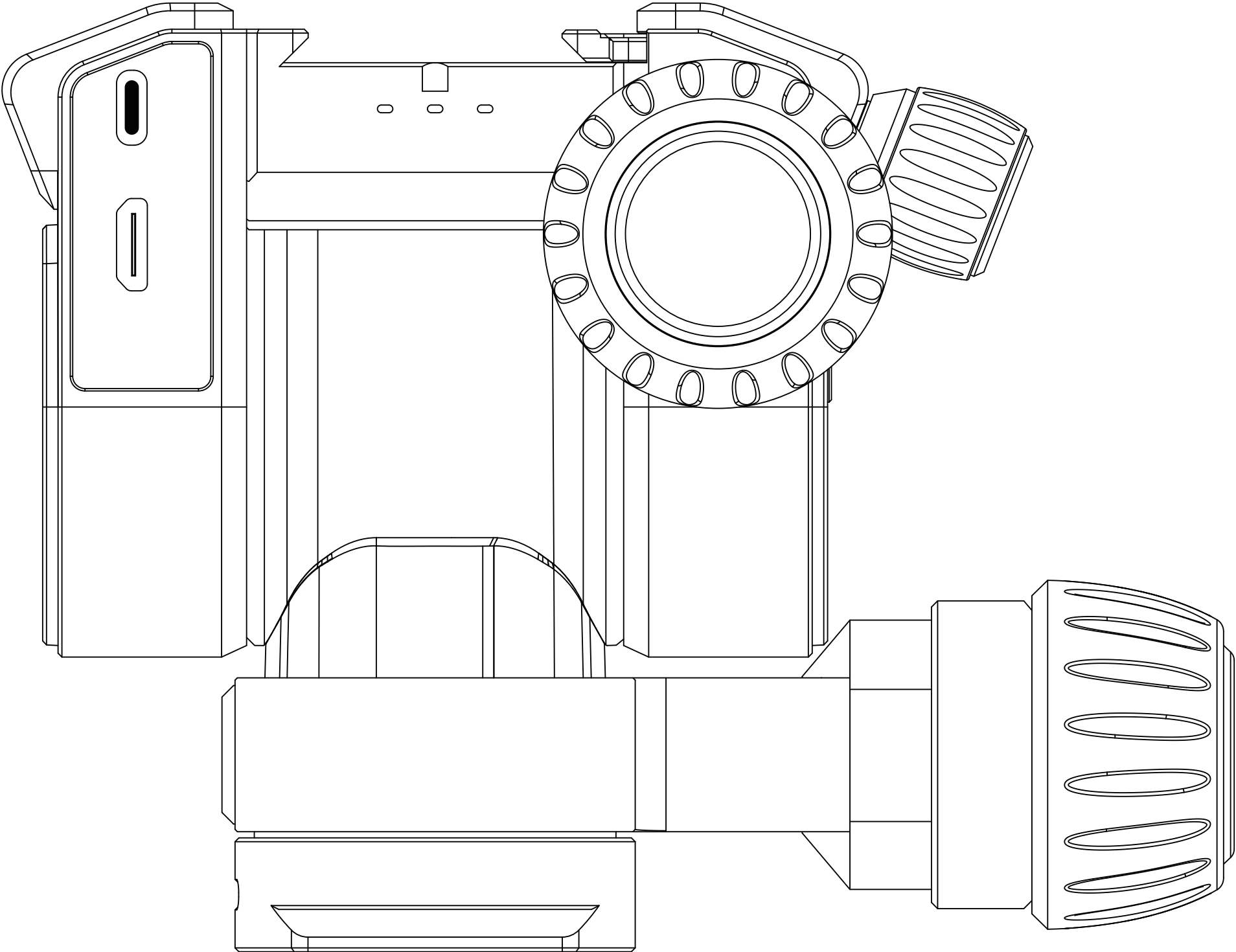# POLARIS

User Manual

v1.1
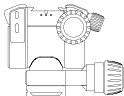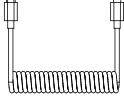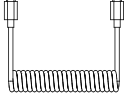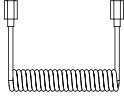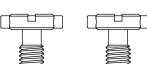

BENRO

Introduction

Polaris is an innovative smart tripod head for mirrorless and DSLR cameras. It's been designed and built to be compact, portable, and quick to set up. With Polaris, you can remotely control the shooting angle, and preview your shot on your mobile device through a WiFi or cellular network*, giving you great flexibility regardless of the distance.

With the dedicated app, you can shoot with various programmable functions like time-lapse,panoramic photography, sunset and sunrise planning, etc., In addition, with the optional accessory of the Astro kit, you can turn Polaris into a professional equatorial mount, and capture stars easily with the 'GoTo' function, and automatically track stars for streak-free long exposures.

Package Contents

| Content		PCS
	Polaris	1
	Quick-Release Plate	1
	Charging Cable	1
	Mini Camera Control Cable	1
	Type-C Camera Control Cable	1
	Micro-USB Camera Control Cable	1
	"3/8" to "1/4" Adaptor	2

● Polaris does not come with a memory card (microSD) or HDMI Cable.
● If you purchased an Astro Kit, check that the Astro Kit is included.
● Be careful not to lose any of these items.

Overview

① Power Button ⑥ Power Indicator ⑪ Mini HDMI Port ⑯ SD Card Slot

② Lock Knob ⑦ Cellular Indicator ⑫ Extra Port ⑰ SIM Card Slot

③ Clamp ⑧ Wi-Fi Indicator ⑬ Flash Port

④ Pitch Motor ⑨ Charging Port ⑭ Shutter Port

⑤ Pan Motor ⑩ USB-C Port ⑮ Card Cover
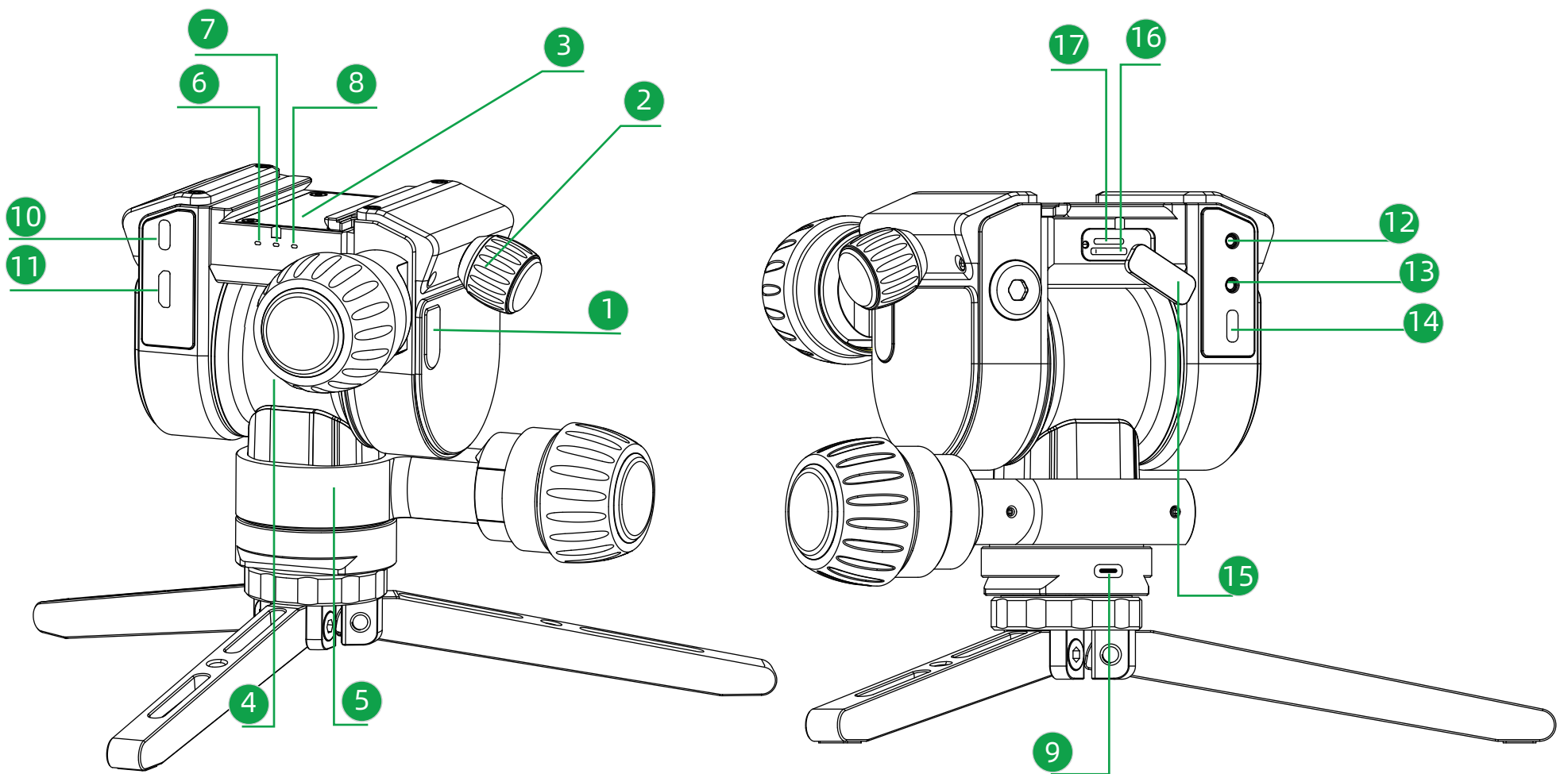
💡 The SIM card slot can only be used with the Cellular version of Polaris. The Wi-Fi version of Polaris has no use of the SIM card slot.

