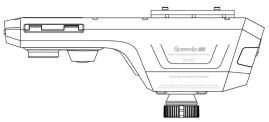
Speedip V2+ (Matrice 350 / 300 Model) User Manual

Document version: 2026.07.09 09:56

1. Speedip V2+ (Matrice 350 / 300 Model) Packing List



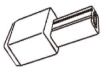
Speedip V2+ Main Unit * 1



PMMA Container * 1



PSDK Adapter * 1



OSDK Adapter * 1



Mounting Bracket * 1

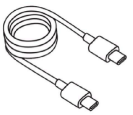
(For DJI Matrice 350/300)



Sticker * 3



XT30 Power Cable * 1



Dual USB-C Cable * 1



M3 × 6 HEX Screw * 4



M3 × 10 HEX Screw * 4



Rubber Tube &
Flow Stopper Clamp * 1



Carrying Case * 1



M3 × 12 HEX Screw * 4



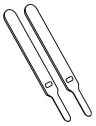
M3 HEX Screw Driver * 1



Silicone Sleeve For
Water Outlet * 2



QC Certificate &
Warranty Terms

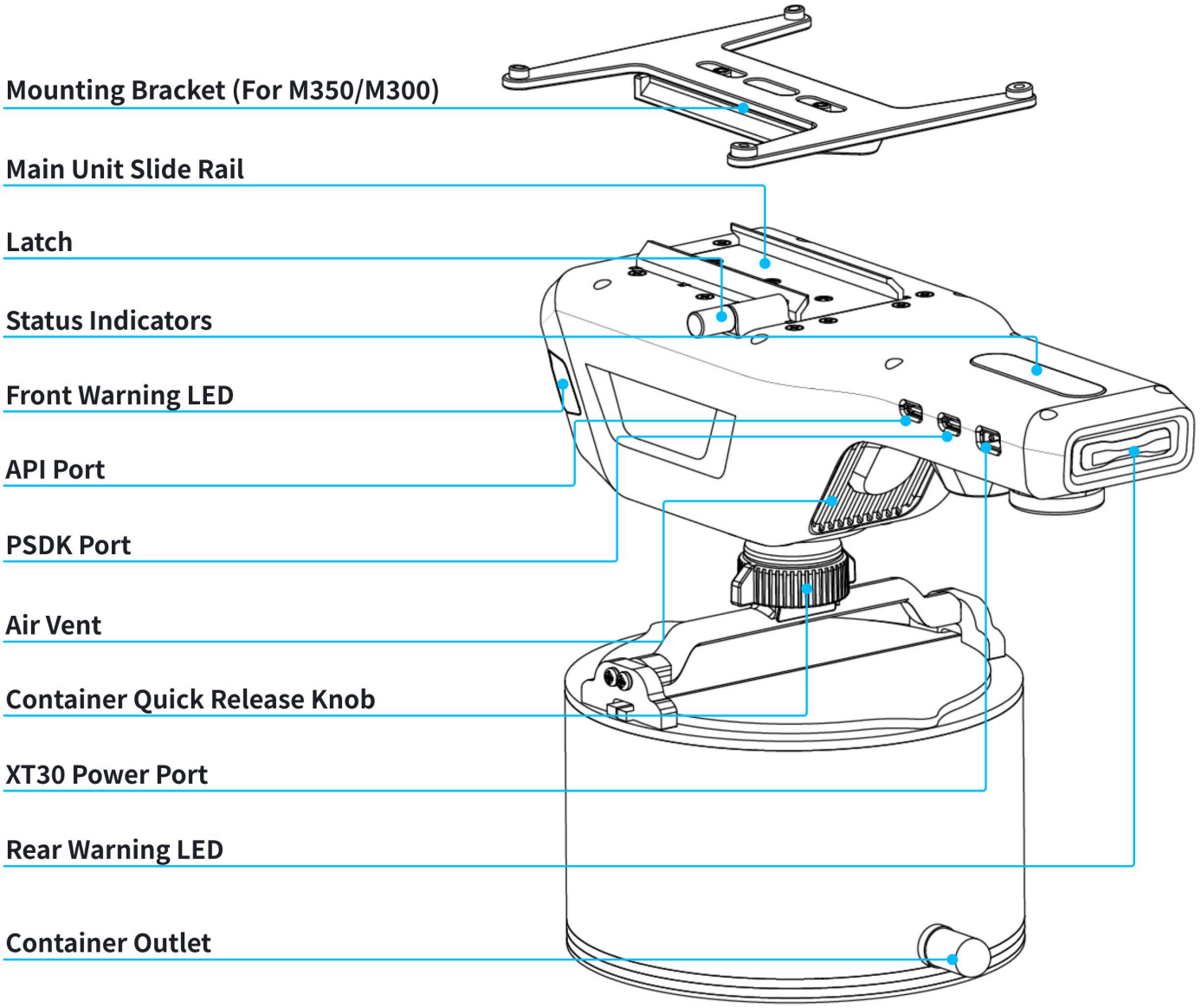


