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Disclaimers and essential information to know before using the VND filter products:

- *Notes:** The VND's adjustment range is ND 0.3–2.7. We advise using lenses that have a focal length longer than 35mm. Using the VND at higher density on lenses wider than 24mm will have a vignetting effect. (This cannot be avoided due to the variable ND filter's structure and mechanism.) Please be aware of this before making your purchase.
- *Notes on 4x5.65 filters:** Please refer to Page 9 of this user manual for instructions on handling 4x5.65 filters. Please follow instructions to avoid any mishandling of the product.
- *Disclaimers:** Tilta is not responsible for any broken filters, vignetting, and/or unusable photo or video footage caused by mishandling of the product.

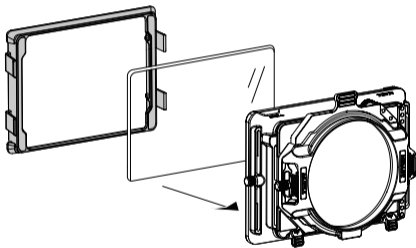
Filter products maintenance

Optical products are precision instruments which requires protective packing during transportation and storing. Keep the filter products in a dry and cool area. Stay away from water, moisture, and dust. Possible artificial damages include:

- ① Falling, collision, and scratches during handling.
- ② Improper storing can cause erosion and mold on filter.
- ③ Scratches caused by filter stains and improper cleaning.
- ④ Damage caused by improper transportation.
- ⑤ Scratches and paint chips caused by handling and contact.
- ⑥ Scratches caused by mishandling during packing, unclean or dusty environment, improper cleaning. (Use an air blower to clean up the dust on the filter surface. For any remaining dust or stains, use a lens cleaning wipe with 97% alcohol and wipe the filter in circles. Avoid any secondary damage from the dust.)
- ⑦ If sea transportation occurs, seal the product and store it in a dry environment. Keep it away from salty air or water.

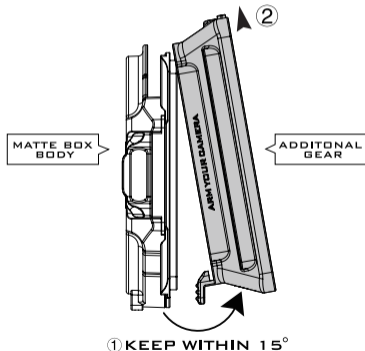
Damage caused by any of the above mishandling of the product and/or any other unforeseen behaviors are not included in the product's service and warranty. For non-user error related product quality issues, Tilta guarantees exchange and service within 3 months of the purchase.

When shooting in high speed moving conditions or extreme weather (such as desert, snow, etc), we highly recommend using [Filter Protector Kit] to protect your lens and filter.



*The top flag(MB-T16-TF) can be removed if shooting under high speed moving conditions.

When removing the matte box and its additional gear (such as the flare-free matte box, additional 95mm circular filter tray, and 4X5.65 filter tray backing), please keep the additional piece within 15° of your setup, and slide the additional piece upwards to avoid any damage to the locking toggle on the matte box body.



25 TILTA MIRAGE MATTE BOX

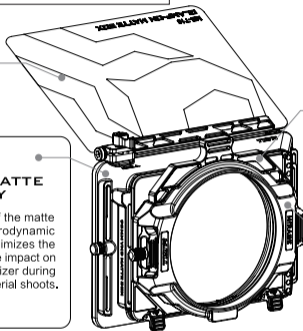
① CARBON FIBER
TOP FLAG

②



4X5.65 MATTE BOX BODY

The front hood of the matte box body has aerodynamic design which minimizes the wind drag and the impact on the camera stabilizer during car shoots and aerial shoots.