Quick Start Guide

1. Insert MicroSD Card
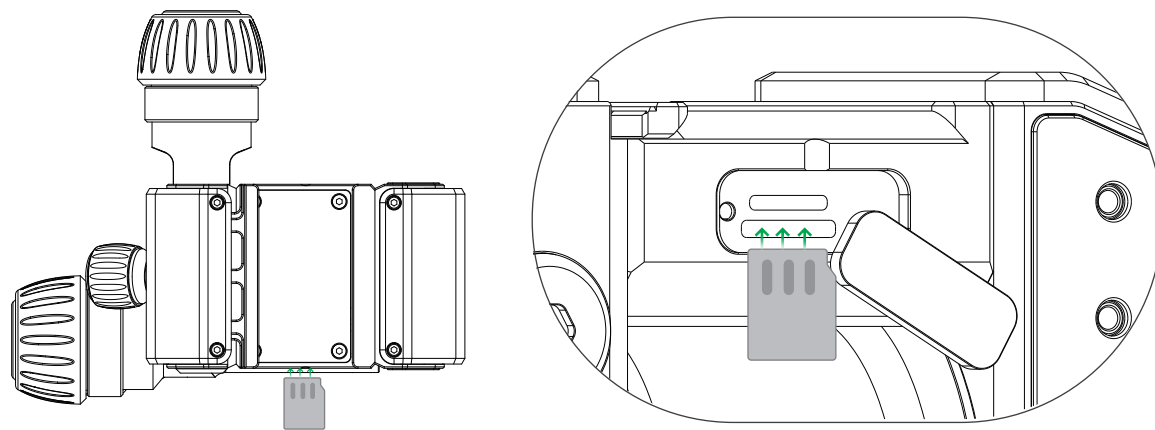
2. Attach To A Tripod
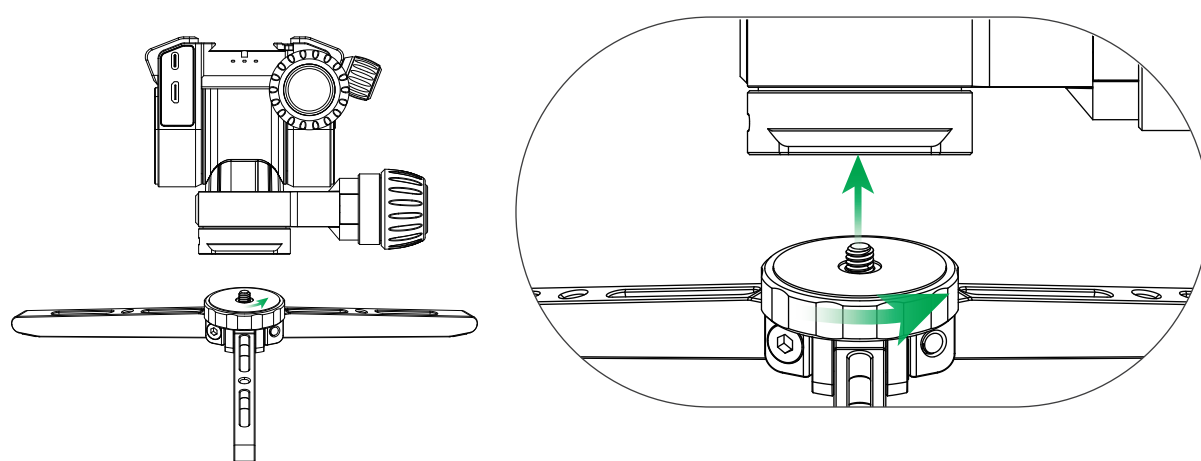
- Screw the top of the tripod into the 3/8" screw port on the bottom of the Polaris and mount it securely. Use a 3/8 to 1/4 adapter if necessary.

3. Install Camera

- After sliding the camera with the quick release plate installed into the [Clamp] slot on the top of the Polaris body, lock it in place with the [Lock Knob].

4. Connect To The Camera （Using Canon EOS R5 As An Example）
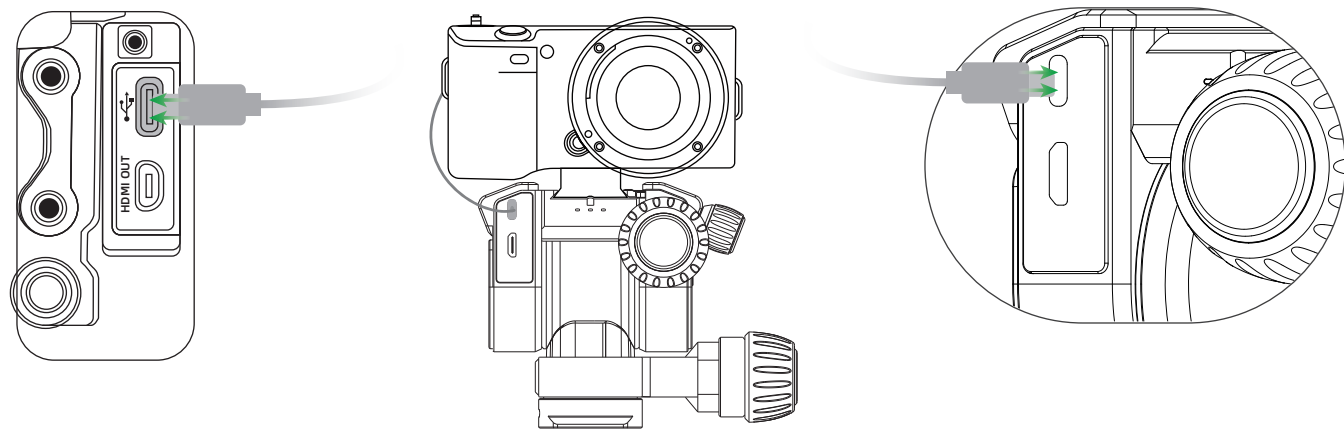
- Plug in the USB-C camera port on the Polaris body and the digital terminal on the camera body with the included camera control cable.
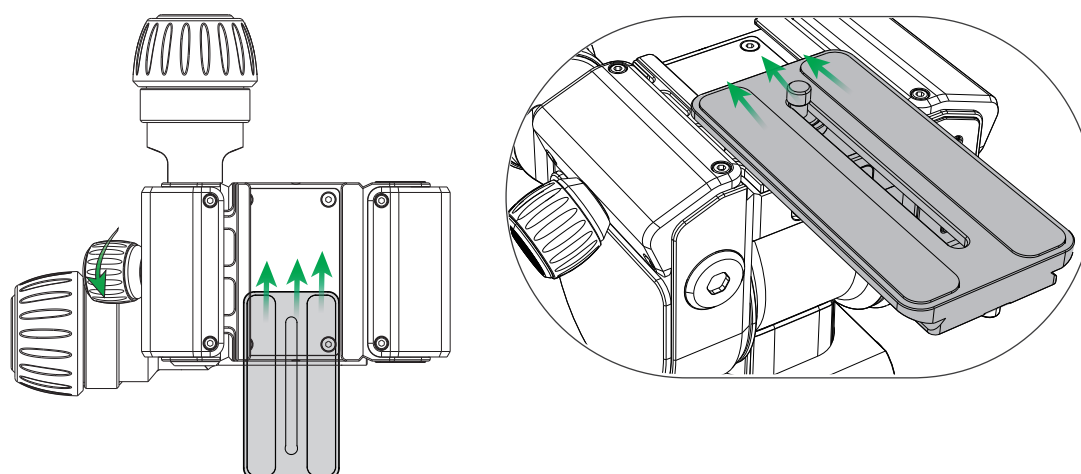
> ⚠ **Caution**
>
> ● No memory card in the camera may result in the captured photos not being saved.
>
> ● It is recommended that you select the camera's mode dial to M shooting mode before use.

5. Power On

Power   Wlan
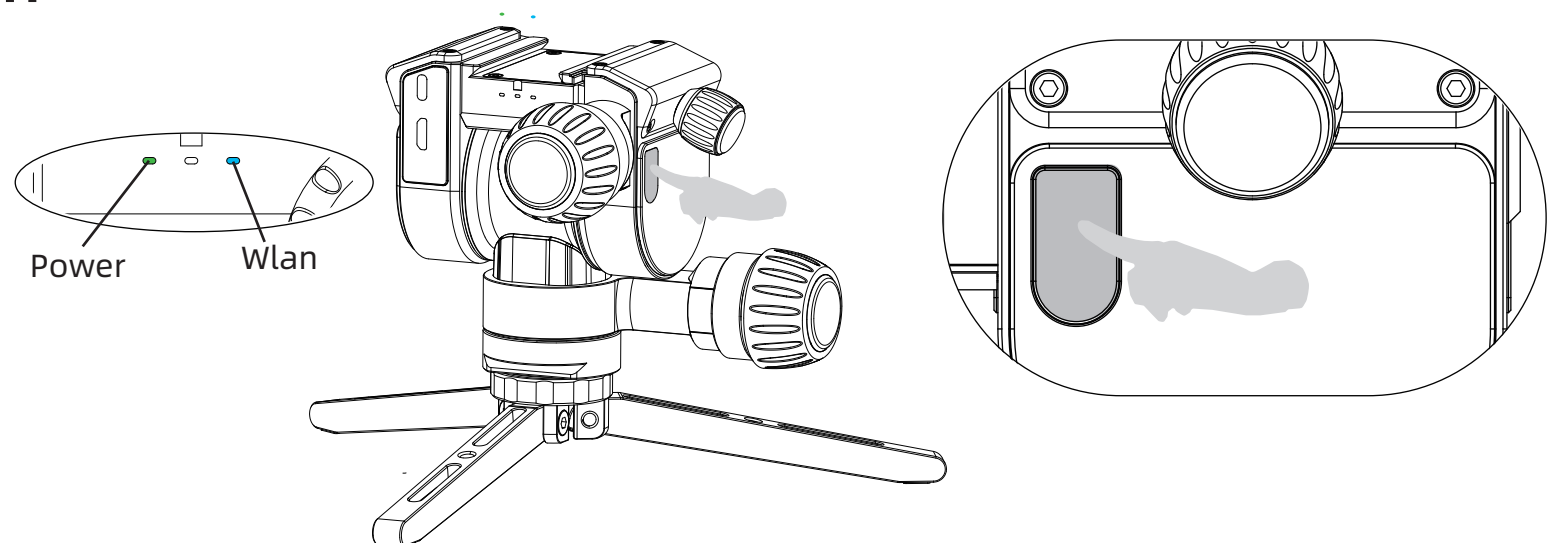
- Double press and hold the [power button], and release the button after hearing three "beep" .