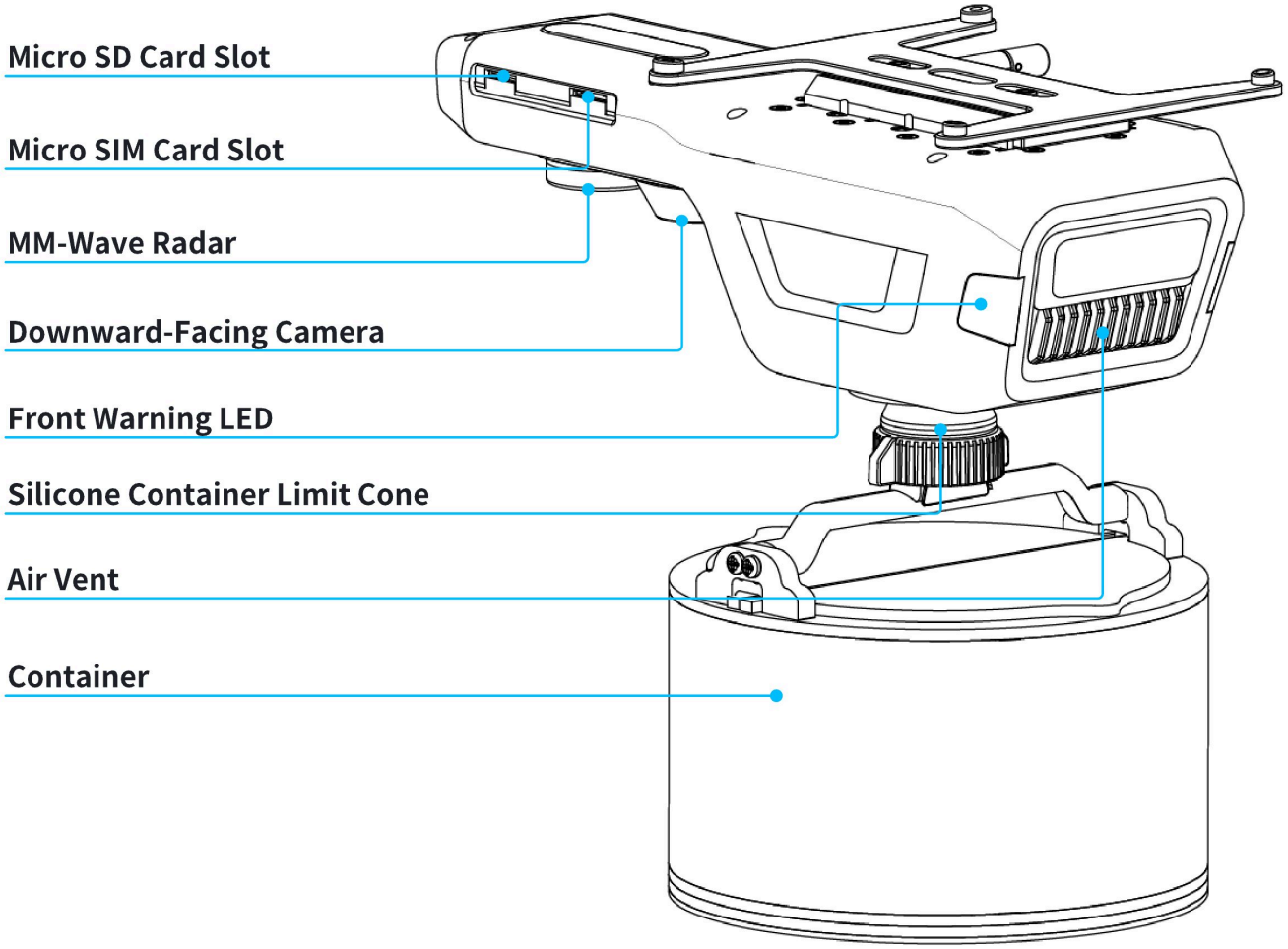
Velcro Cable Tie * 5



Cable Clip * 5

2. Speedip V2+ (Matrice 350/300 Model) Main Components

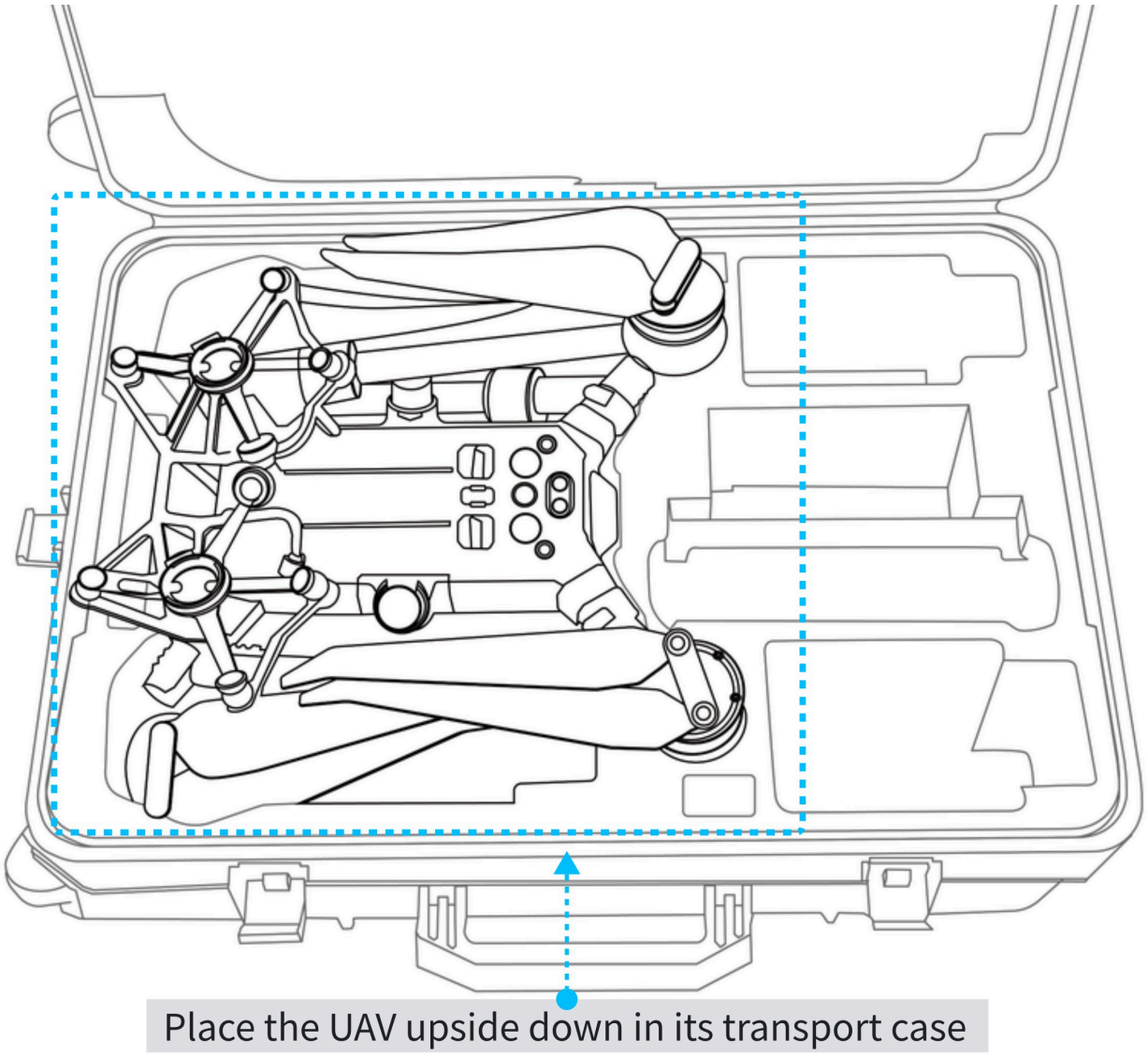




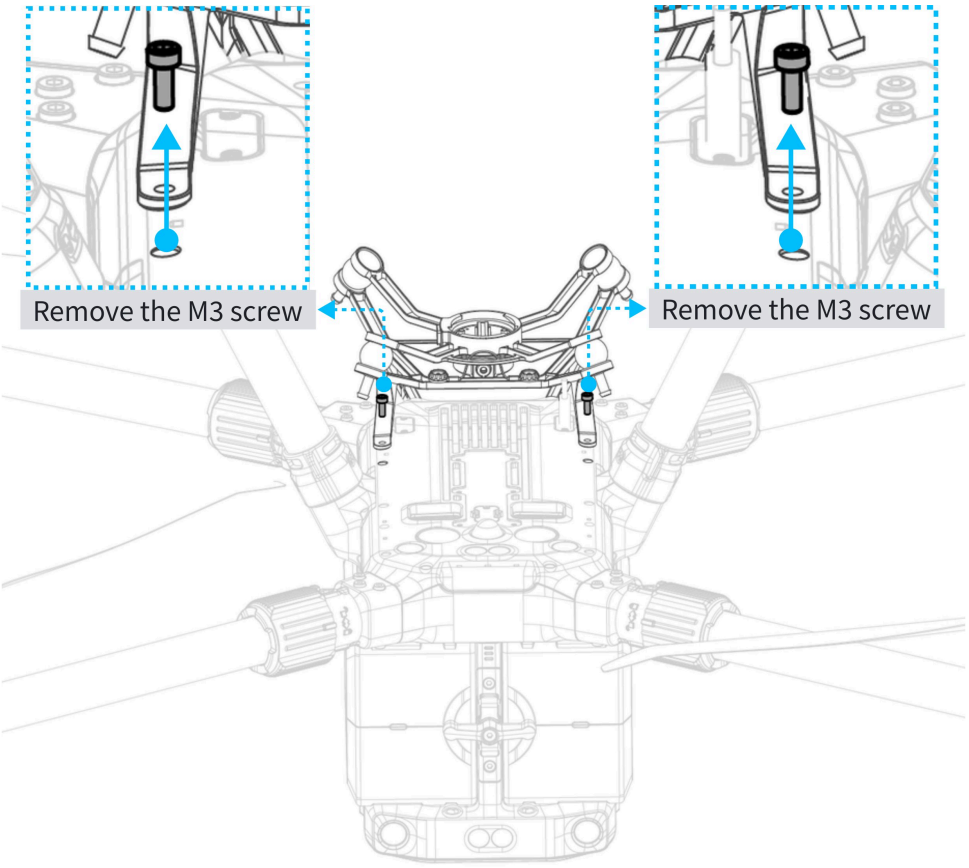
3. Mounting on DJI M350/300 RTK UAV

> ❗ *This installation guide uses the **single-gimbal mount** as an example; the **dual-gimbal mount follows the SAME procedure**.*

3.1. Place the UAV upside down in its transport case.

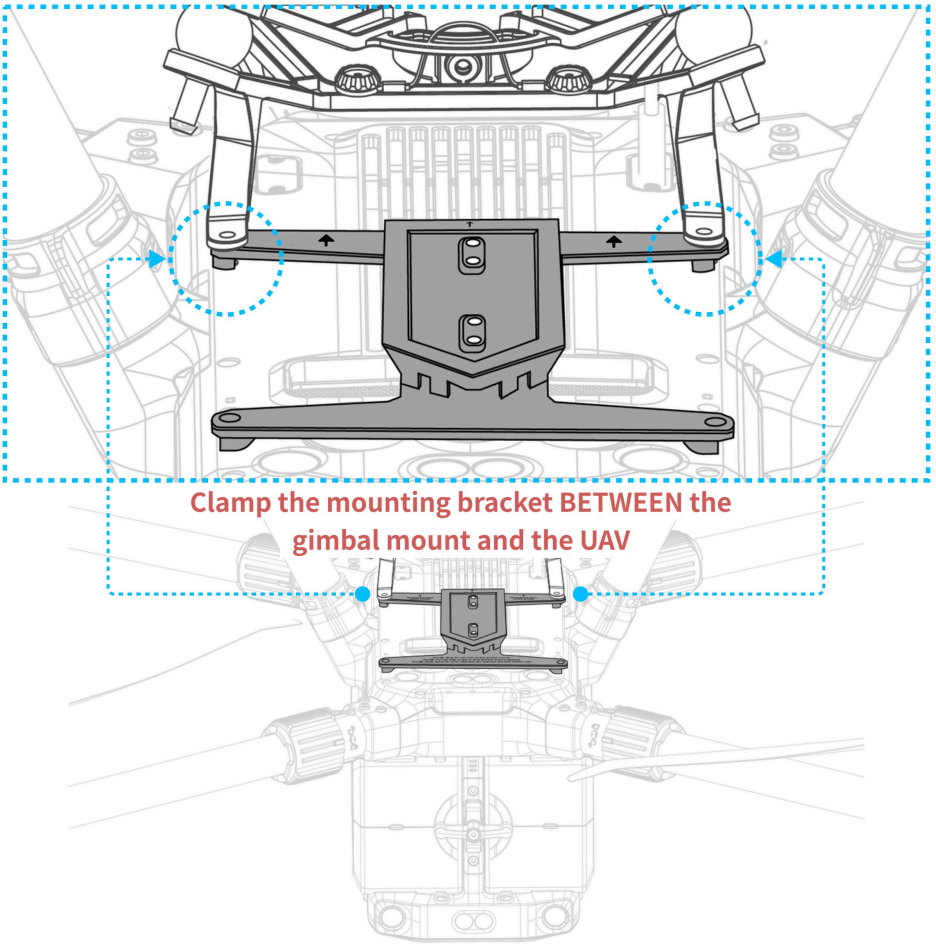


3.2. Using an M3 wrench, remove the two screws at the rear of the UAV's gimbal mount.

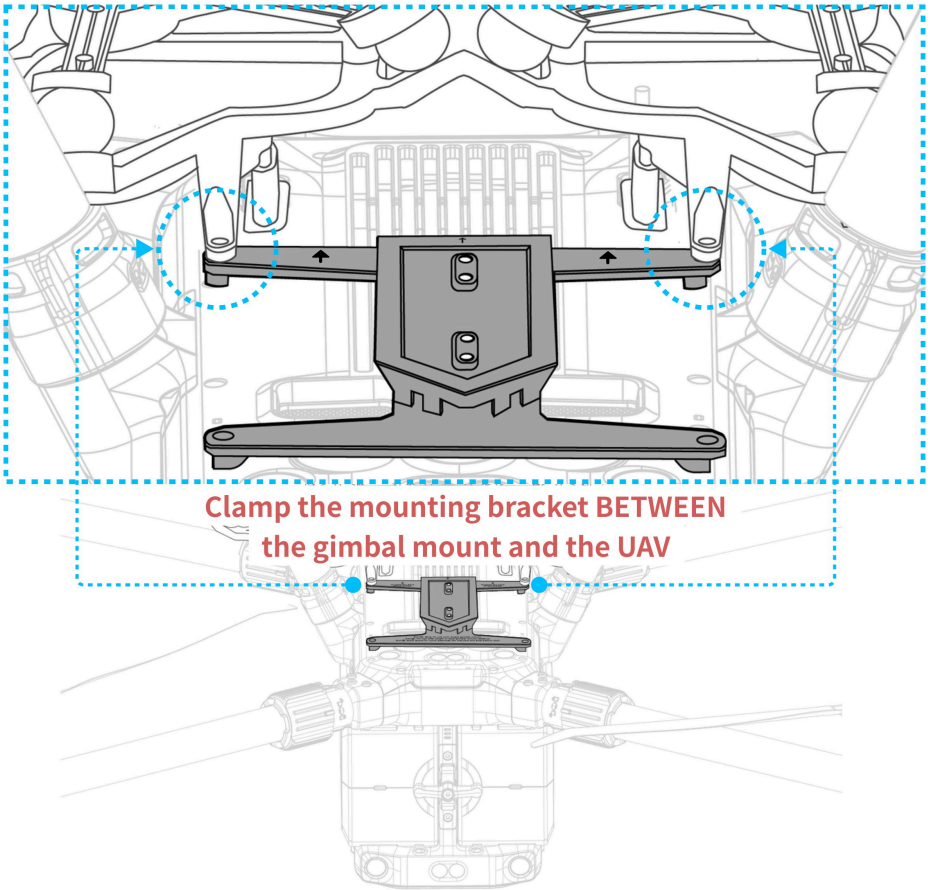


3.3. Ensure the **arrows** on the Speedip V2+ mounting bracket **point toward the front of the UAV**. Align the bracket with the screw holes and **clamp the bracket BETWEEN the gimbal mount and the UAV**.