③

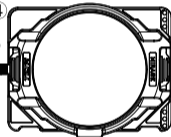


CIRCULAR FILTER TRAY
FOR TILTA MIRAGE
[Filter not included]



95MM VARIABLE ND
FOR TILTA MIRAGE
[Variable ND filter included]

④

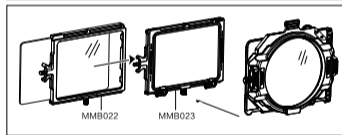
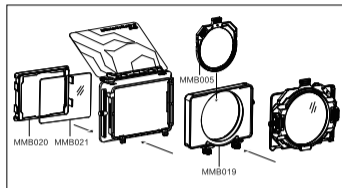
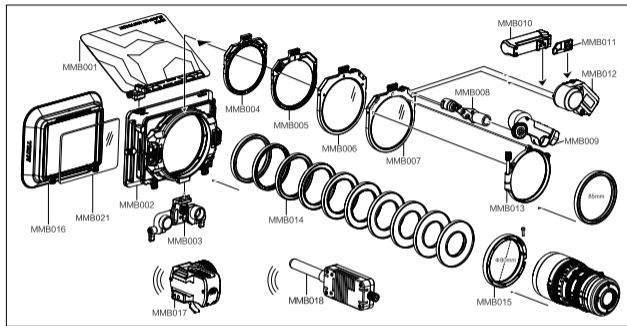


VND FILTER HOLDER

Ultra lightweight material.
Ergonomic design.
Quick release locking toggle.
Multifunctional design.

[Tilta Mirage Matte Box] is a matte box that fully satisfies the needs and wants of content creators. The Tilta Mirage adopts a lightweight and modular design. The circular 95mm insert filter tray provides users with the possibility of using lighter weight and lower cost filters. In addition, we have introduced the wireless VND module which can pair with the matte box in order to support your production needs.

26 OVERVIEW



NO.	PRODUCT NAME	SKU
MMB001	Top Flag for Tilt-a-Mirage	MB-T16-TF
MMB002	VND Filter Holder	-----
MMB003	15mm LWS Support for Tilt-a-Mirage	MB-T16-LS
MMB004	Circular Filter Tray for Tilt-a-Mirage	MB-T16-CFT
MMB005	Dual Circular Filter Tray for Tilt-a-Mirage	MB-T16-DCF
MMB006	95mm Polarizer Filter for Tilt-a-Mirage	MB-T16-POLA

NO.	PRODUCT NAME	SKU
MMB007	95mm Variable ND for Tilt-a-Mirage	MB-T16-VND
MMB008	Nucleus Nano Motor Adapter for Tilt-a-Mirage	MB-TM-NMA
MMB009	Nucleus Nano Motor	WLC-T04
MMB010	14500 Power Supply for Tilt-a-Mirage Motor	MB-TM-PS
MMB011	Motor Cover	-----
MMB012	Wireless Motor for Tilt-a-Mirage	MB-TM-WM

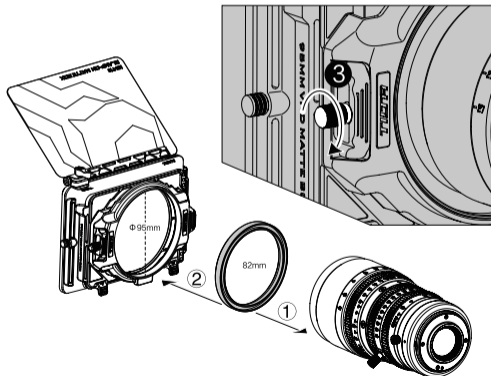
NO.	PRODUCT NAME	SKU
MMB013	Lightweight Filter Clamp-On Adapter	MB-T16-LFA
MMB014	95/85/82/77/72/67/62/58/55/52mm Adapter Ring	-----
MMB015	80mm Cinema Adapter Ring for Tilt-a-Mirage	MB-T16-C80
MMB016	Rubber Hood for Tilt-a-Mirage	MB-T16-RH
MMB017	Wireless Controller for Tilt-a-Mirage	MB-TM-WC
MMB018	Range Extender for Tilt-a-Mirage	-----

NO.	PRODUCT NAME	SKU
MMB019	95mm Stackable Circular Filter Tray for Tilt-a-Mirage	MB-T16-SCF
MMB020	Filter Protector Frame for Tilt-a-Mirage	MB-T16-FPF
MMB021	Filter Protector Glass for Tilt-a-Mirage	MB-T16-FPG
MMB022	4x5.65 Stackable Filter Tray for Tilt-a-Mirage	MB-T16-SFT
MMB023	4x5.65 Stackable Filter Tray Holder for Tilt-a-Mirage	MB-T16-SFH

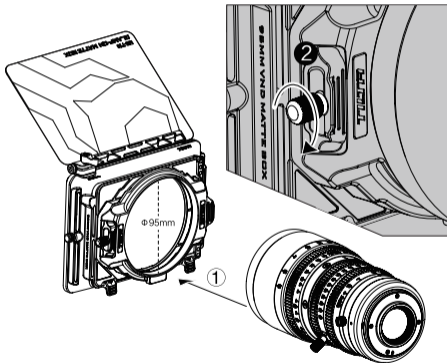
1. Mounting the matte box

(1) Select the adapter ring that fits the front diameter of your lens. (67mm, 72mm, 77mm, and 82mm adapter rings are included in the kit.)

