSID and password on the camera screen, and then connect your mobile device to the camera through the WiFi.

STEP 4) After the connection is completed, you can take the mobile device as a camera aperture.

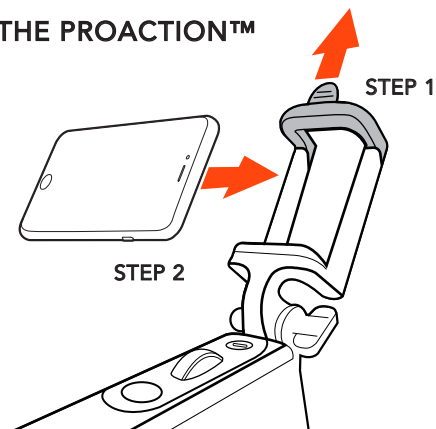
NOTICE: After the mobile device is connected to the camera. The mobile device/camera can't record videos. It can ONLY take pictures.

TIPS: If no 'Application List' is in the 'Application' on the camera screen, please download the APP from the SONY® official website.

ATTACHING A MOBILE DEVICE TO THE PROACTION™

Mount your mobile device on the ProAction™.

NOTICE: For other connecting methods, please refer to the Camera Manual. The phone holder can be folded up when the camera can't connect with the phone.



Any information above might be changed due to the software update. For the latest documents, please check the official website.



YUNEEC
ELECTRIC AVIATION

FCC STATEMENT:

This equipment has been tested and found to comply with the limits for 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 to an outlet on a circuit different from that to which the receiver is connected.

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: 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.