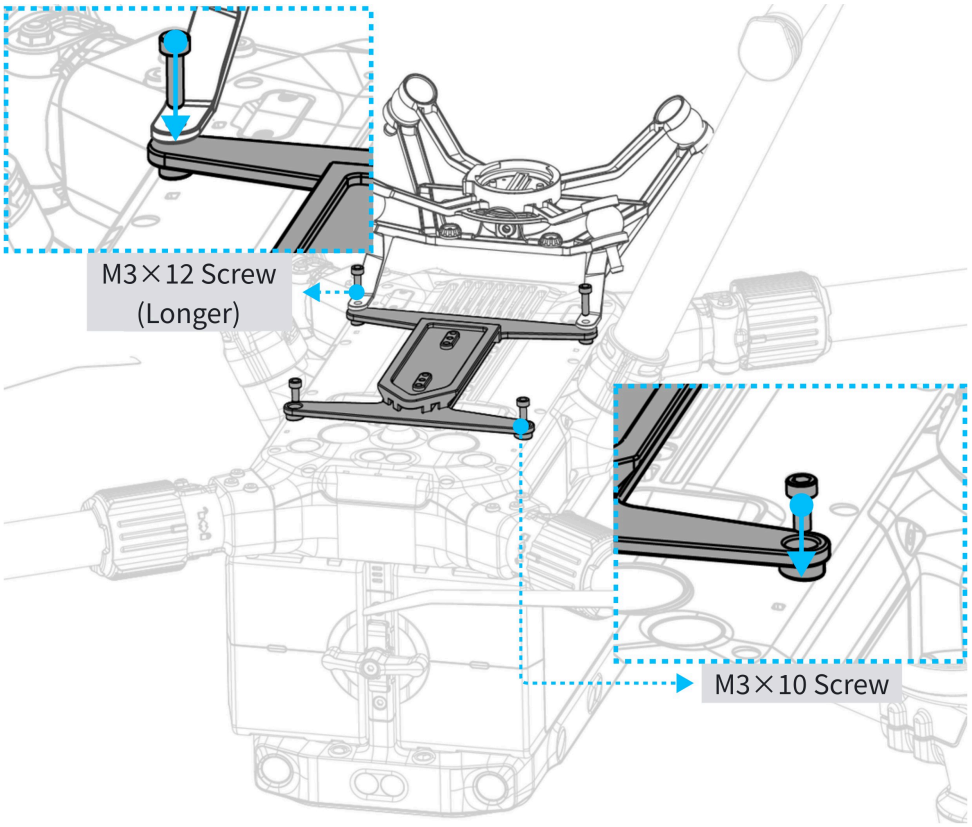
For Single-Gimbal Mount



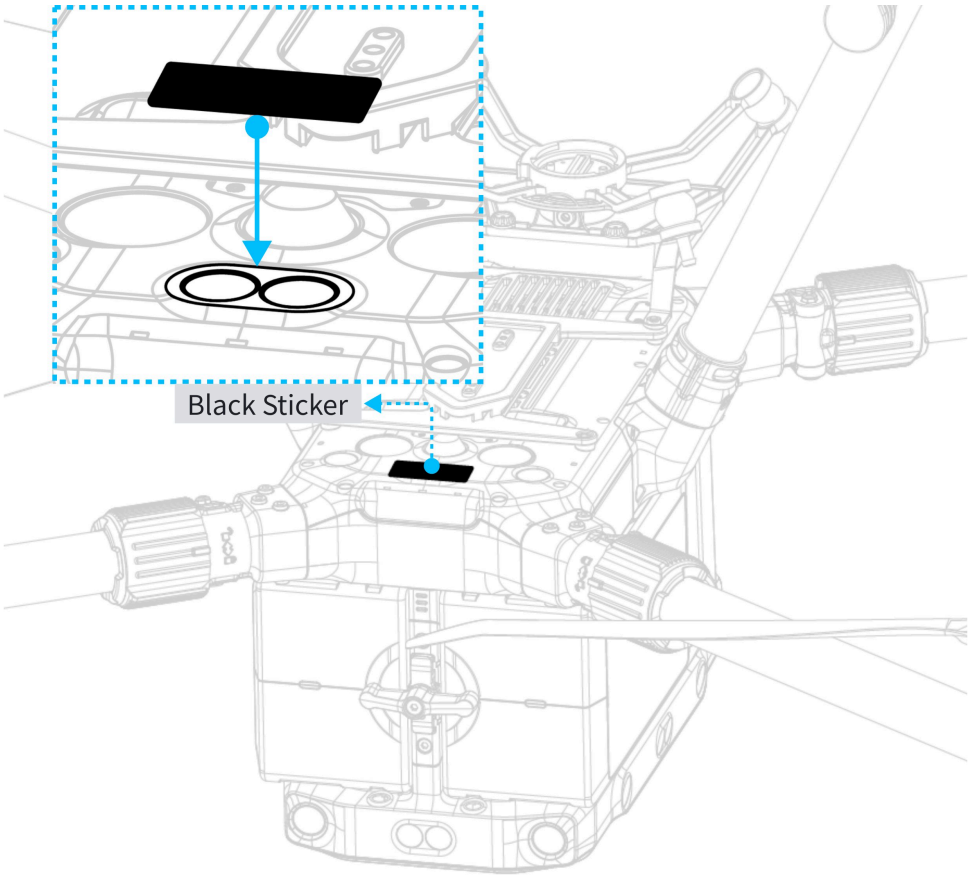
For Dual-Gimbal Mount



3.4. Secure the front of the bracket (with the gimbal bracket) using two M3 × 12 screws (longer than the two screws just removed from these two holes), and fasten the rear with two M3 × 10 screws.

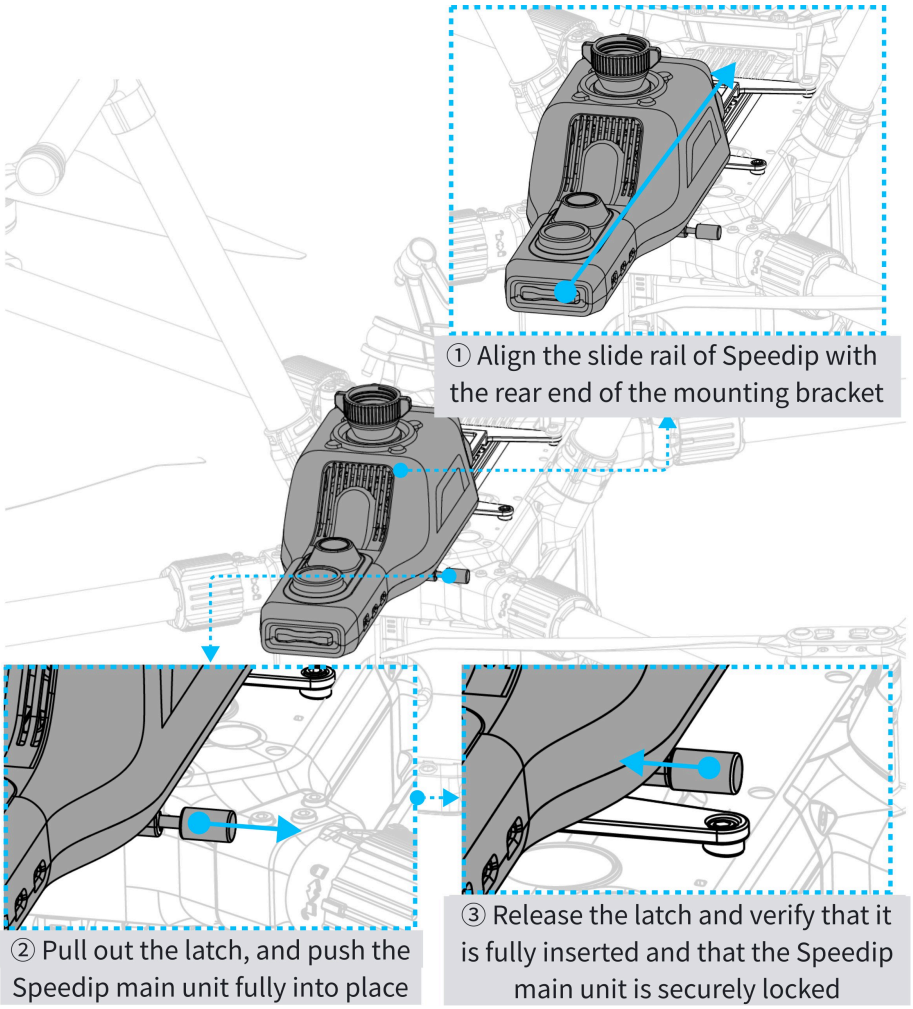


3.5. Cover the UAV's bottom infrared distance sensor with the black sticker to prevent flight errors.



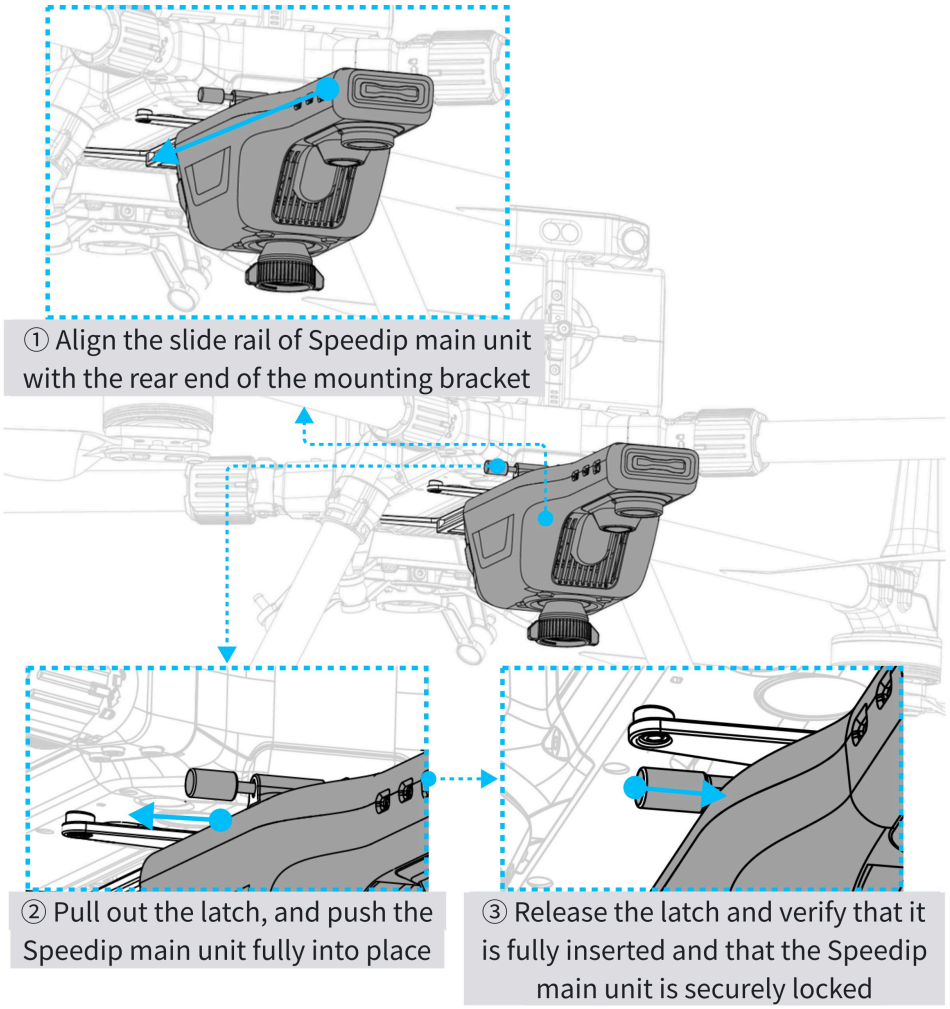
3.6. Install Speedip V2+ main unit onto the mounting bracket (choose a method below). Ensure it is fully secured.

> **Installation with the UAV Upside-Down**
>
> - Keep the UAV inverted in its transport case.
> - Align the slide rail of Speedip V2+ with the rear end of the mounting bracket, pull out the latch, and push the Speedip main unit fully into place. Release the latch and verify that it is fully inserted and that the Speedip V2+ is securely locked.
> - Once the Speedip V2+ main unit is installed, reposition the UAV upright.

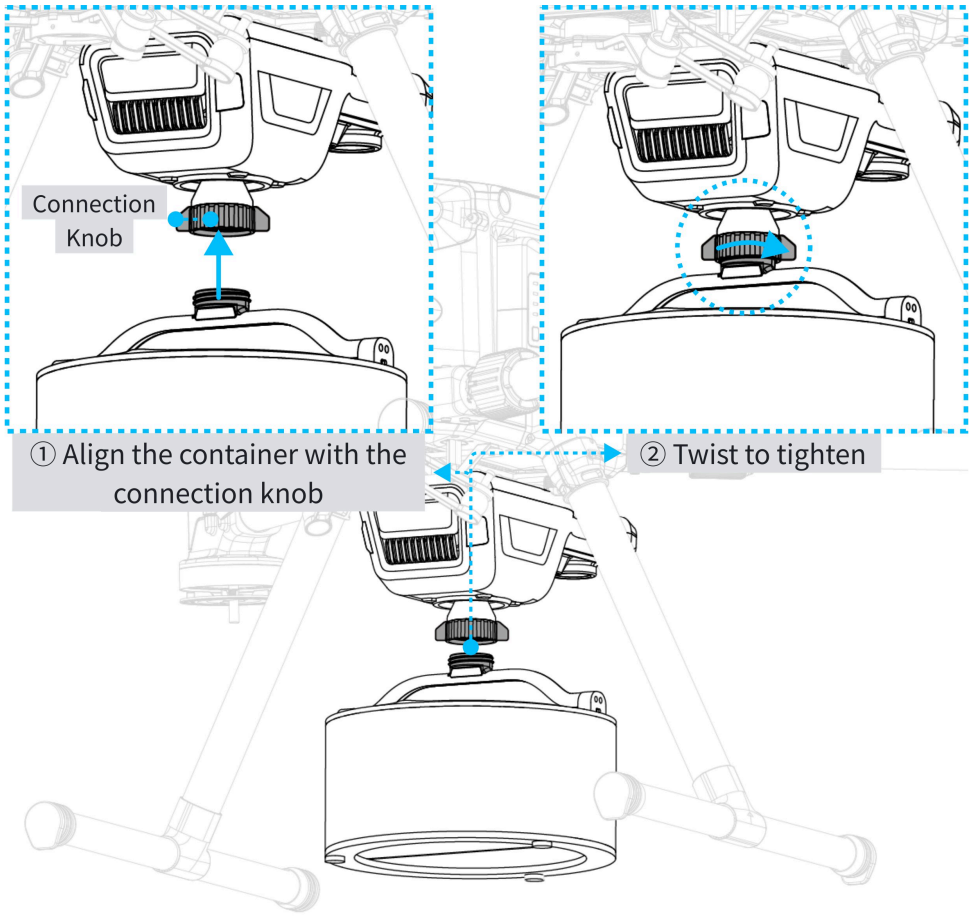


Installation with the UAV Upright

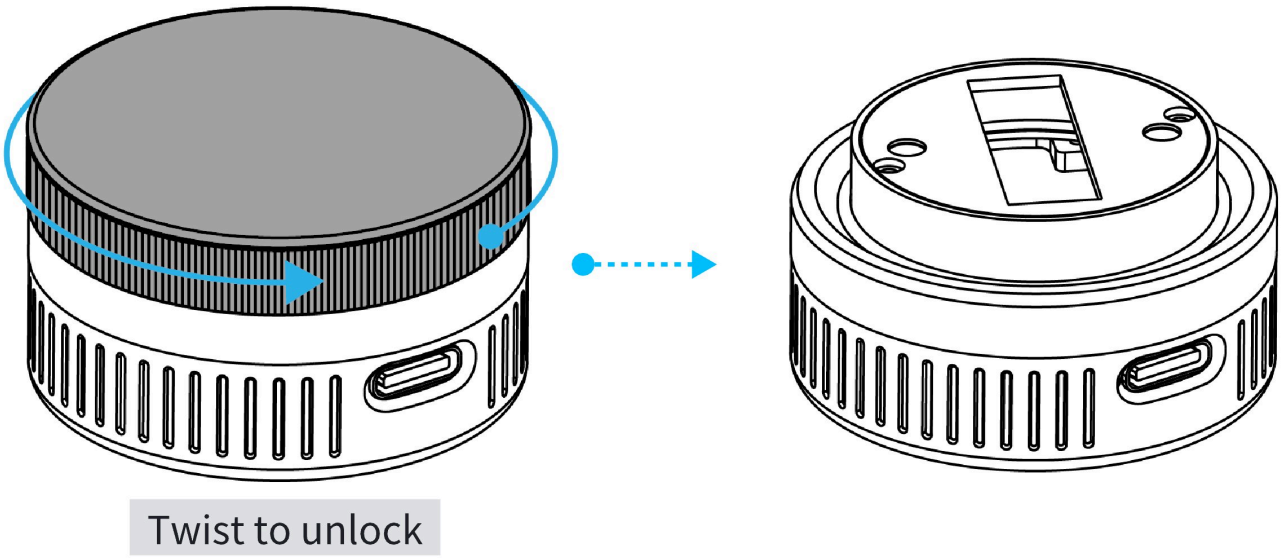
- Place the UAV upright.
- Align the front end of Speedip V2+'s slide rail with the rear end of the mounting bracket, pull the latch outward, and push the Speedip main unit fully into place. Release the latch and ensure it is fully inserted, confirming that the Speedip V2+ main unit is securely locked.