(2) If you are looking for other adapter ring sizes, please contact our customer service.

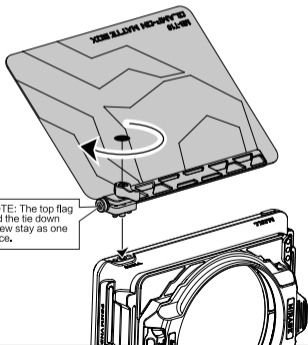


(3) If the front diameter of your lens is 95mm, no adapter ring is needed. Loosen the tie down screw on the right side of the matte box. Place the matte box onto the front of the lens. Adjust the level and tighten the tie down screw.



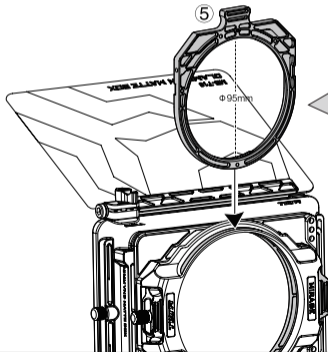
2. Mounting the carbon fiber top flag

- (1) The top flag and the tie down screw stay as one piece.
- (2) The matte box is not needed when there is no lens flare. Adjust the tie down screw to adjust the top flag's angle.

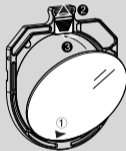


3. Mounting the 95mm circular filter tray and filter

- (1) Kit A comes with a 95mm circular filter tray. Follow the picture below, pull (4) the locking clip to take out (5) the 95mm circular filter tray.
- (2) The filter slot is compatible with major brands of 95mm circular filters, such as ND filters, streak filters, star filters, pro-mist, black pro-mist, etc.
- (3) The 95mm circular filter weighs only 1/4 of a traditional 4 x 5.65 filter. Compared to the traditional threaded filter, the circular insert filter is more efficient and practical for shooting.



Installing the 95mm Circular Filter



1. Place the filter into (1) the bottom of the filter tray and pull up (2) the locking toggle.
2. Place the filter into (3) the filter tray, Release the locking toggle.

- (4) Pull the locking toggle to release the circular filter tray

4. Installing the filter

4x5.65 filter can be mounted onto the matte box body. The circular threaded filter can be installed from the front without dismantling the matte box.

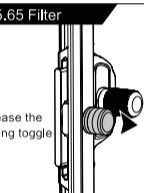
*If you would like to double up the filter, please purchase the 4x 5.65 filter tray (MB-T16-SFH) backing and the additional 4x 5.65 filter tray (MB-T16-SFT).

To double up the circular filter, please purchase the additional 95mm circular filter tray (MB-T16-SCF).

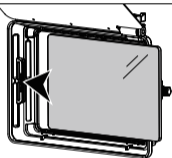
4X5.65 Filter

Release the locking toggle

1

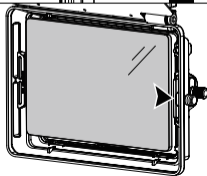


2



Slide the 4X5,65 filter into the matte box as shown above.

3

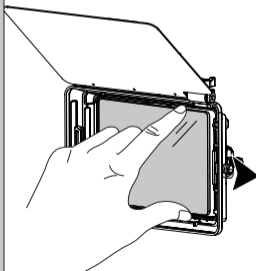


Mount the filter into position.

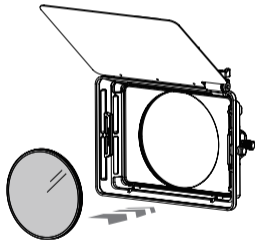
Notes on handling the 4x5.65 filters:

NOTE: When releasing the filter locking toggle, use one hand to hold onto the 4x5.65 filter. The filter releases forward. Please use extra caution when operating to avoid any filter damage.