6. 6. Connect Polaris APP

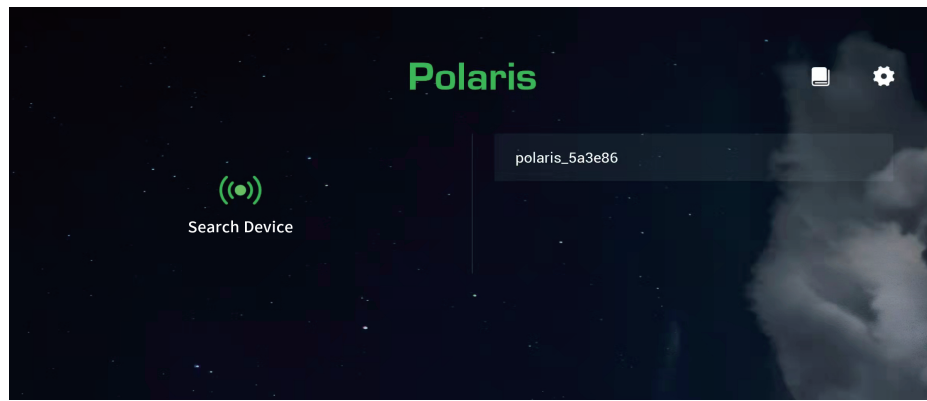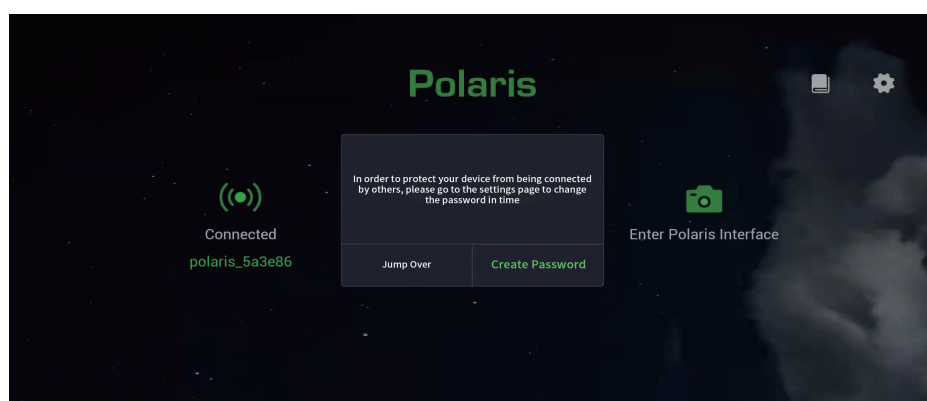- Launch Polaris App, and tap the Polaris' name to do a Wi-Fi connection.

Enter Camera Interface

- When tap[Enter Polaris Interface], a pop-up to create a password will appear, which can be skipped(it is recommended to create a password).

Compatible MicroSD Cards

This product recommends the use of microSD cards with transfer speeds up to UHS-Ⅰ Speed Grade 3 (U3) rating (maximum supported capacity is 1 TB). If the MicroSD card is new or previously formatted (initialized) using another device or computer, please format the card by using this device.

Download The Polaris App

To use this product, you need to download and install the Polaris App. Please search for To use this product, you need to download and install the Polaris App. Please search for "Polaris" in the mobile app store or download it on the homepage of this page.in your phone's App Store or scan the QR code with your phone to install it.

- Polaris App requires iOS v12.0 and above or Android v8.0 and above.

Charging Polaris

Use Standard Charging Cable For Charging

1.Use the included Type-C charging cable to connect Polaris to the charging brick (self-suplied).

2.Plug the charger into an outlet.

3.Charging starts automatically and the power indicator flashes in green.

| Charging Status	Power Indicator	
	Color	Display
Charging	Green	Turned On
Fully Charged	None	Off

● **Charging Time :   It takes approximately 2 hours and 30 minutes to charge the productwith a depleted battery (when using a 9V/2A USB charger).** Charging time varies greatly depending on ambient temperature and remaining battery power.

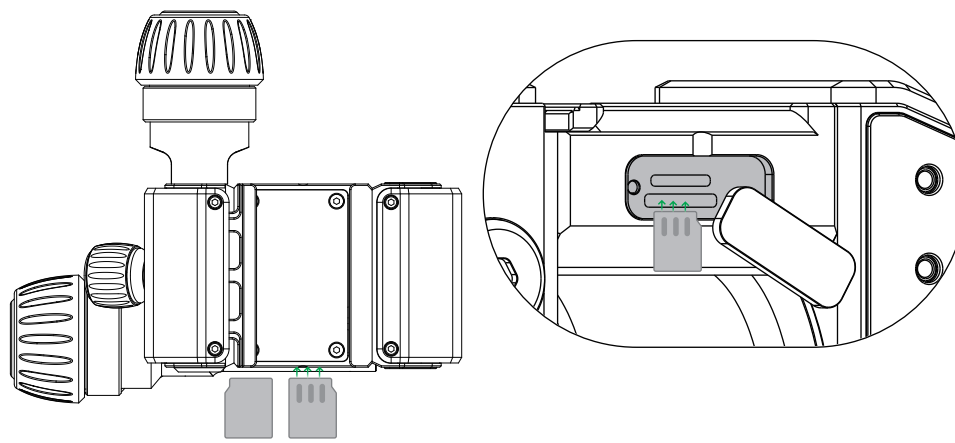● **The battery is not fully charged at the time of purchase.** Charge the product before use.