3.7. Align the sampling container with the connection knob and twist to tighten the connection.

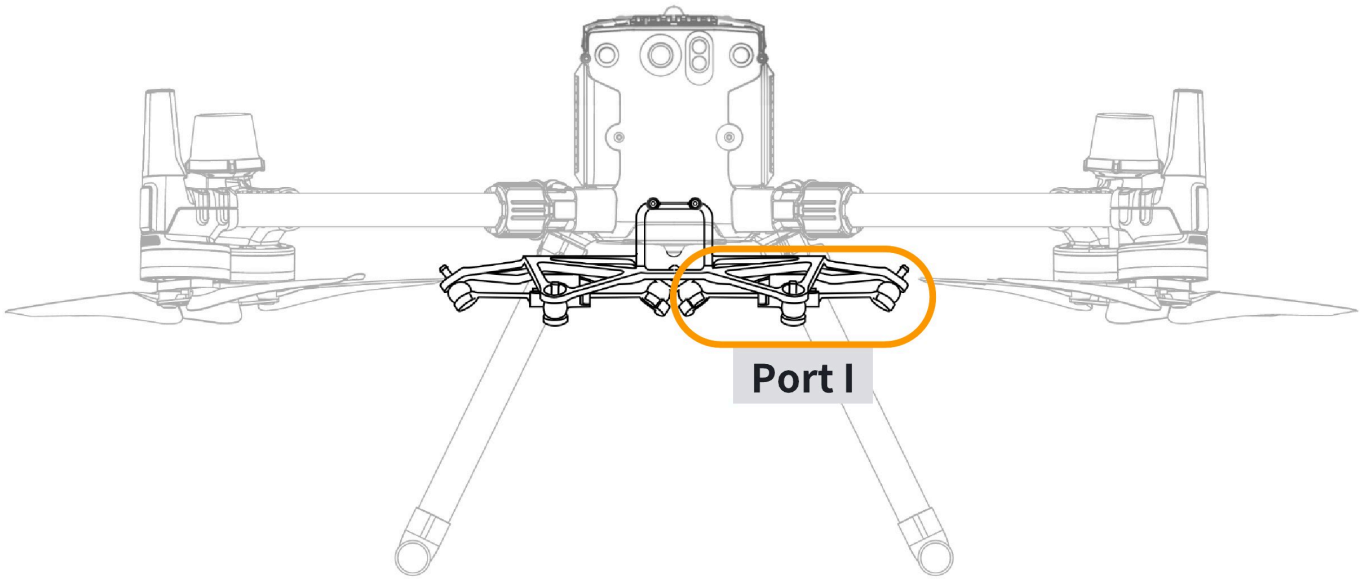


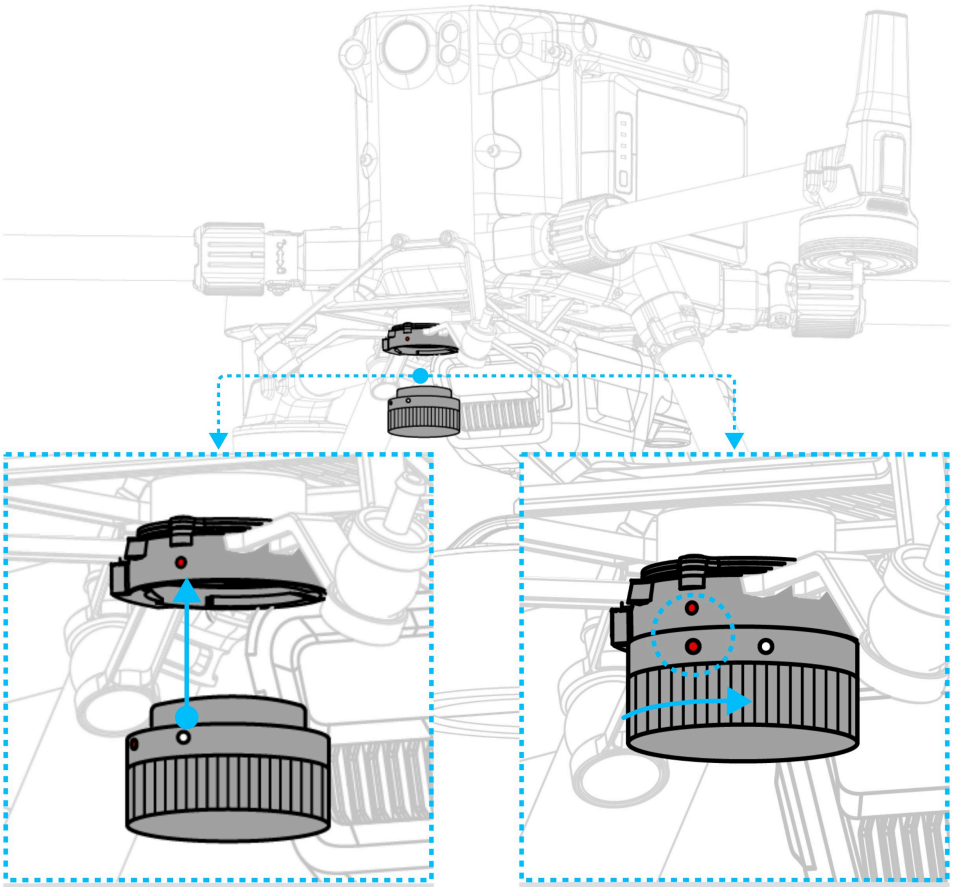
3.8. Remove the cover from Speedip V2+ PSDK adapter.



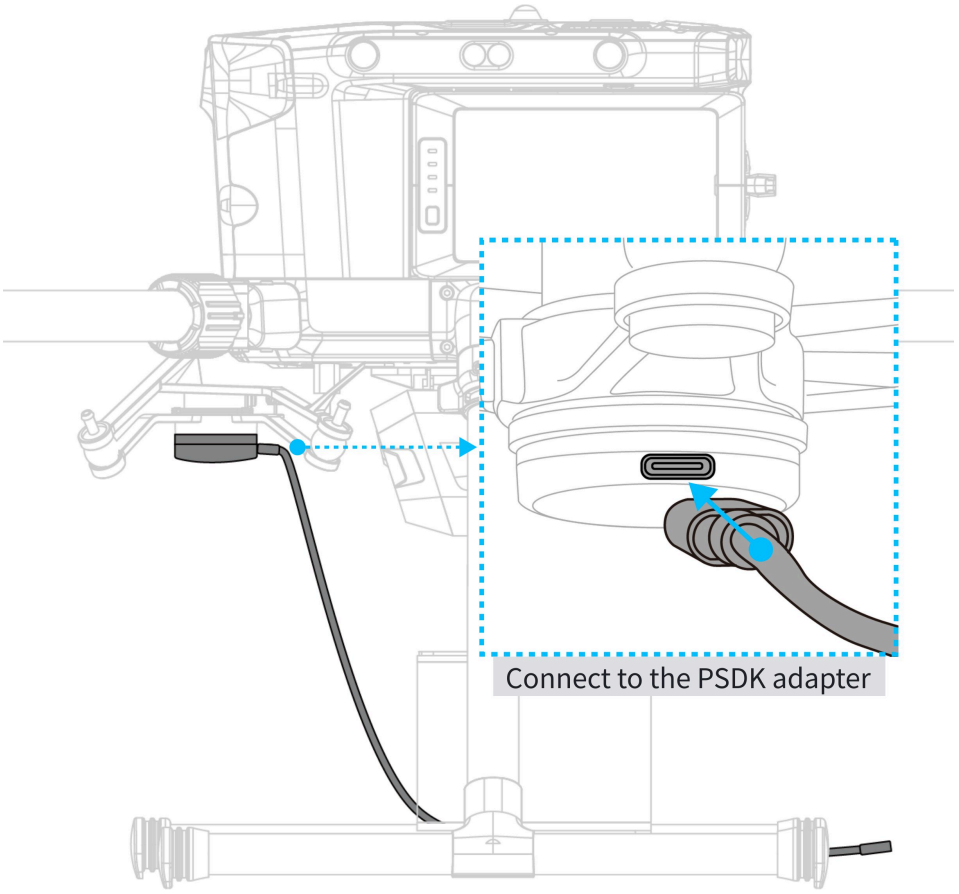
3.9. Align the white dot on the PSDK adapter with the red dot on UAV's gimbal port, insert it, and rotate until the two red dots are aligned. **You should hear or feel a click**.

Note: When using a dual-gimbal mount, it is recommended to connect the PSDK adapter to **Port I**. When facing the UAV's front, the right gimbal port is Port I