DISCLAIMERS: Tilta is not responsible for any user error-caused broken filters.



Circular Threaded Filter

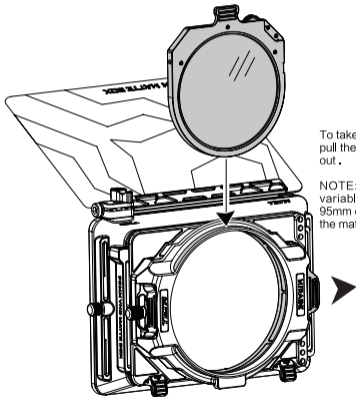


NOTE: The circular threaded filter CANNOT be used with the 95mm variable ND filter at the same time. Please do not insert the 95mm circular filter tray after mounting the circular threaded filter.

31 KIT B INSTRUCTIONS (PART I.)

1. Mounting the 95mm variable ND

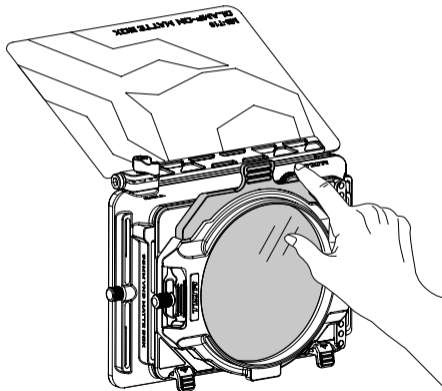
(1) After completing the kit A instructions steps, insert the 95mm variable ND.

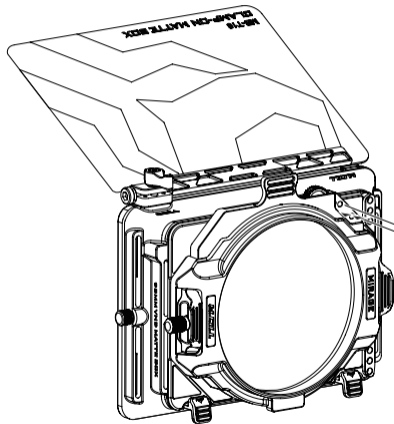


To take out the 95mm variable ND, pull the locking toggle, then take it out.

NOTE: After taking out 95mm variable ND, please place the 95mm circular filter tray back into the matte box.

(2) Manual control—To control the ND manually, toggle the wheel in the top right corner of the variable ND filter tray.





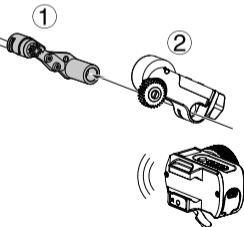
2. Electronic control

(1) Installing the ① Nucleus Nano motor adapter for Tilta Mirage.

Align the M3 screws on the Nucleus Nano motor adapter with the M3 screw holes on the 95mm variable ND. Make sure the wheel can rotate smoothly. Mount the Nucleus Nano motor onto the motor adapter, align the wheels and make sure they can rotate smoothly.

(2) Controlling the variable ND via Nucleus Nano hand wheel controller & Nucleus M hand unit & wireless controller for Tilta Mirage.

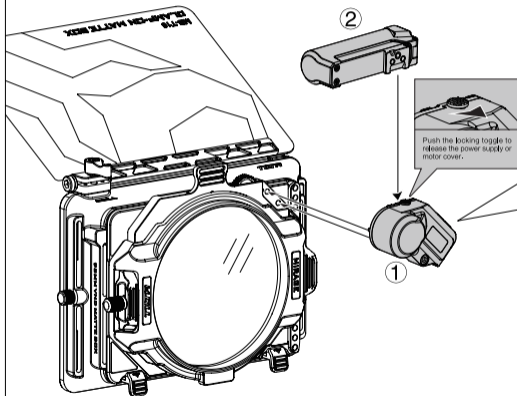
Connect ② the Nucleus Nano motor to power. Press and hold the CAL button to calibrate. You will be able to control the ND filter after the calibration is complete. [While operating moving shots (handheld, gimbal, car mount, etc), controlling the variable ND wirelessly will improve efficiency.]