Inserting/Removing MicroSD Card

## Insertion

1. Open The 【Card Cover】
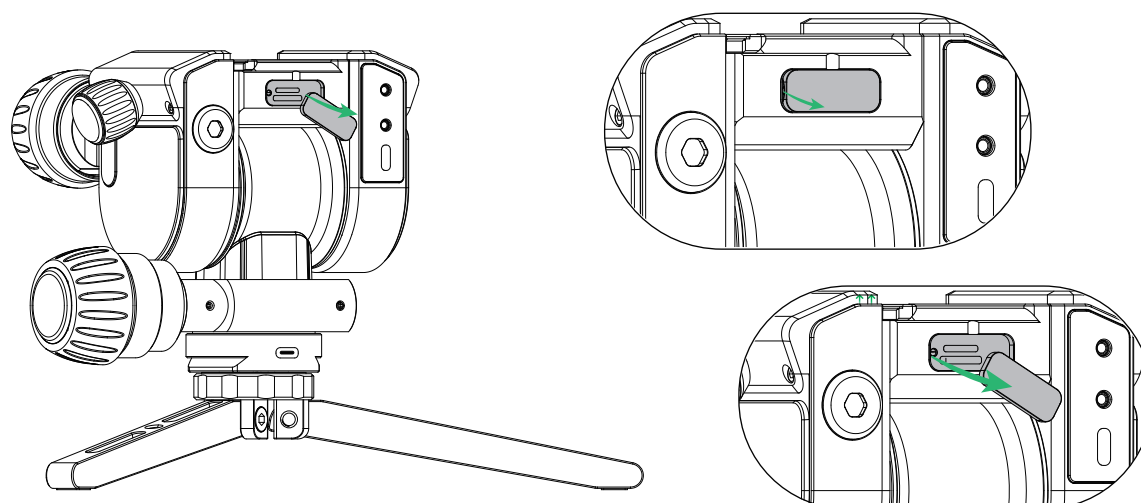
2. Insert The Card

- The lower card slot is the [SD Card Slot].
- Before inserting the SD card, make sure that the metal contacts are facing upwards and that the end with the metal contacts is pointing towards the product body.
- Insert the card into the [SD Card Slot] in the correct orientation until it clicks an locks into place.
- If the SD card is inserted in the wrong orientation, the product may be dama
- Please do not force the card into the [SD Card Slot], it may cause damage to slot.
- Camera shooting and firmware updates are not supported when no SD card available.
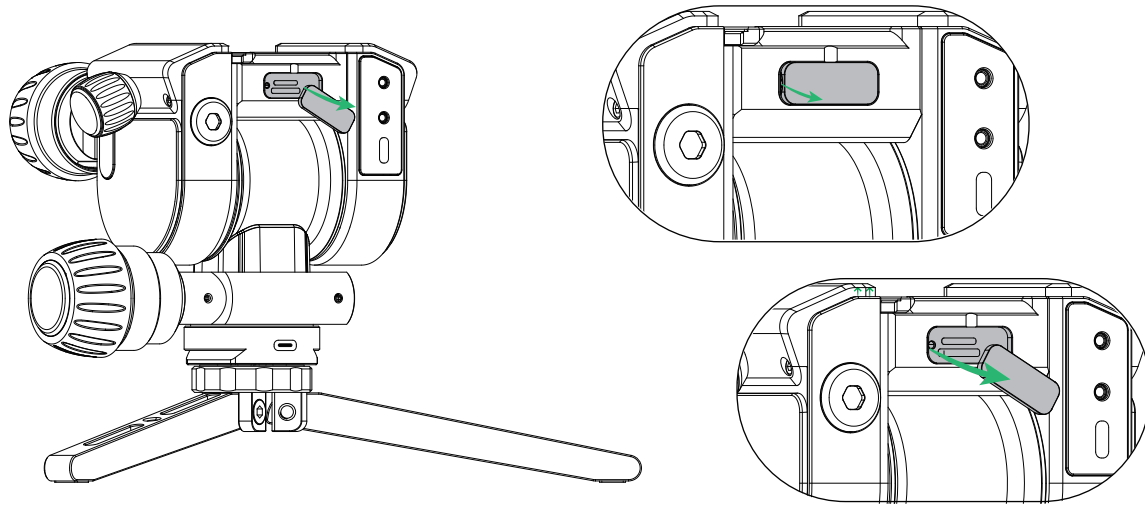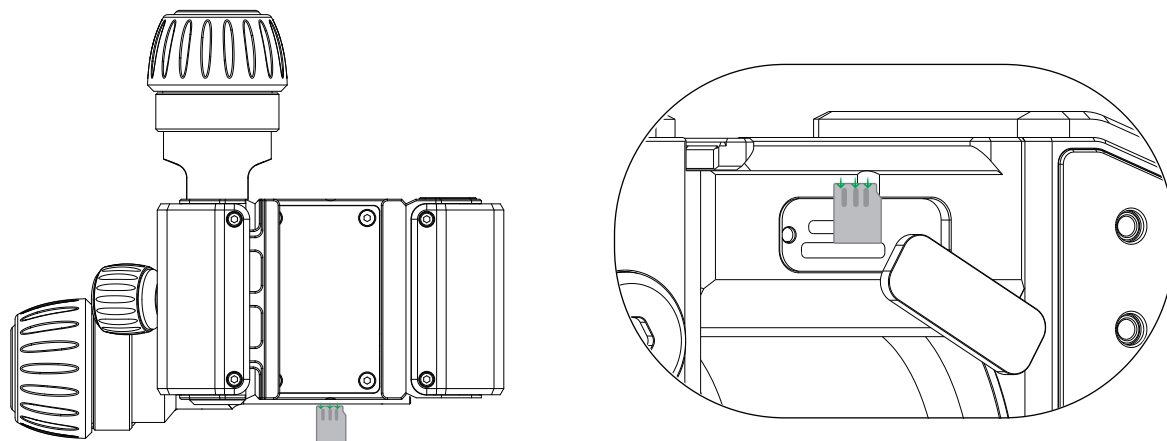
3. Close The 【Card Cover】
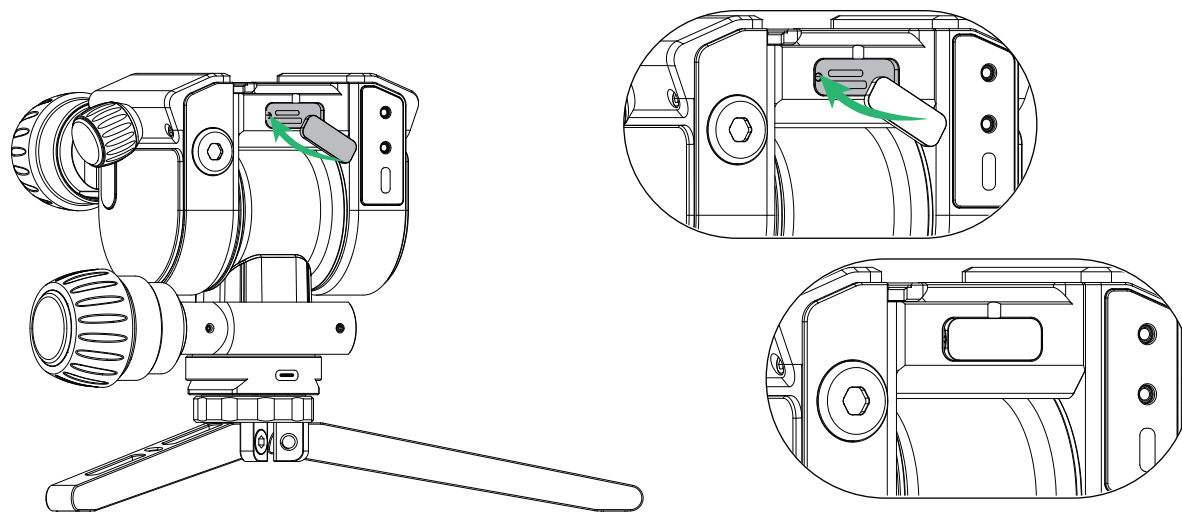
Formatting

If the card is new or was previously formatted (initialized) by another device or computer, format the card with this device.

# Removal

1.Open The [Card Cover]

2.Remove The Card

- Gently press the card in, then release it to eject it.
- Pull the card straight out, then close the cover.

⚠ Caution
Turn the device off for a period of time before removing the SD card.
Removing the SD card immediately after shooting may cause damage
to the SD card. Please be careful when removing the SD card.
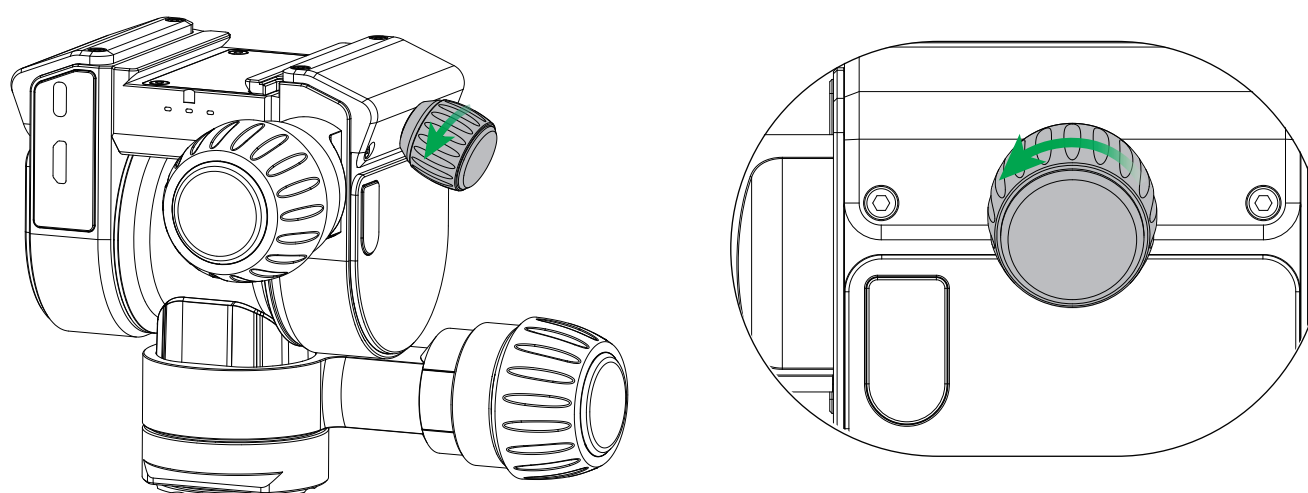
Attach To A Tripod

Align the bottom [3/8" screw hole] with the top thread of the tripod and twist it tightly.
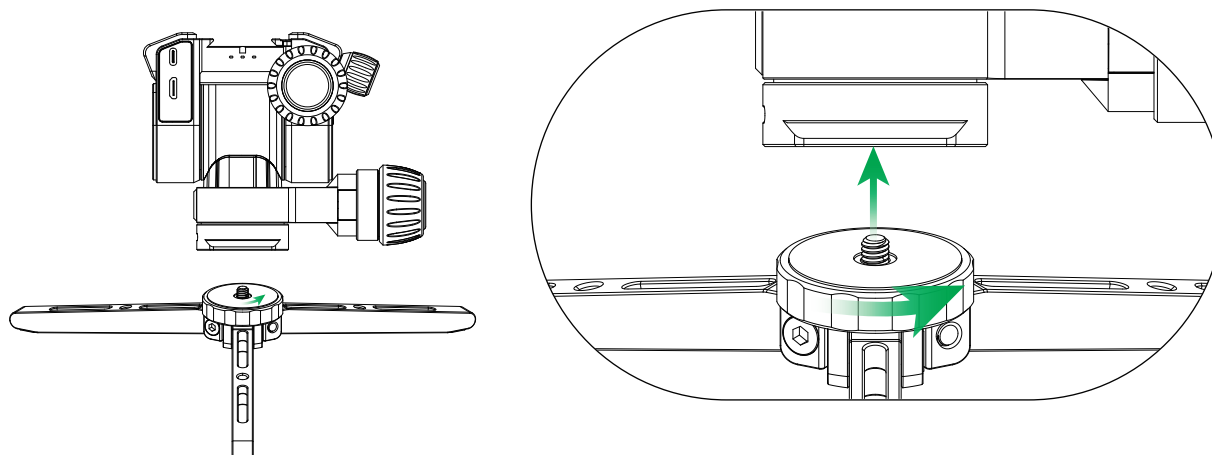
- If the top screw of the tripod is 1/4", you can use the included 3/8" to 1/4" adapter to attach to the 1/4" screw of the tripod and then screw it to the device.
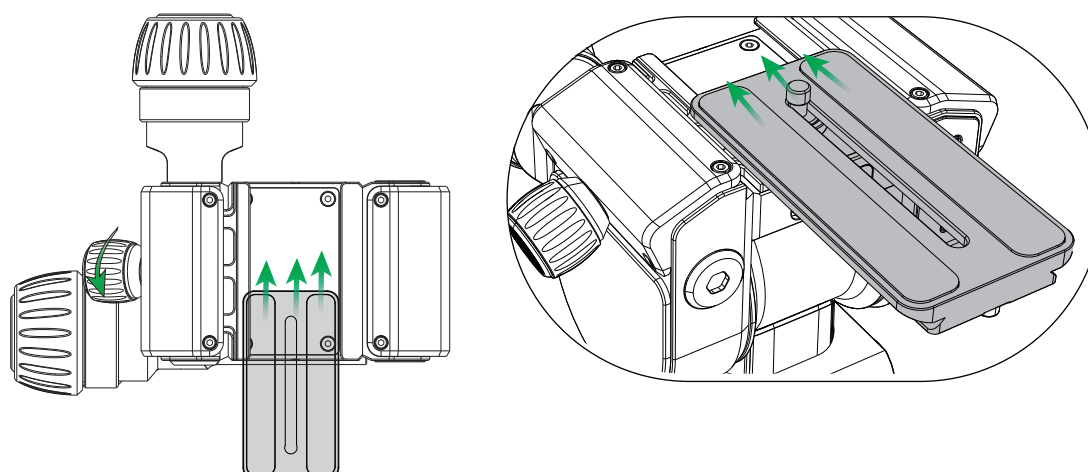
Install A Camera