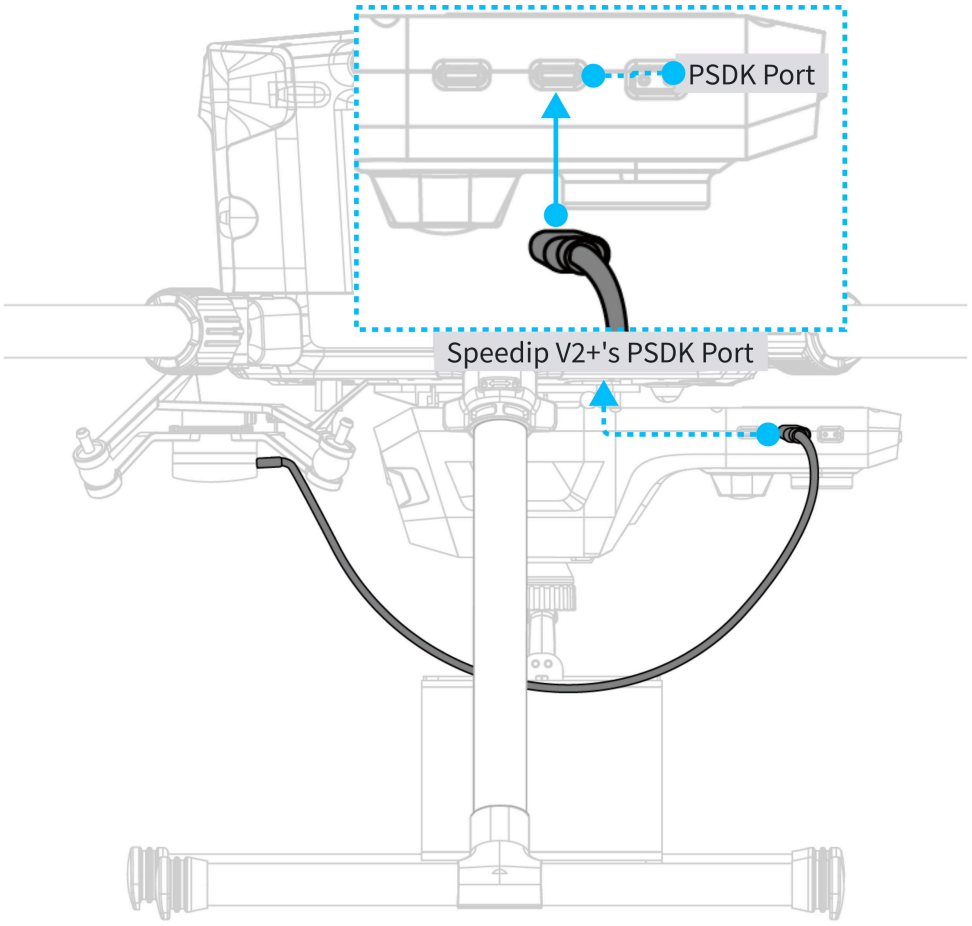




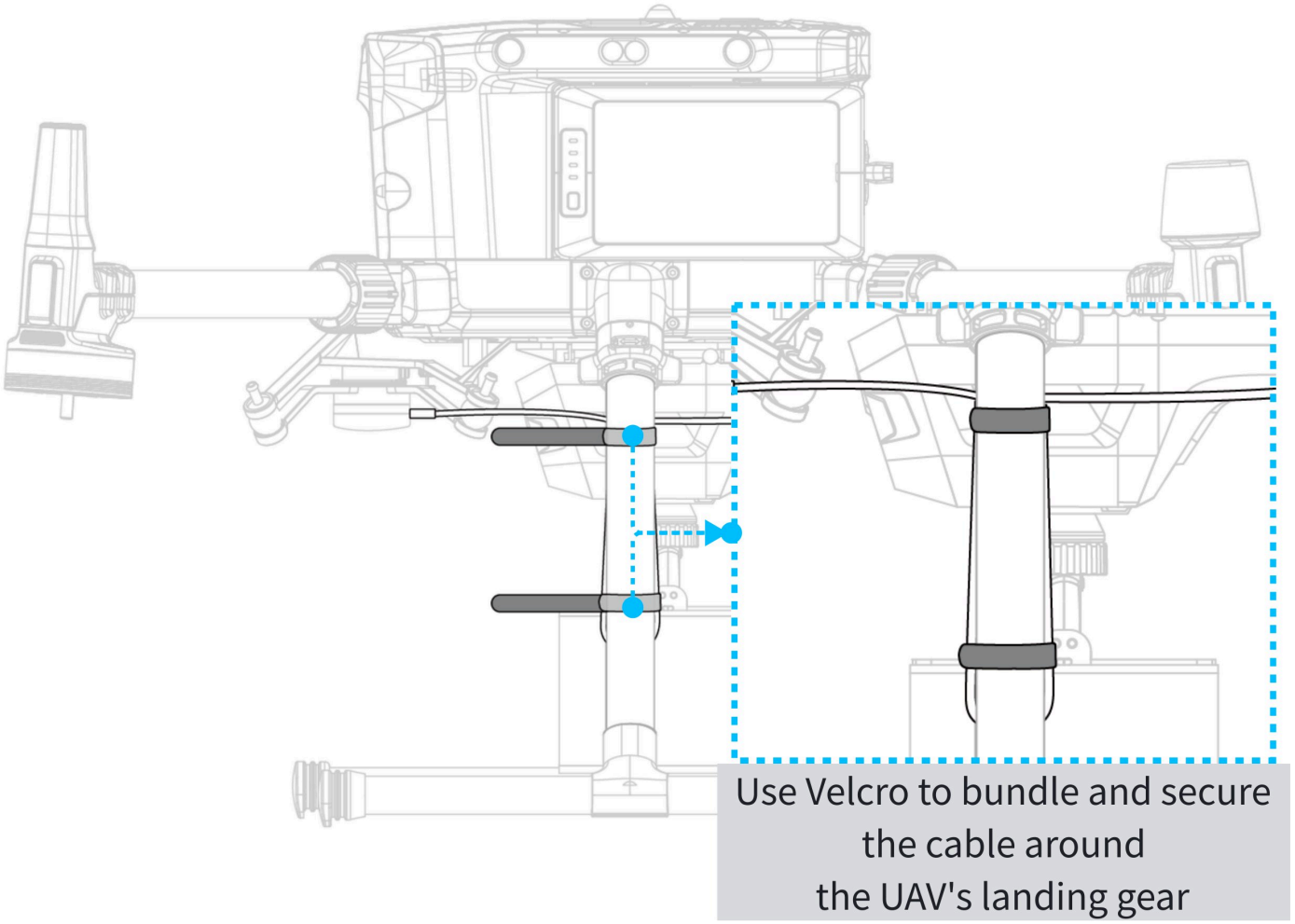
3.10. Connect one end of the dual USB-C cable to the PSDK adapter.



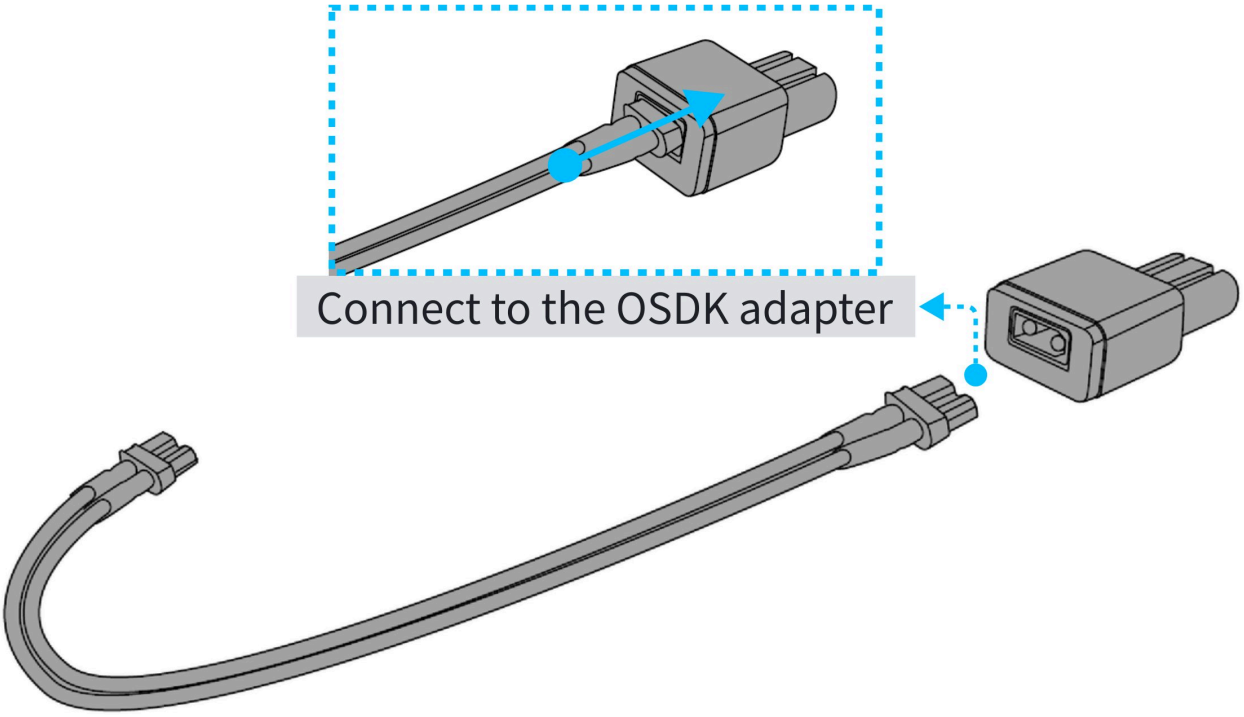
3.11. Insert the other end of the dual USB-C cable into Speedip V2+'s PSDK port.