Wireless Controller
for Tilta Mirage

for Tilta Mirage Wheel
Controller

Nucleus M Hand Unit



Controlling the variable ND via wireless motor for Tilta Mirage

(1) Installing ① the wireless motor for Tilta Mirage.

Align the M3 screws on the wireless motor adapter with the M3 screw holes on the variable ND. Turn on the motor.

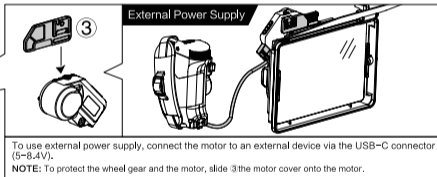
(2) Installing ② the 14500 power supply for Tilta Mirage motor.

To use the 14500 power supply, slide the battery chamber onto the motor.

(3) Controlling the variable ND via Nucleus Nano hand wheel controller & Nucleus M hand unit & ④ wireless controller for Tilta Mirage.

Please refer to the previous page for pairing instructions. While operating moving shots (handheld, gimbal, car mount, etc), controlling the variable ND wirelessly will improve efficiency.

(4) To control via the Tilta advanced focus handle, connect the handle and the motor via the USB-C ports.



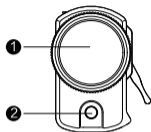
Wireless Controller
for Tilta Mirage



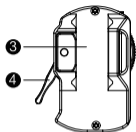
Nucleus Nano Hand
Wheel Controller



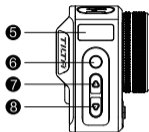
Nucleus M Hand Unit



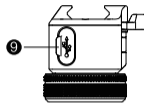
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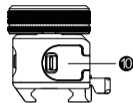
<BACK>



<LEFT>



<TOP>



<BOTTOM>

1 Hand wheel

For controlling the wireless motor.

2 Power button

Long hold: power on and off.
Single click: Run/stop.
(Under any menu settings, single click the power button to return to the main menu.)

3 NATO rail port

The wireless controller can be mounted on setups with a NATO rail.

4 NATO rail tie down**5 Display****6 CAL key**

(1) Hold for 3s to activate automatic calibration.
(2) Double click to activate manual calibration.
(3) Single click to set A-B marks.

7 Up key

Double click: Go up in selection + raise channel.
Long hold: Enter main menu (including wireless setting, motor setting, function setting, system setting).
In menu, single click to go up, double click to confirm.

8 Down key

Double click: Go down in selection + lower channel.
In menu, single click to go down, double click to return to the previous menu.

9 USB-C port

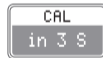
For firmware update.

10 Battery chamber

For 14500 battery (3.7V). The battery can be installed in either direction regarding positive and negative.

CAL Key Functions (Part I.)**[1] Auto CAL Setting**

Long hold CAL key for 3 seconds, the motor will enter auto CAL and spin.

**[2] A-B marks setting****1.Set A-B marks**

A mark: Rotate the hand wheel to the desired position for A mark. Single click "CAL" key to confirm.
B mark: Rotate the hand wheel to the desired position for B mark. Single click "CAL" key to confirm.
A-B marks are now set.

**2.Cancel A-B marks**

After AB marks are set, single click CAL key again to cancel them.

35 WIRELESS CONTROLLER FUNCTIONS (PART I.)

CAL Key Functions (Part II.)

[3] Free Rotation. Manual Calibration Instructions.

(This function is compatible with Nucleus M and Nucleus Nano motors.)



1. Double click CAL key to initiate manual CAL setting. Display shows as (H_C_A).

2. Manually rotate the lens focus to close focus, and install the motor to the lens. Then rotate the hand wheel so that the lens is at infinite focus.



3. Double click CAL key again to confirm the free rotation setup.

Wireless Settings (2.4G bluetooth) (Part I.)

[1] 2.4G mode is for wireless frequency setting



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select Wireless setting. Double click "Up" key to confirm selection.



2. Double click "Up" key to enter [2.4G mode].



3. Use "Up" and "Down" keys to toggle through and select High / Medium / Low frequency. Double click "Up" key to confirm the selection.

36 WIRELESS CONTROLLER FUNCTIONS (PART II.)

Wireless Settings (2.4G bluetooth) (Part II.)

[2] Bluetooth mode functions



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select Wireless setting. Double click "Up" key to confirm selection.