1.Twist And Loosen The Clamp

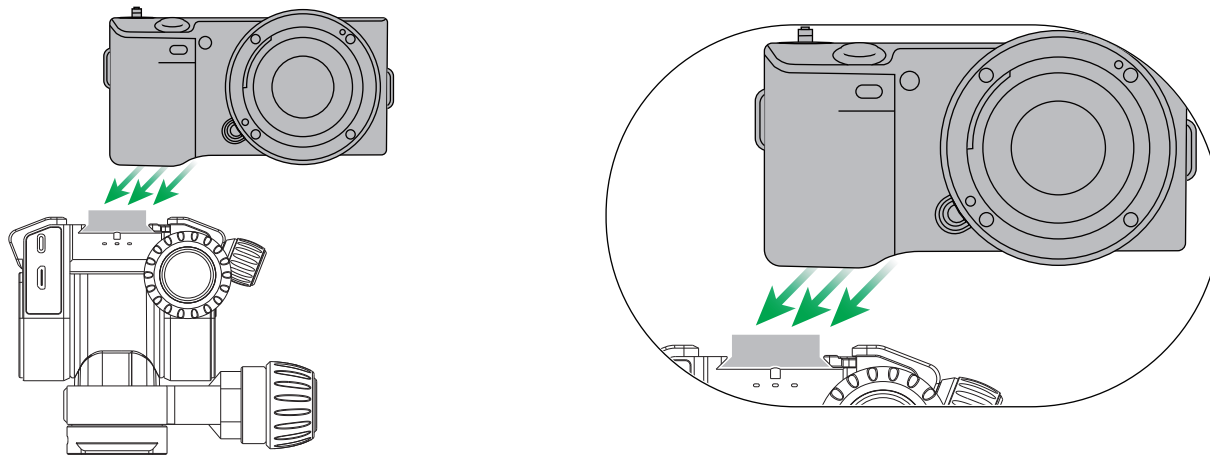- Turn to loosen the [Lock Knob] on the side of the equipment [Clamp].

2.Mount The Quick Release Plate

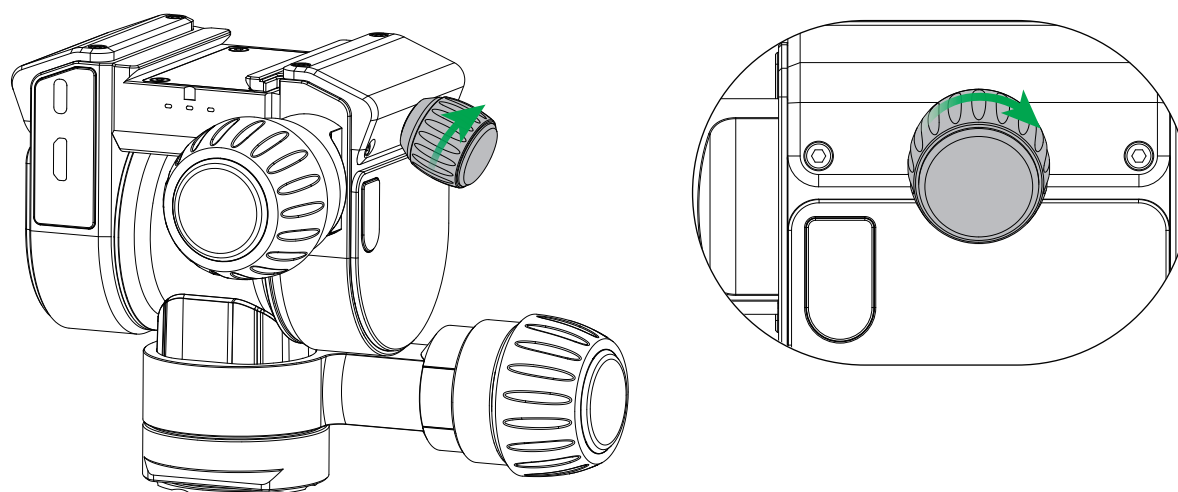- Attach the quick release plate to a camera that will be used.

3.Install The Camera

- Snap the quick release plate with the camera into the [Clamp] of the product.
- Align the quick release plate with the rails of the [Clamp] to slide easily into place.
- If the sliding process does not go smoothly, please try to loosen the [Clamp] first and try again.

4. Lock Quick-Release Plate

- After the quick release plate is slid into the required position, rotate the [Lock Knob] on the side of the product to fix the quick release plate.
- Continue rotating and tightening until you can no longer turn the [Lock Knob].

⚠ Caution

Before you take your hand off the camera, give it a firm tug in every direction to make sure it's not moving. If you can still move it side to side, you need to tighten the [Clamp] even further. If the base plate comes out completely, try again and make sure that both sides of your base plate are in position with the [Clamp].

Connect To The Camera （Using Canon EOS R5 As An Example）

Once the camera is attached to the Polaris, plug the Type-C camera control cable that comes with the Polaris into the camera's digital teminal port and the Polaris's [USB-C] port.
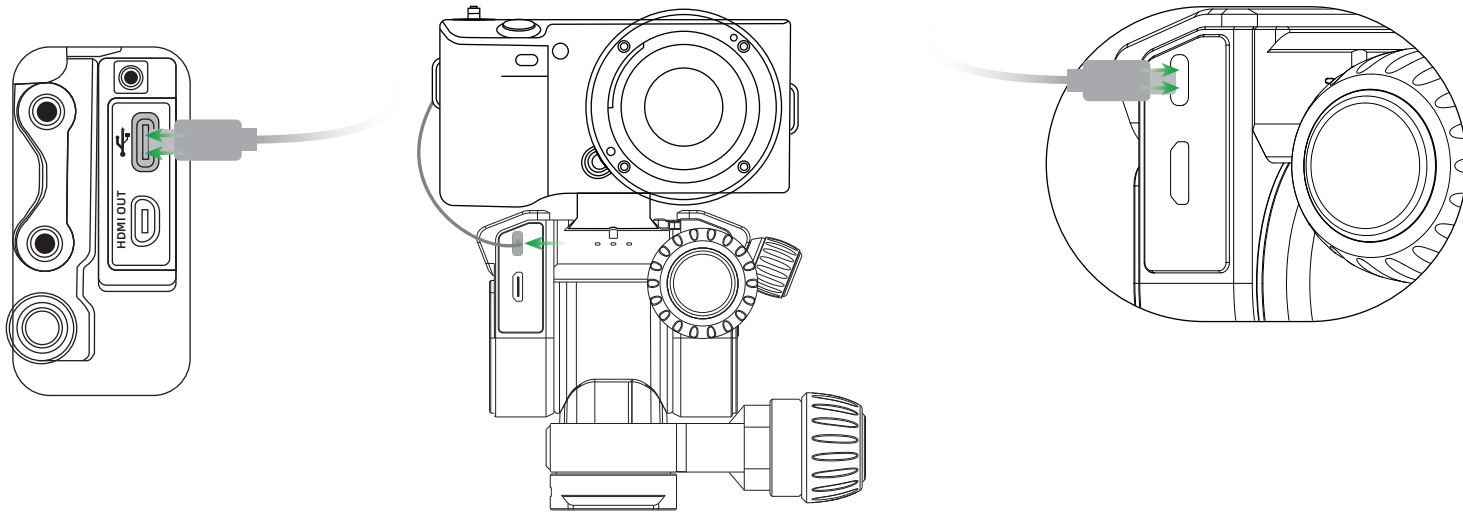
- Select the proper camera control cable according to the brand/model of the camera being used.

- Plugging into the wrong port may cause the imager or product to malfunction.

- Using the wrong camera control cable may result in damage to the camera or product ports.

> ⚠ **Caution**
>
> ● No memory card in the camera may result in the captured photos not being saved.
> ● It is recommended that you select the camera's mode dial to M shooting mode before use.

Power On/Off

Power On

In the off state, double press and hold the [Power Button], and release it after hearing "beep beep beep" three times to turn on the device.

Power   Wlan
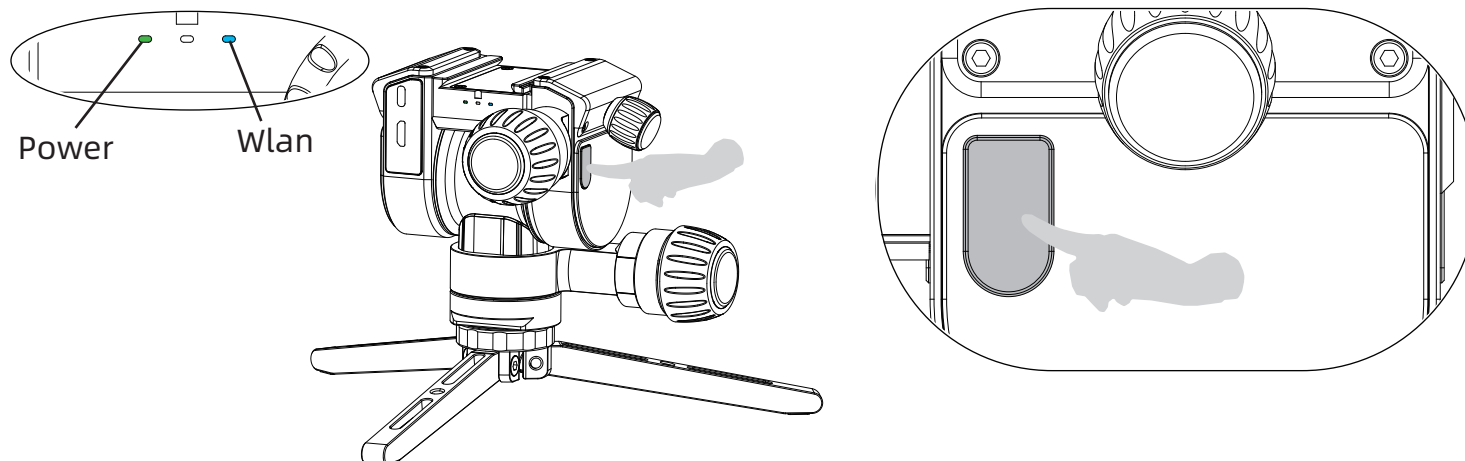
● If the device is the Wi-Fi version, the power indicator (green) and Wi-Fi indicatortz (blue) are always on after successful power on.