3.12. Use Velcro to bundle and secure the cable around the UAV's landing gear.

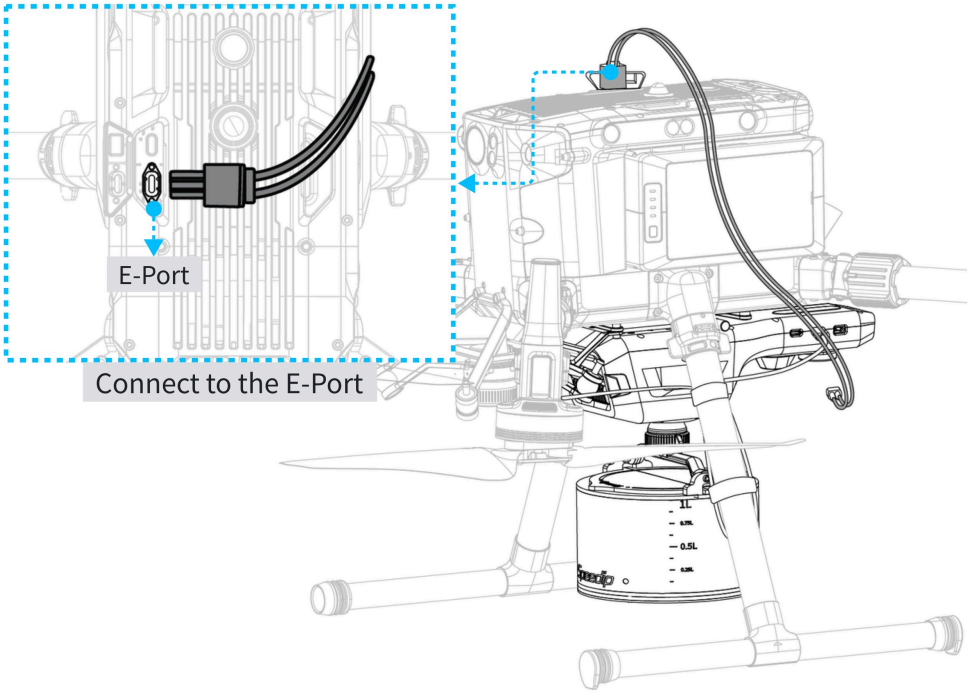


3.13. Connect the XT30 power cable to the OSDK adapter.

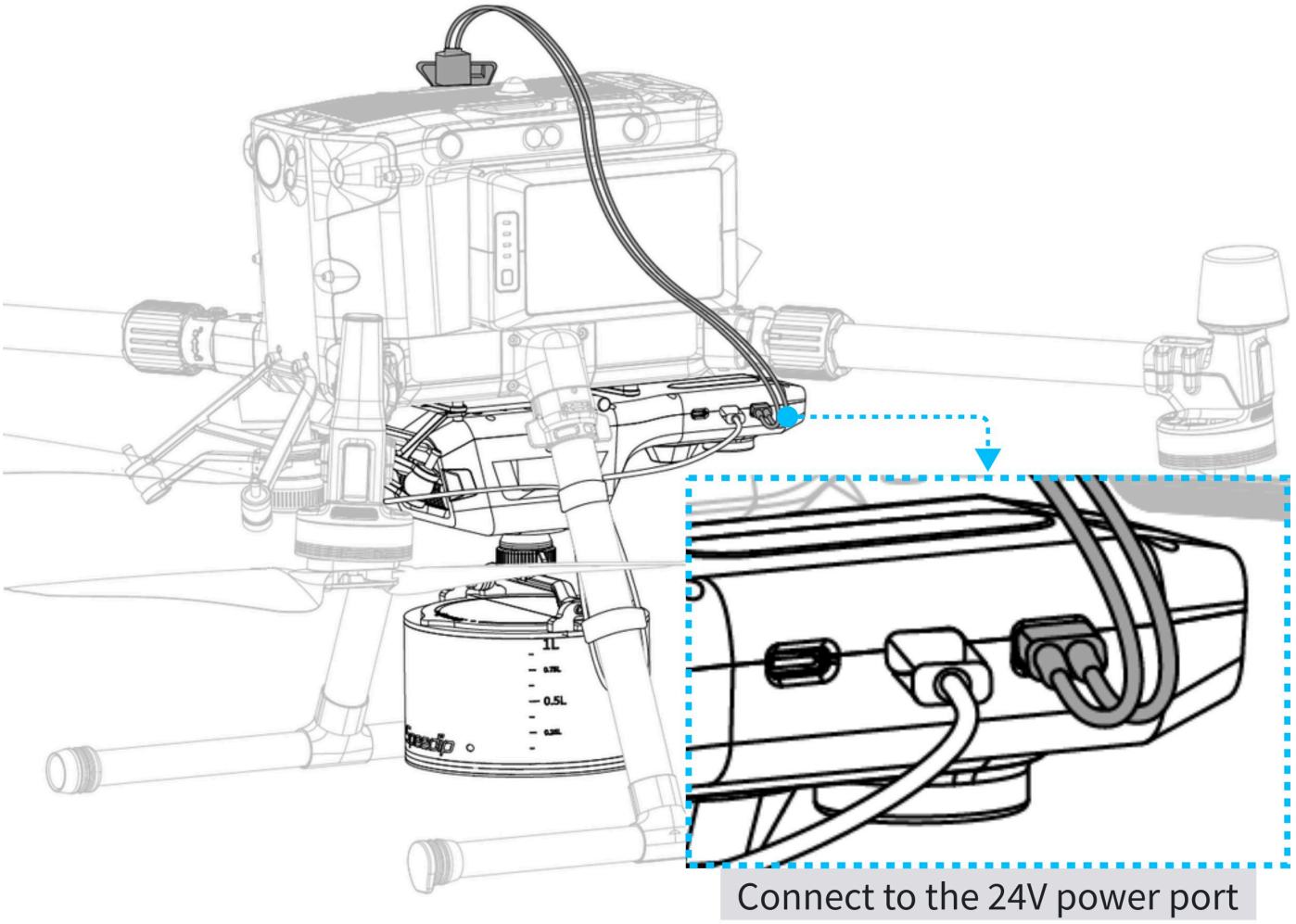


3.14. Insert the OSDK adapter into the UAV's E-Port on its top.

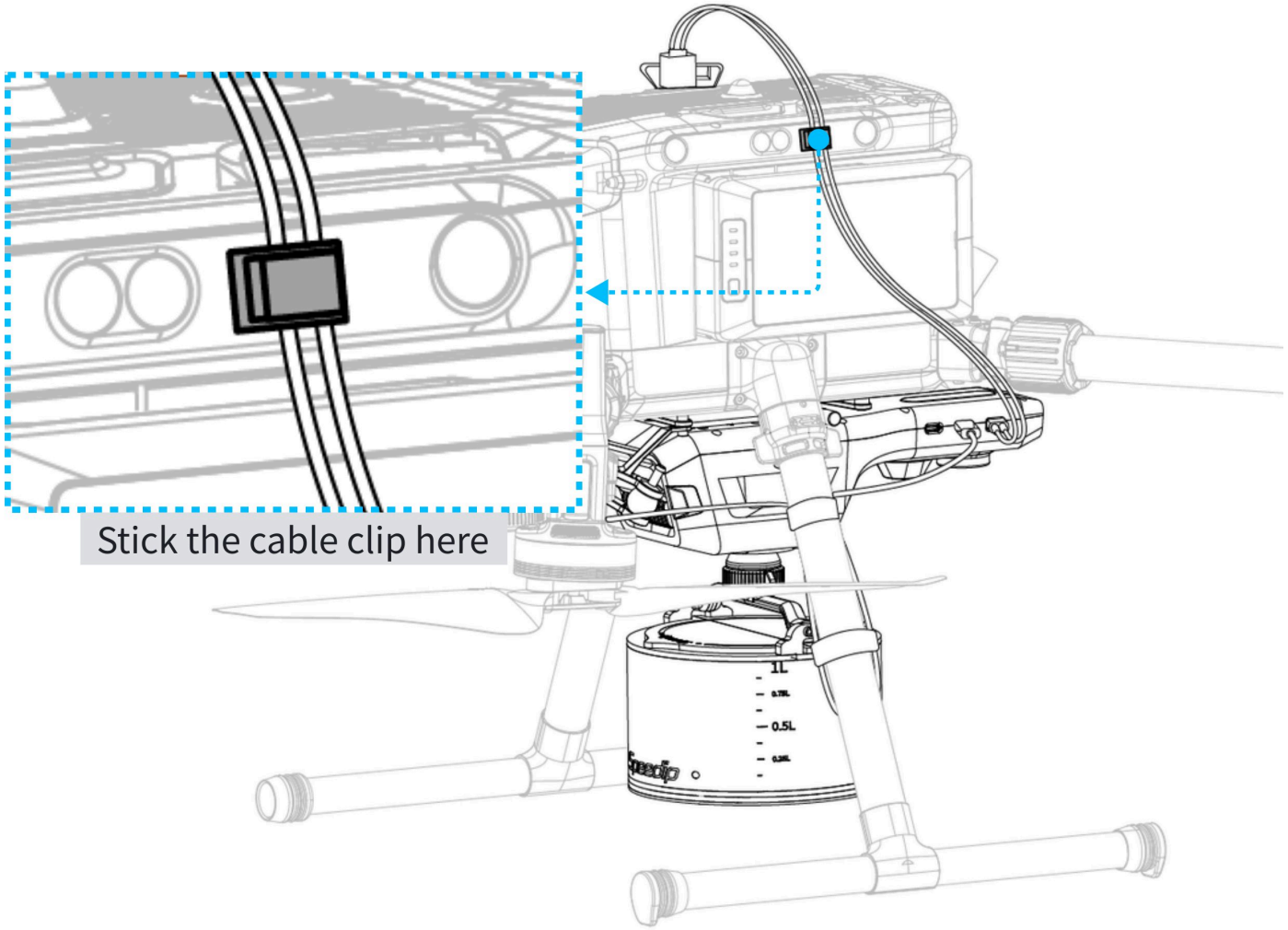
When facing the UAV's front, the E-Port is located at the **top left of the UAV**



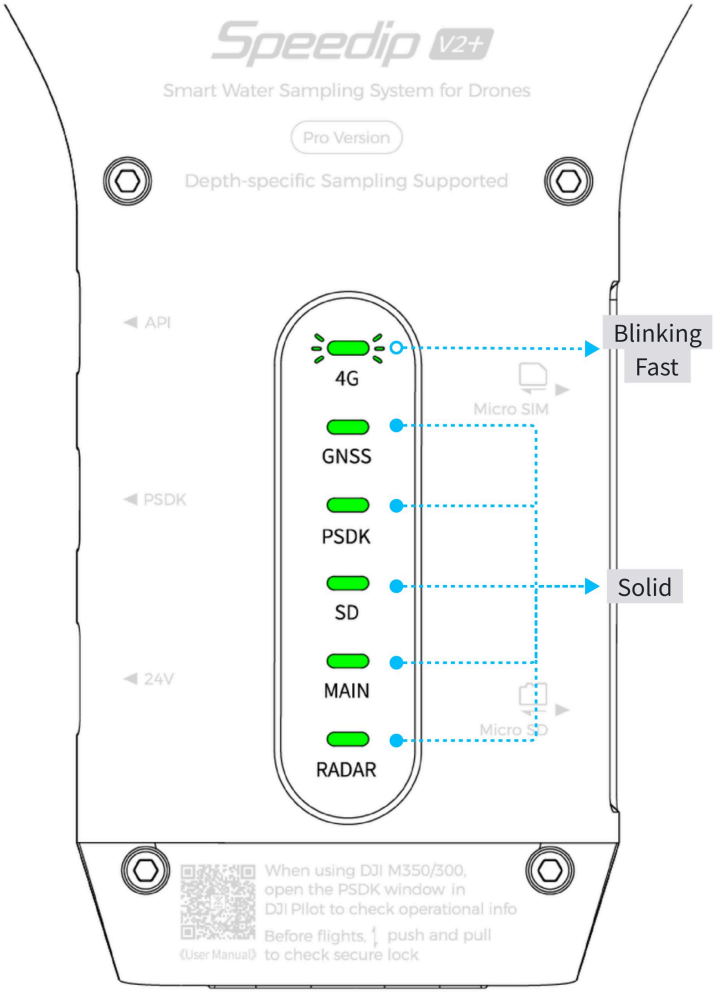
3.15. Plug the other end of the XT30 power cable into Speedip V2+'s 24V power port.



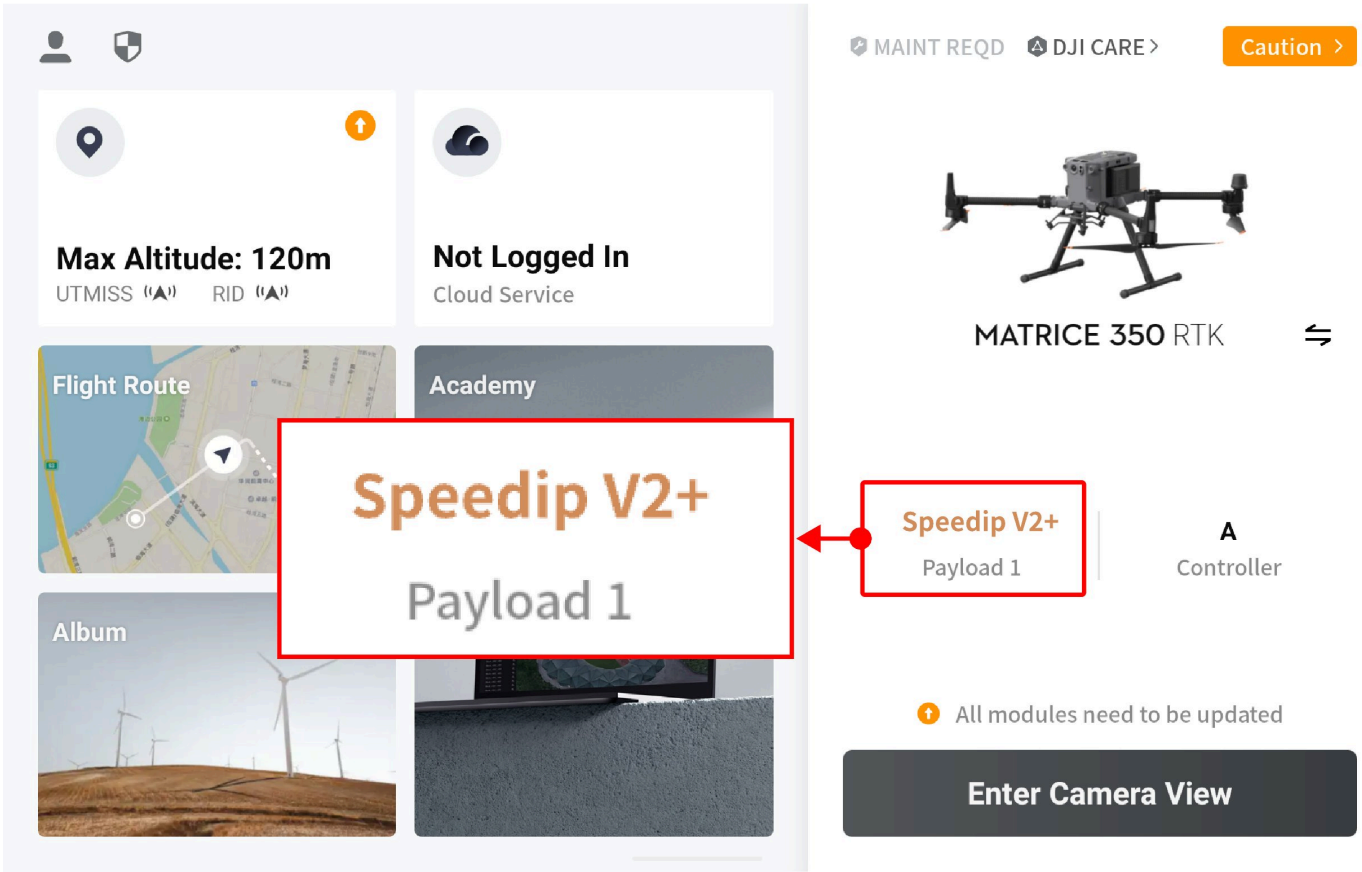
3.16. When you face the UAV's front, attach the cable clip to the right side of the UAV and secure the XT30 power cable inside to prevent interference with the obstacle avoidance sensors.