2. Use "Up" and "Down" keys to toggle through and select BLUE. Double click "Up" key to confirm selection.



3. Double click ON to enter connection mode. (The bluetooth is turned off by default.)



4. After entering "Connect", double click "Up" key to enter "Search" mode.

*Use phone APP to connect the Bluetooth devices for lens control or camera run/stop control. Or connect the devices directly via Bluetooth. (As of right now, only applicable to BMPCC 4K/6K PRO.) (After downloading the APP, please follow the updates from Tilta official website.)

[3] Connecting with BMPCC 4K/6K PRO via Bluetooth for Run/Stop Control

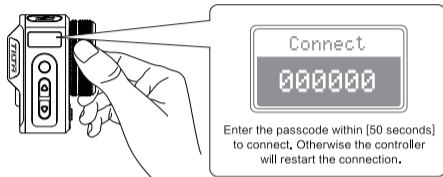
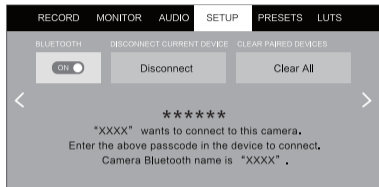


1. Take BMPCC 6K PRO camera as an example. Open camera menu and find bluetooth setting.



2. Navigate to Bluetooth setting on the wireless controller, select Connect and double click the Up key to enter searching mode.

37 WIRELESS CONTROLLER FUNCTIONS (PART III.)



3. During connection, a passcode will be generated from the camera. Enter the passcode on the wireless controller.
[Passcode instructions: The passcode contains 6 digits. Use the hand wheel to move between digits, double click "Up" key to confirm and enter the next digit. Enter all 6 digits, then double click "Up" key to connect.]
Once the connection is complete, use the power button on the controller to control REC/STBY.

4. Once the first connection of the device is complete, no passcode will be needed to connect in the future. To use the control with other cameras, clear the bluetooth info. Please see instructions below.



- ① In the Bluetooth setting, select Clear and double click "Up" key to confirm.



- ② Clear the Bluetooth info on the camera by selecting Clear All.

Motor Setting

[1] Motor direction



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select Motor. Double click "Up" key to confirm and enter Direction menu.



2. Double click "Up" key in Direction "Down" keys to toggle through and select CW or CCW. Then double click "Up" key to confirm the selection.

[2] Motor number



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select Motor. Double click "Up" key to confirm and enter Number menu.



2. Double click "Up" key in Number. Use "Up" and "Down" keys to toggle through and select a motor number (0/1/2/3/4). Then double click "Up" key to confirm the selection. The selected motor number will appear on the display.

39 WIRELESS CONTROLLER FUNCTIONS (PART V.)

Function Setting

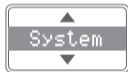
Calibrating the hand wheel



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select Function. Double click "Up" key to confirm.



2. When the display shows Wheel Cal, rotate the hand wheel counterclockwise to the minimum end, then rotate the hand wheel to the maximum end. Double click "Up" key to confirm.

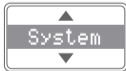


[1] Looking up the version info

Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select System. Double click "Up" key to enter Info, and double click "Up" key again to look up the current firmware info.

System Setting (Part I.)

[2] Language Setting



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select System. Double click "Up" key to confirm and select Language.



2. Double click "Up" key in Language "Down" keys to toggle through and select 中文 or English. Then double click "Up" key to confirm the selection.

40 WIRELESS CONTROLLER FUNCTIONS (PART VI.)

System Setting (Part VI.)

[3] Restore Setting



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select System. Double click "Up" key to confirm and select Restore.



2. Double click "Up" key in Restore "Down" keys to toggle through YES or NO. Then double click "Up" key to confirm the selection.

[4] Display Directions Setting



1. Long hold "Up" key to enter menu settings. Use "Up" and "Down" keys to toggle through and select System. Toggle through and double click "Up" key to select Display.



2. Use "UP" and "Down" keys to toggle through and double click 'Up' key to select Normal or Inverted.



Normal or Inverted

Inverted display

NOTE: When the display is in inverted direction, use "Reset" function to return to normal direction.

Firmware Updates

When the battery is not installed, long hold both "Up" and "Down" keys at the same time, and connect the wireless controller to a computer via a USB-C cable. Copy the firmware file to the wireless controller. After the copying is complete, the wireless controller will automatically turn on and complete the firmware update. Please visit the Tilta official website to download firmwares for the products accordingly.