Power Off

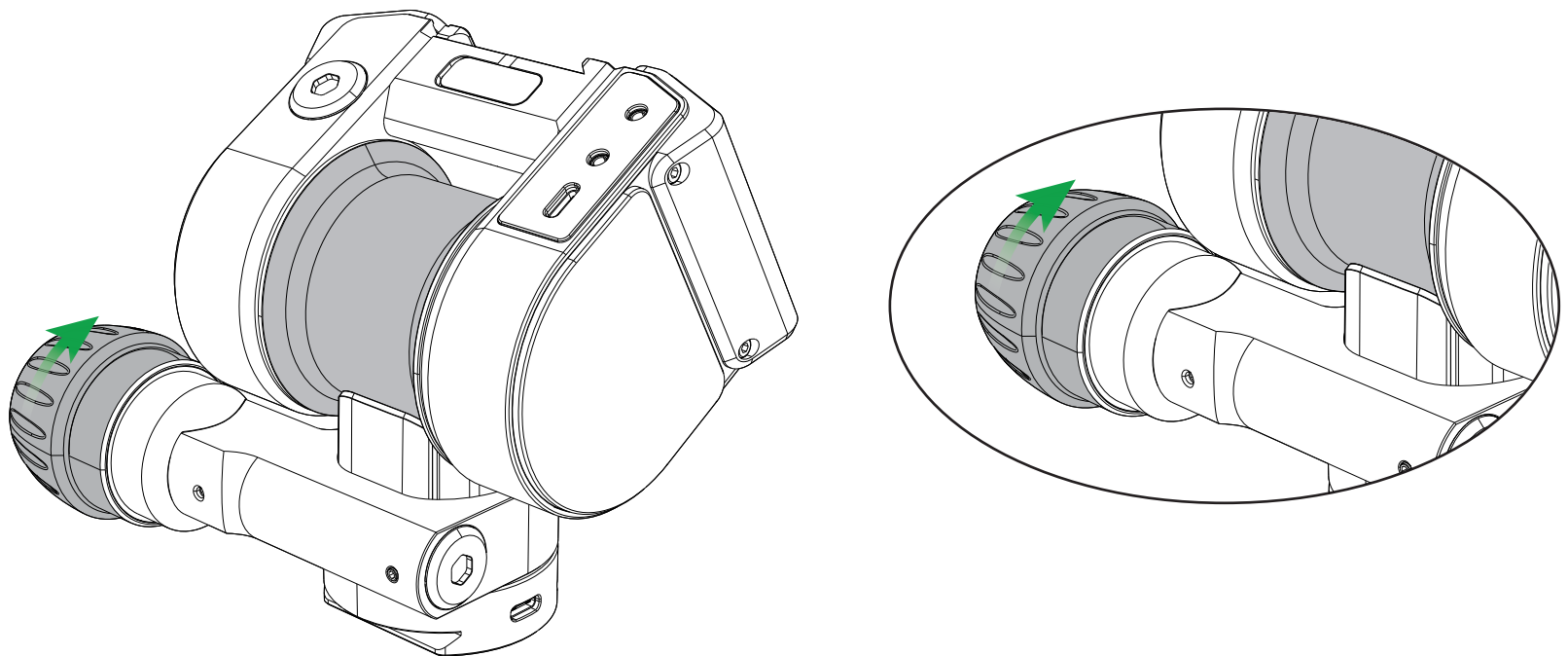In the power-on state, long-press the [Power Button], hear a "beep" and let go to turn off the device.
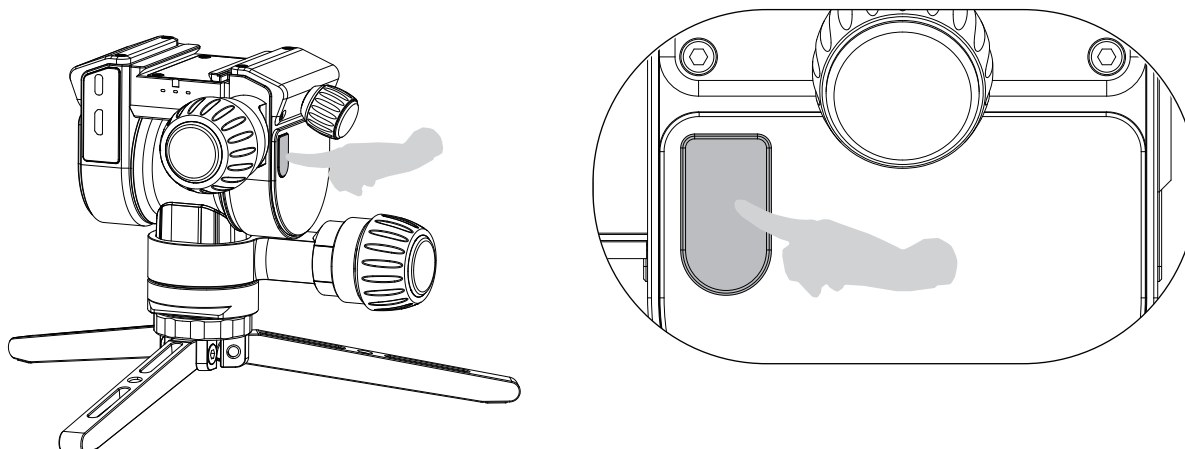
● Once the power is successfully shut down, all the lights turn off.

Storage/Expanding

Storage

When the device is in the off state, long press the [power button], hear a "beep" and then release, the device will start to move down the Pitch Axis until it returns to the storage state.


⚠ Caution

- Do not put your hands under the tilt axis and touch the [power button] when handling the equipment as it will damage your hands or fingers.
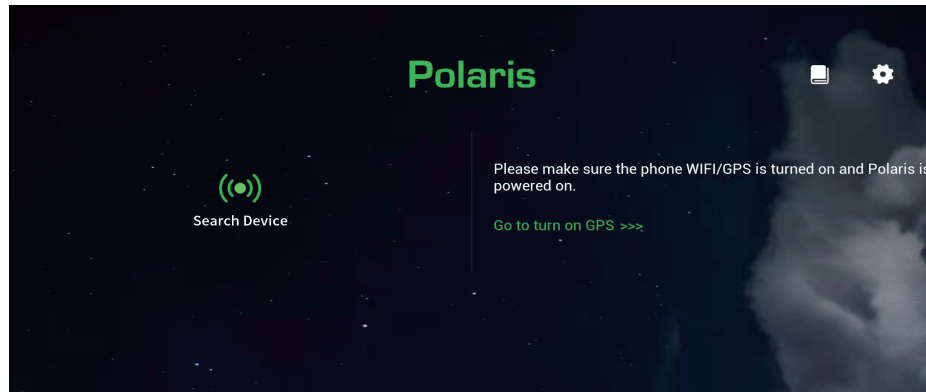
Expanding