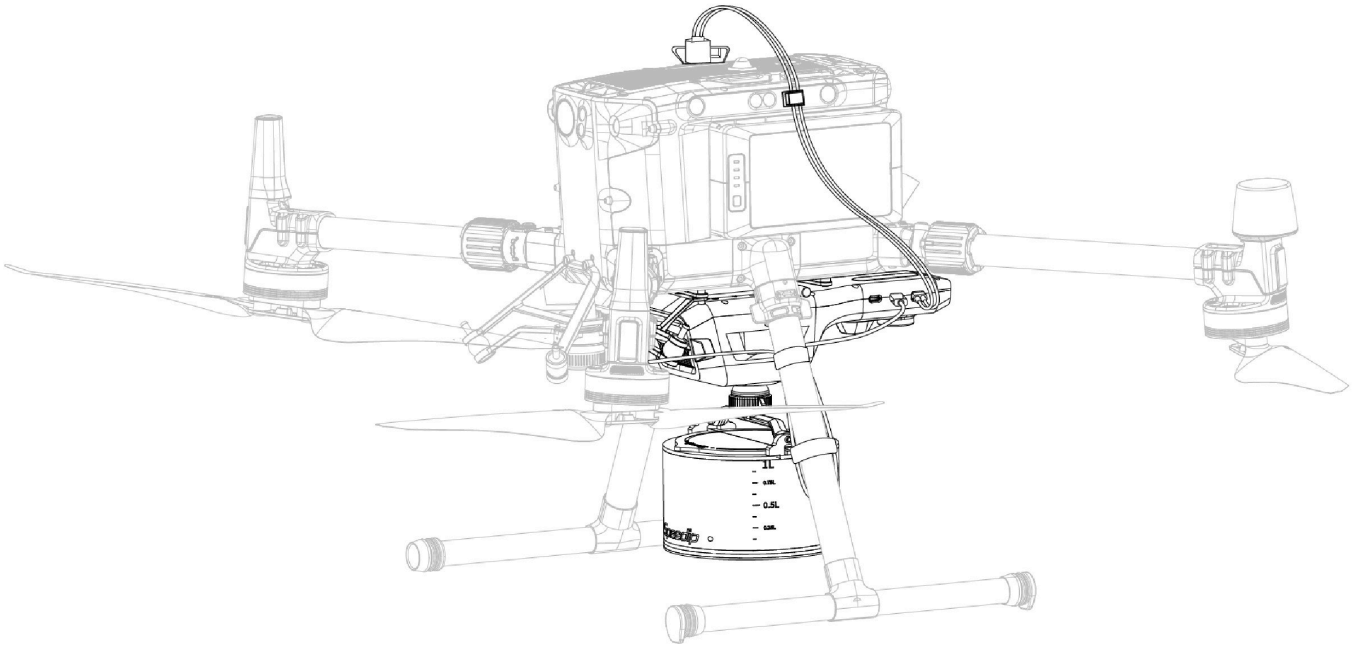
3.17. Turn on the UAV's remote controller, then power on the UAV. After around 60 seconds, verify that Speedip V2+'s status indicators are normal (as shown below).



3.18. Open DJI Pilot App and confirm that the Speedip V2+ is recognized and communicating properly.

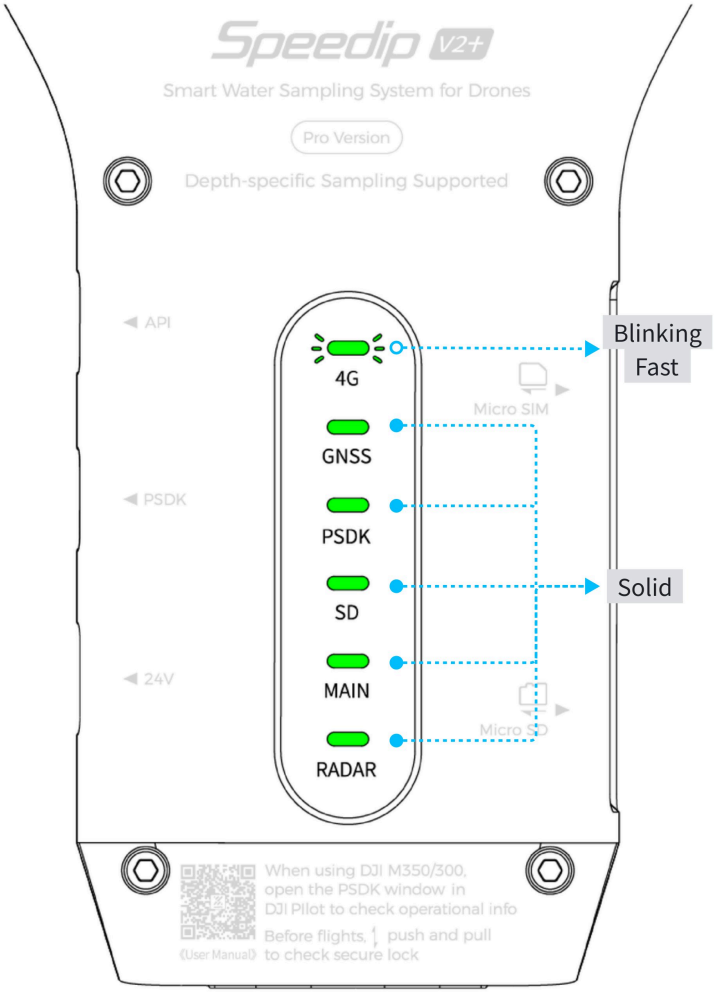


3.19. Installation of Speedip V2+ on DJI M350/300 RTK UAV is now complete ✅.

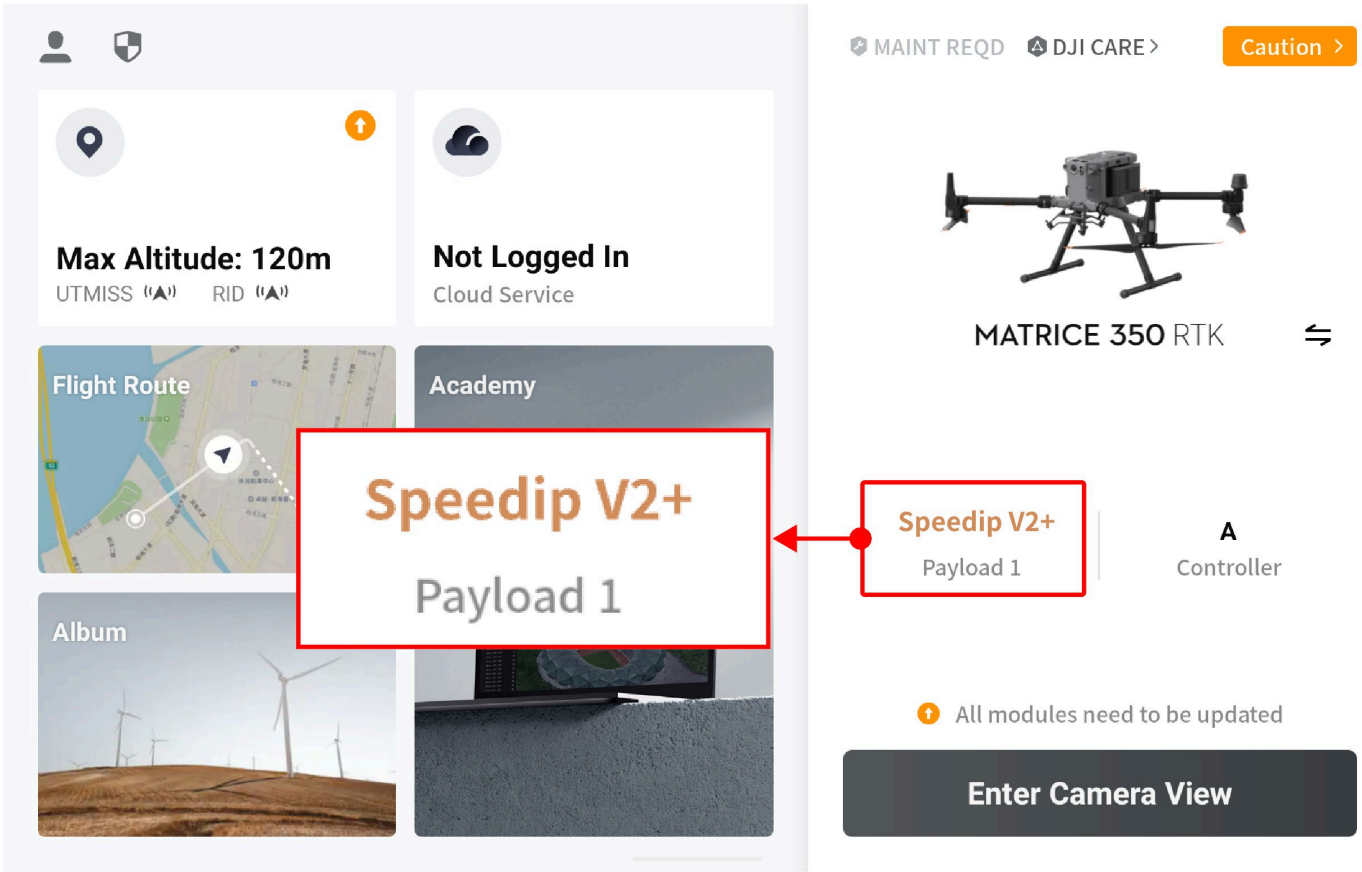


4. Performing a Water Sampling Mission

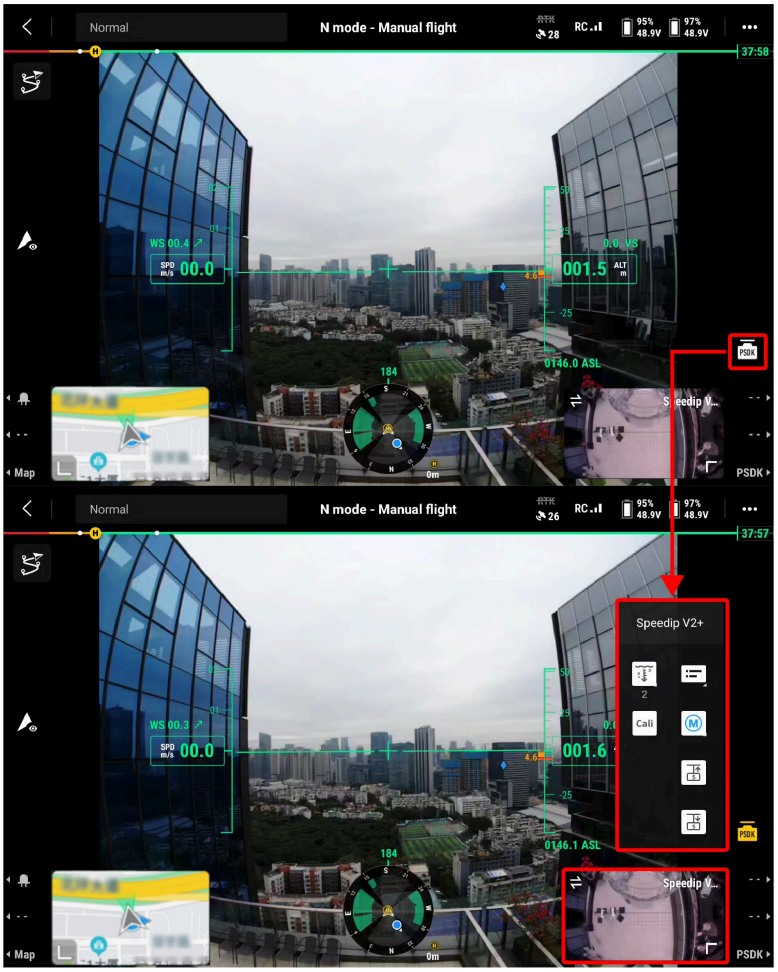
4.1. Upon arriving near the operation site, turn on the UAV's remote controller, then power on the UAV. After around 60 seconds, verify that Speedip V2+'s status indicators are normal (as shown below).