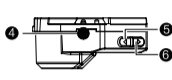
41 WIRELESS MOTOR FOR TILTA MIRAGE OVERVIEW



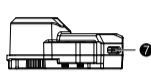
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<BACK>



<TOP>



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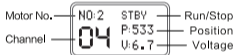
- 1 Display
- 2 M3 screw
- 3 0.4M gear
- 4 Locking toggle
- 5 Up key
- 6 Down key
- 7 USB-C port

Used for firmware update, data backup, and input power supply (input 5~8.4V, 2A+)

Up Key Functions

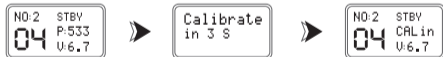
Channel settings

Double click the Up Key to lower channel
Double click the Down Key to raise channel

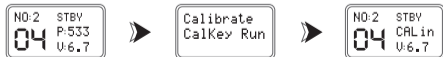


Auto CAL settings

Method 1: Long hold the Up Key for 3 seconds, the motor will enter auto CAL and spin.



Method 2: Long hold the Up Key to enter the running interface, then double click Up Key to enter auto CAL spin.



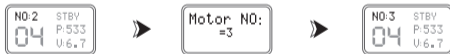
Down Key Functions

On/Off setting

Long hold Down key to enter on/off setting.

Motor No. setting

Triple click the Up or Down Key to enter the motor No. interface, Single click the Up Key to lower the motor No., and single click the Down Key to raise the motor No..If no action is executed in 10 seconds, the interface will exit automatically. (Or triple click the Up or Down Key to exit the interface.)



Notes on Power



The motor can be powered by the external 14500 power supply for Tilta Mirage motor. When the motor's voltage is around 6.8V, the USB-C port can output 6.8V power.

The USB-C port can input 5~8.4V, 2A.



No-load current: Around 100 mA.
Load current (with the VND filter): Around 600 mA.



Circular Filter Tray
for Tilta Mirage

[For holding 95mm
circular filters.]



95mm Variable ND
for Tilta Mirage

[Dual filters. Supports
manual ND adjustment.]



95mm Polarizer Filter
for Tilta Mirage

[Single filter. Eliminates
or reduces glare.]



Dual Circular Filter
Tray for Tilta Mirage

[For holding two circular
filters.]



Lightweight Filter
Clamp-on Adapter

[Mounts directly onto 95mm
diameter lenses or other sizes
diameter lenses.]



80mm Cinema Adapter
Ring for Tilta Mirage

[For mounting onto 80mm
front diameter lenses.]



86/85/82/77/72/67/62/58/
55/52mm Adapter Ring

[For mounting onto 86/85/82/77/72/
67/62/58/55/52mm front diameter
lenses.]



14500 Battery
Charger

[For charging 14500
batteries.]



Wireless Controller
for Tilta Mirage

[Controls ND wirelessly
during gimbal, car shoots, etc]



Wireless Motor for
Tilta Mirage

[Electronic control for
ND.]



14500 Power Supply
for Tilta Mirage Motor

[Battery chamber for
14500 battery.]



14500 Power Supply for
Tilta Mirage Motor

[Battery chamber for
14500 battery.]



Range Extender for
Tilta Mirage

[For remote control during
long distance shoots, such
as drone shoot.]



15mm LWS Support
for Tilta Mirage

[For mounting 15mm rods.]



4x5.65 Stackable Filter
Tray for Tilta Mirage

[For holding a 4X5.65 Filter.]



4x5.65 Stackable Filter
Tray Holder for Tilta Mirage

[For mounting an additional
4X5.65 Filter Tray.]



95mm Stackable Circular
Filter Tray for Tilta Mirage

[Holds additional circular
filter.]



Rubber Hood for
Tilta Mirage

[Eliminate glass flare]



① Filter Protector Frame for
Tilta Mirage
② Filter Protector Glass for
Tilta Mirage

[Protector for lenses and filters
during high speed moving con-
ditions.]



Filter Pouch

[Organizer for the filters]



Advanced Soft Carrying
Case for Tilta Mirage

[Organizer for the matte box.]

MIRAGE MOTORIZED VND MATTE BOX