When the device is in the storage state, short press and then long press the [power button], until you hear "beep beep beep" three times and then let go, the device is turned on, the pitch axis will automatically move up until it reaches the unfolded state.
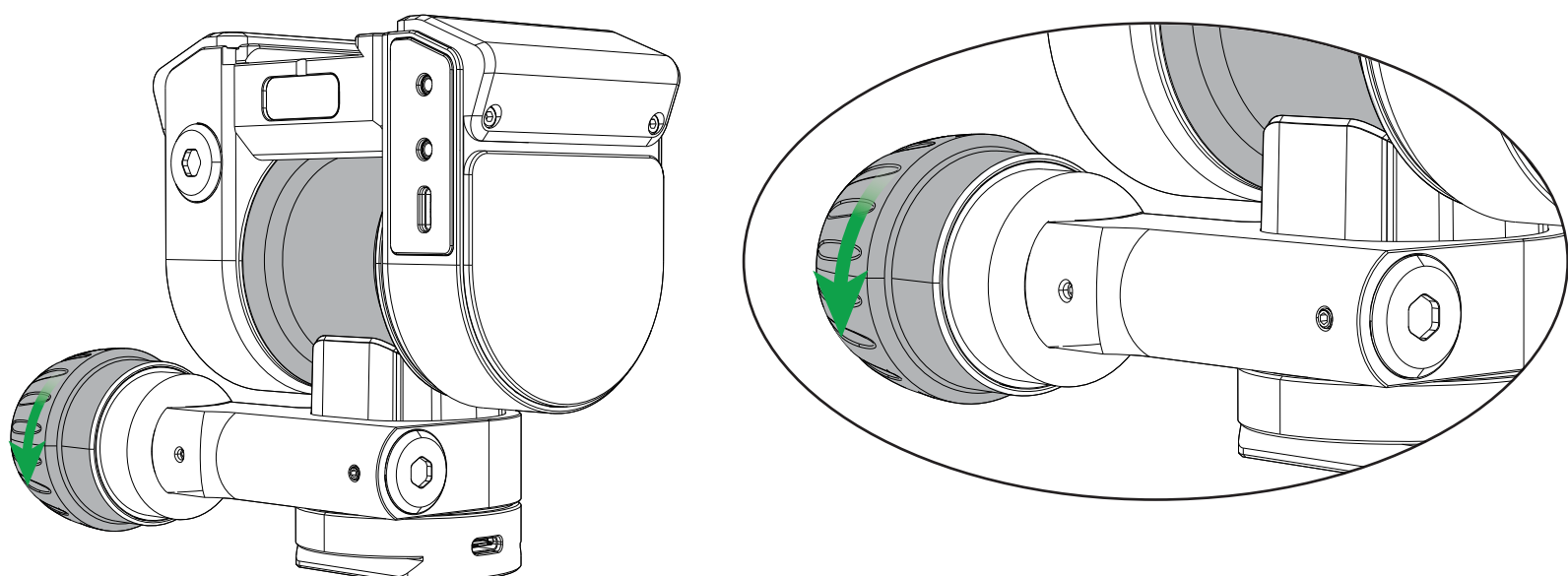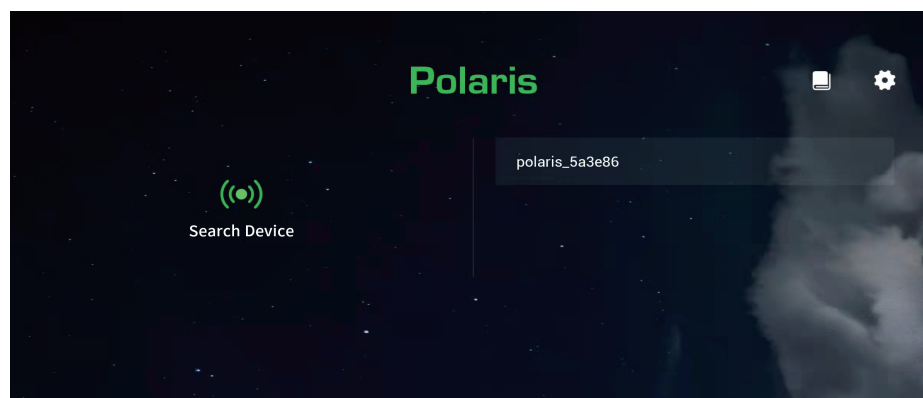
Polaris App

Connec App

1. Launch Polaris App

- For the iOS system, you need to turn on the Bluetooth and Wi-Fi of your phone in advance.

- For the Android system, you need to turn on the Bluetooth, Wi-Fi,and GPS of your phone in advance.

2.Connect Devices

- Select the Polaris Wi-Fi name currently in use (the product Wi-Fi name starting withpolaris) and click "Join" to start connecting to the Polaris device.
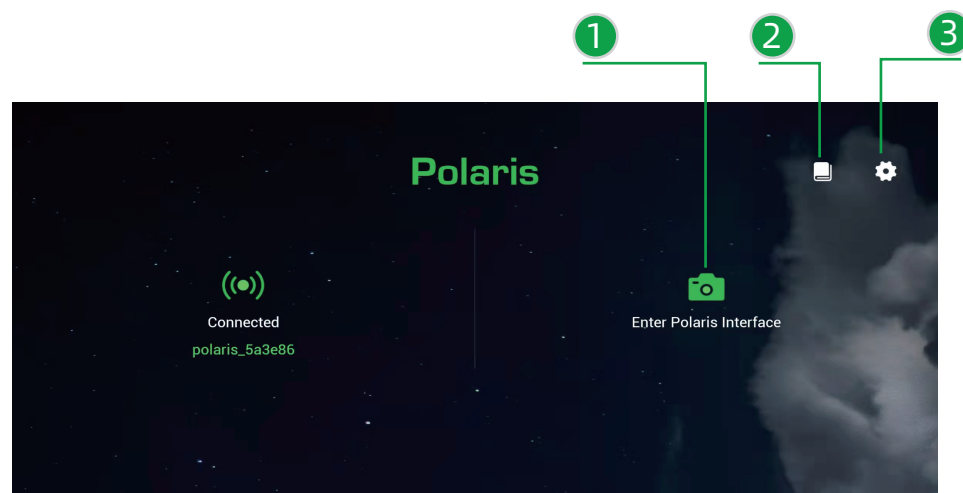
3.Connection Success

- The word "Connected" and the device's Wi-Fi name will be displayed on the left side of the interface after successful connection.

In App

Home Screen

 1 Enter Polaris Interface： Tab to enter the camera live preview and shooting interface.

 2 User Manual： Tap to view Polaris User Manual.

 3 Settings： Tap to enter Settings page for card formatting, firmware upgrade and create/change device password.
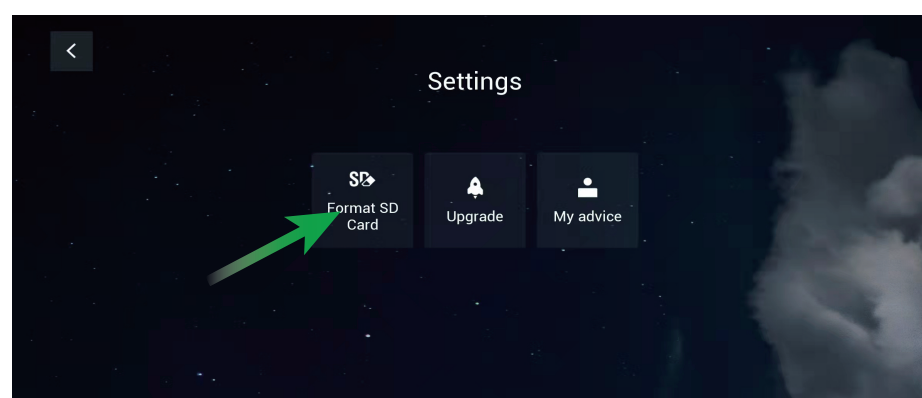
Formatting

If the card is new or was previously formatted (initialized) by another device or computer, format the card with this device.
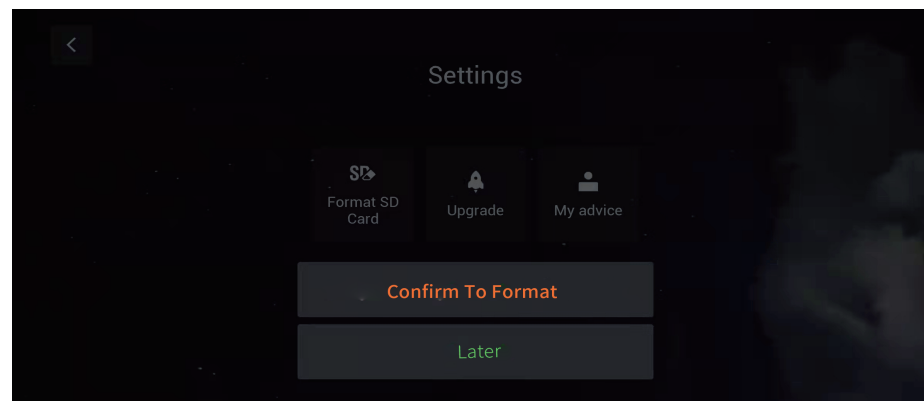
> ⚠ **Caution**
>
> When formatting the SD card, all images and data on the SD card will be deleted. As even the protected images will be deleted, it is important to make sure that there are no images in them that need to be kept.
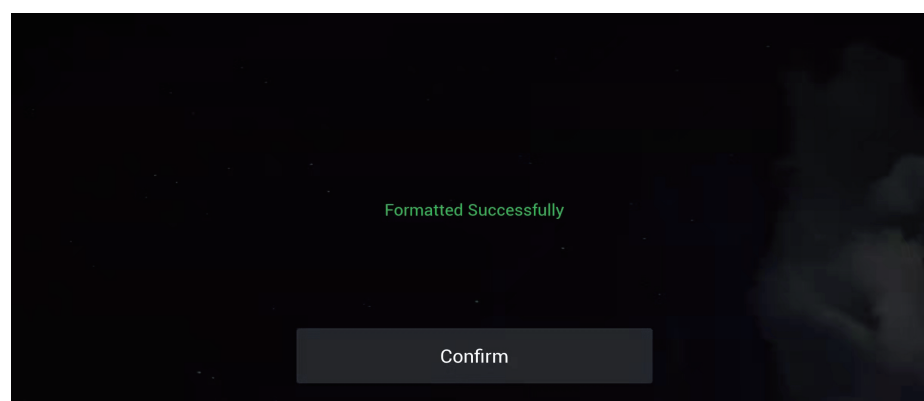
1. Enter Settings Page

● Tap the [Settings] icon from the home page to enter the settings screen.

2. Format The SD Card

● Select [Confirm To Format].

3. Formatted Successfully

● Click the [Confirm] button after successful formatting to return to the previous step.

💡 Conditions Requiring Card Formatting

● The card is new.
● The card was formatted by a different device or a computer.
● The card is full of images or data.
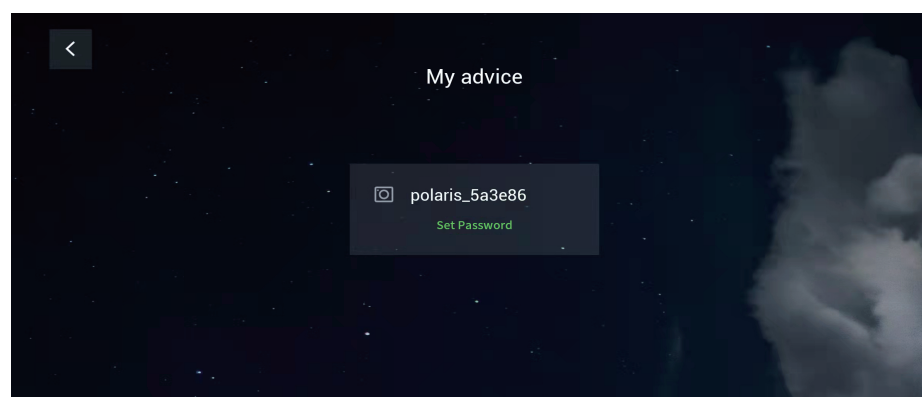● A card-related error is displayed.

⚠ Caution

Formatting or erasing data on a card does not completely erase the data. Be aware of this when selling or discarding the card. When disposing of cards, take steps to protect personal information.
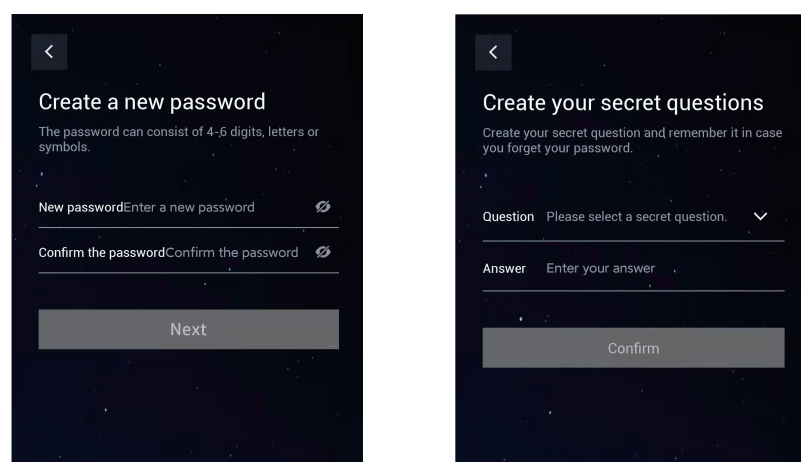
My Device

1.My Device

- Go to My Devices to view the device name and create/change the password (werecommendcreating a device login password to prevent unauthorized users from using your device).

2.Set Security Question

- To create a password for the first time, you need to set the security question first.
- Select the security question and enter the corresponding answer.
- To avoid forgetting, please try to fill in the real information when filling in the answers.

⚠ Caution

Do remember the security question you have set. When you forget your password, you will need to answer the password question to reset your password.
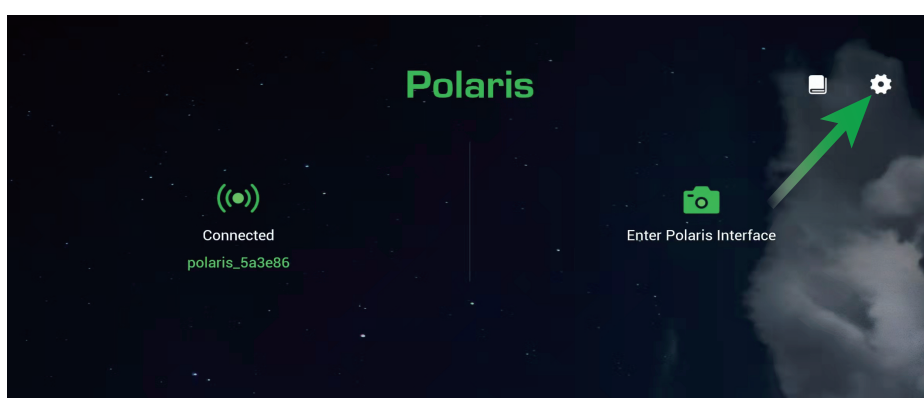
Firmware Upgrade

Polaris devices are upgraded via Polaris App. If a message indicates that an update is available,click [Upgrade Device] for immediate update. Or, you can click [Later] and install it yourself later.　(For upgrading the firmware via the app, you need to make sure that your phone's cellular network and Wi-Fi are turned on and that you can access the Internet.)
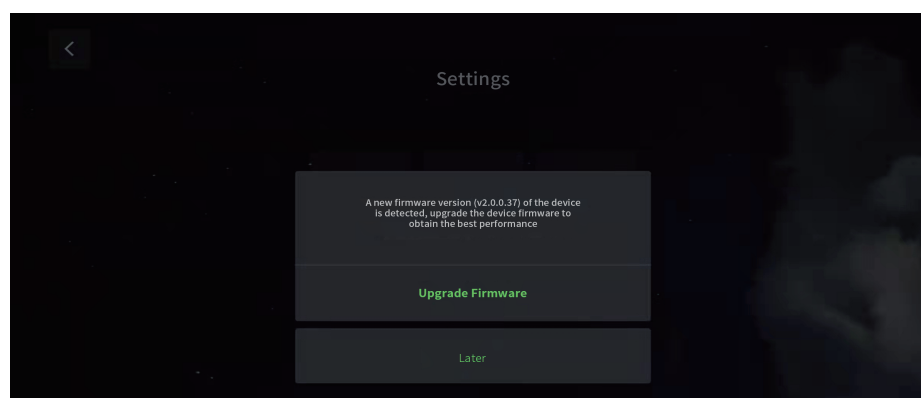
Manual Firmware Upgrade :

1.Enter Settings Page

● Click the ⚙ icon in the home screen to enter the settings page.

2. Upgrade Firmware

● After clicking the 🚀 icon, select [Upgrade Firmware] to upgrade the firmware.

⚠ Caution
- To upgrade the firmware via the app make sure that the cellular network using the phone is turned on and that Internet access is available.
- Turn on your phone's Wi-Fi.

Camera View

The camera view display may differ depending on the shooting mode. This display is forreference only.

1.Shutter Speed

⬤ :Tab and slide **S** to set the camera shutter speed manually.

⬤ On the far left of the shutter speed slider, you can enable the Bulb timer ⬤ Bulb and set the exposure time.

2.Aperture Value

⬤ :Tab and slide **F** to set the camera aperture value manually.

3.Exposure Value

⬤ :Tap and slide **EV** to manually set the camera exposure value.

4.ISO Speed

ISO :Tap and slide **IOS** Manually set the camera ISO value.

5.White Balance

WB :Tap and slide **WB** to manually set the camera White balance.

6.Manual Focus

MF :Tab for manual focus.

🌿 :Indicates that the focus area is based on the nearest subject.

⬤ Matching Range

◀ :Small

◀◀ :Medium

◀◀◀ :Large

[icon] :Indicates that the focus area is based on the farthest subject.

● Matching Range

[icon] :Small

[icon] :Medium

[icon] :Large

7.Auto Focus

AF :Tap to trigger autofocus. (If the lens has both AF and MF modes, set it to AF/MF for autofocus depending on the lens model.)

8.Shooting Mode

[icon] :Shooting modes such as Photo, Panorama, Time-lapse, Path-lapse, and Focus Stack.

9.Shooting Button

[icon] :Press and hold and swipe up to start or cancel the recording.

10.Media Gallery

[icon] :Tap Media Library to view captured photos or videos.

11.Home

[icon] :Tap to return to the home page.

12.Virtual Joystick: Pan-axis Control

[icon] :Slide left and right to control the pan-axis movement. Double click the center of the joystick to control the pan-axis back to the positive.

[icon] :Tap the virtual joystick to enter the shooting angle fine-tuning mode.

13.Virtual Joystick: Pitch-axis Control

[icon] :Slide up and down to control the pitch axis movement, double click the center of the joystick to control the pitch axis back to the positive.

[icon] :Tab the virtual joystick to enter the shooting angle fine-tuning mode.

14.Memory Card Information

[icon] :Displays the memory card capacity information.

15.Battery Level

[icon] :Plays the Polaris battery level.

Shooting Mode

Shooting parameter settings can be set in different shooting modes.

Shooting Mode	Parameter
Photo	Photo
Panorama	Landscape：Rotation，Shots；Portrait：Rotation，Shots
Starry Sky	Star Tracking, Time Interval, Shots. (If using the [Star Tracking] must be used in conjunction with the Astro Kit.)
Timelapse	Time Interval, Shots, Frame Rate
Path-lapse	Time Interval, Shots, Frame Rate
Focus Stack	Focus Distance, Shots (Focus Stacking is only available with cameras and lenses that support focus.)
Sun	Reservation：Start from, End at, Time Interval

⚠ **Caution**

Please use the camera to set the desired photo format, frame size and photo qualitybeforeshooting. If you need to use the [Focus Stack] shooting mode, please make sure that the camera lens supports focus first.

Specifications

Model	BR203		
Basic Info	Weight	1.5 kg/3.3 lbs	
	Dimensions	160×139×125mm	
	Max. Load	7KG	
	Pitch Mechanical Range	80°、-80°	
	Pan Mechanical Range	Unlimted	
	Max. Rotation Speed	7°/s	
	Angle Accuracy	0.0025°	
	Torsion	70KG f*cm	
Data Interfaces	Camera Control Interface	Type-C	
	Multi-functional Expansion Interface	Mini HDMI	
	Shutter Interface	2.5 mm	
	Camera Status Interface	2.5 mm	
Network Support	SIM Card	Nano SIM	
	4G	FDD, TDD, WCDMA	
	Bluetooth	Bluetooth 4.2	
	Wi-Fi	Wi-Fi 2.4G	
Battery Info	Capacity	11.1V 2500mAh	
	Type	Li-ion	
	Charging Time	2.5 hours (9V, 2A)	
	Support Charging Voltage	5V, 9V	
	Supports Charging Protocols	PD 3.0/Type-C V1.4	
	Charging Port	Type-C	
Hardware	TF Card	micro SD(Max. Capacity is 2TB)	
	Materials	Aluminum, Stainless Steel, PC, POM	
	Tripod Socket	3/8" Screw-in （1/4" screw-in adapter included） 、 Quick-Release interface	
	Camera Installation Method	Quick-Release plate	

*This content is subject to change.