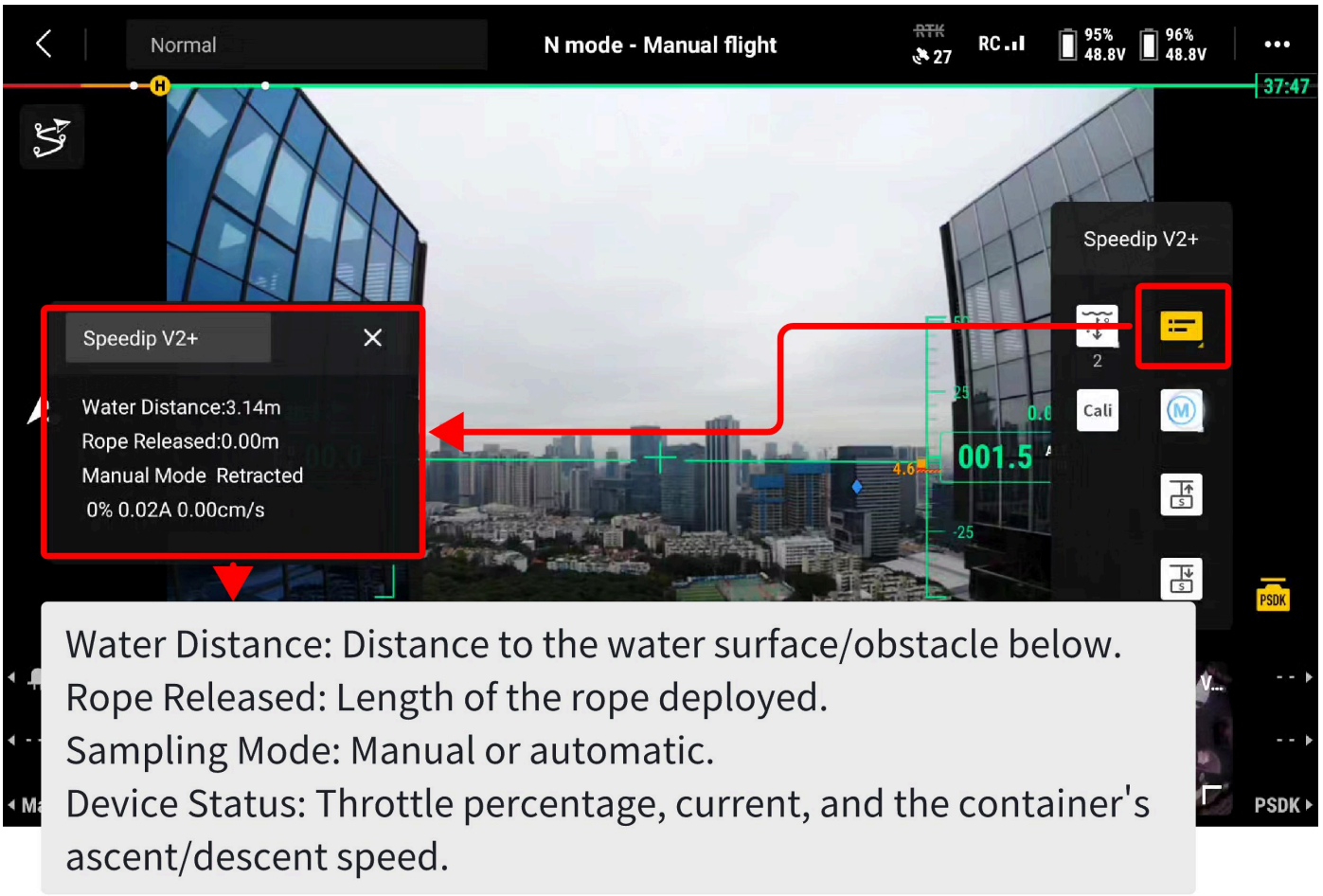
4.2. Open DJI Pilot App and confirm that the Speedip V2+ is recognized and communicating properly.



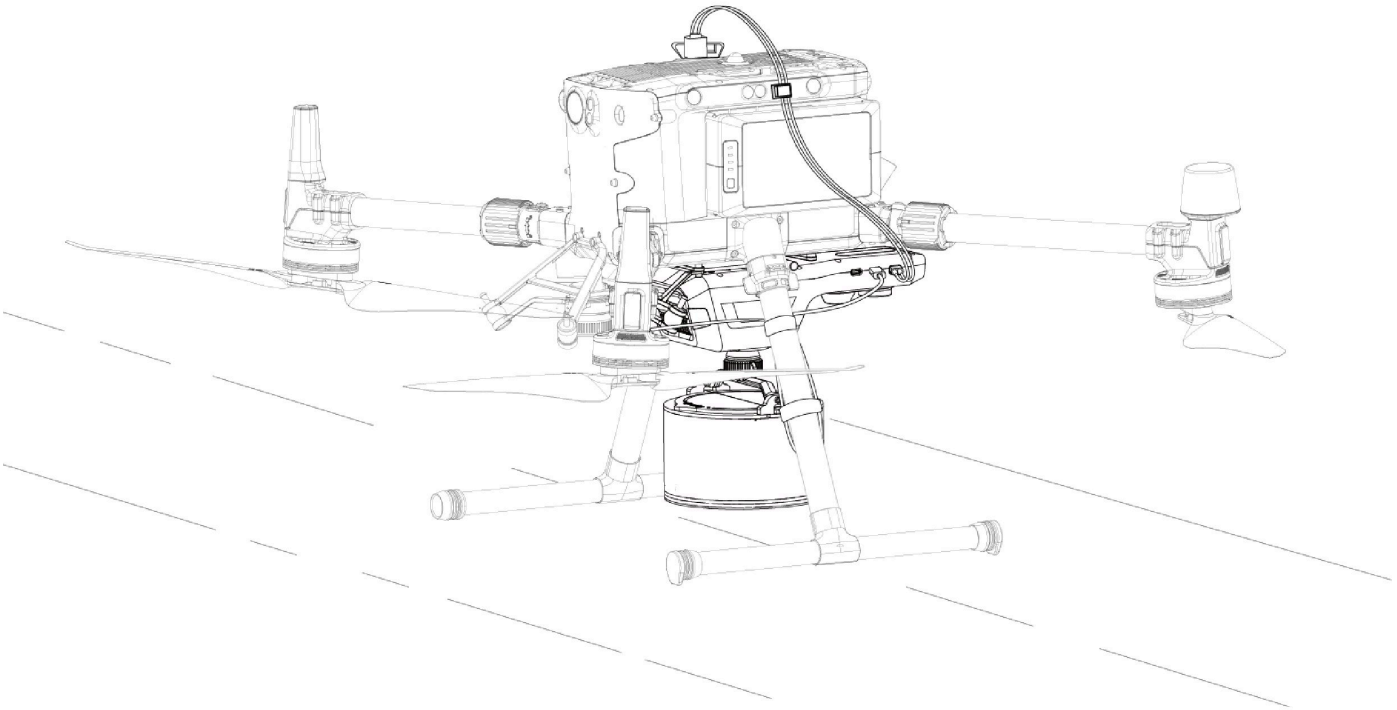
4.3. Enter the flight interface and tap the 'PSDK' button to open Speedip V2+'s function menu. Ensure that the camera feed is stable, and no crashes occur.



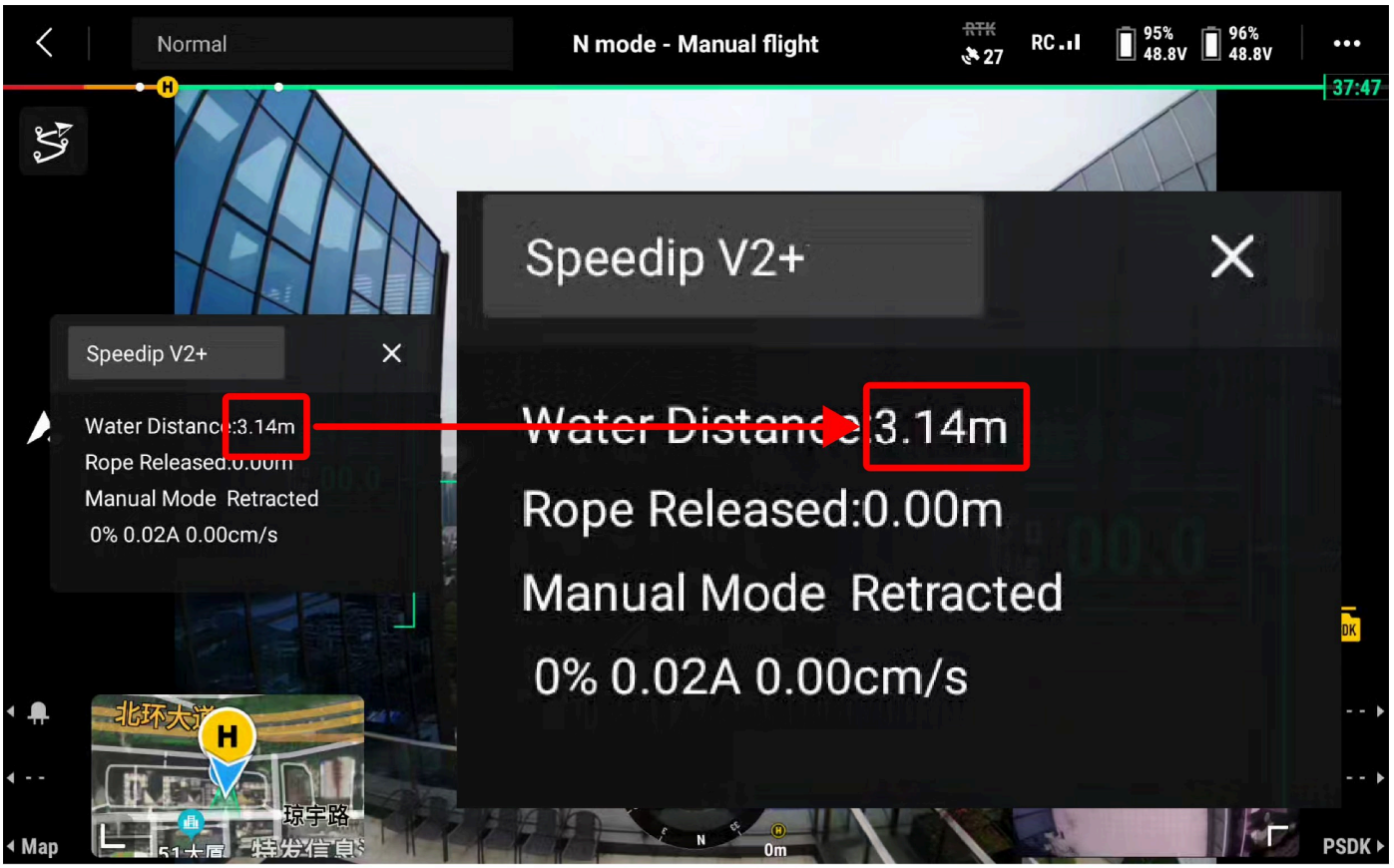
4.4. Open the Real-Time Data window. **It is highly recommended to keep the windows open during the entire operation**.

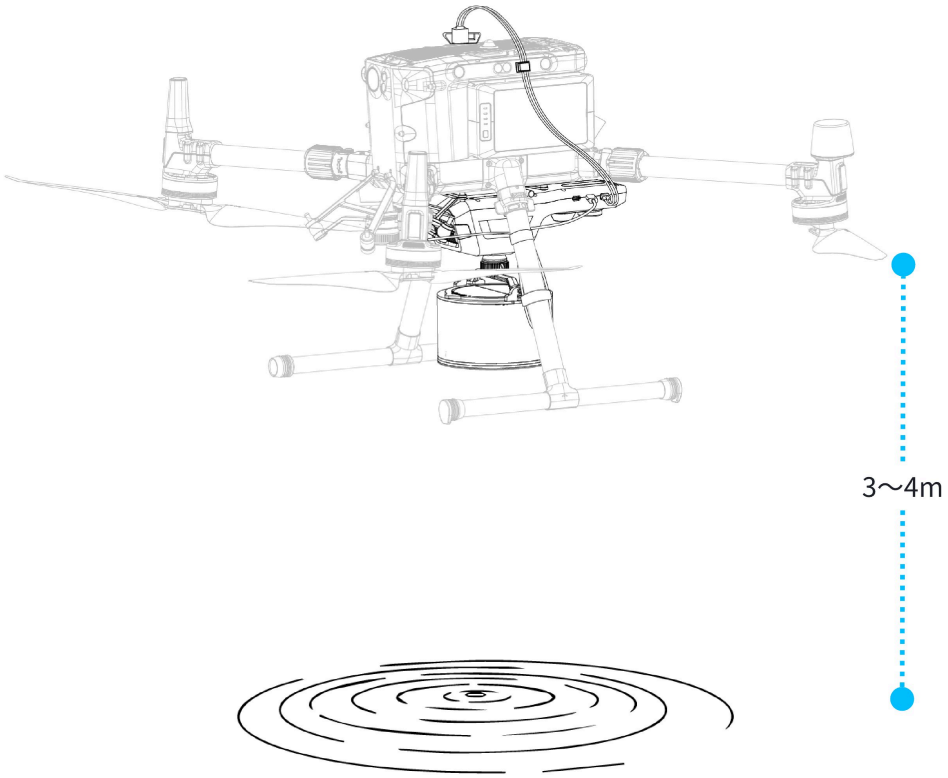


4.5. Position the UAV at a safe takeoff point and launch.



4.6. Fly above the target sampling point, then **slowly descend** until hovering approximately **3–4 meters above the water** (as indicated by the "Water Distance" value).

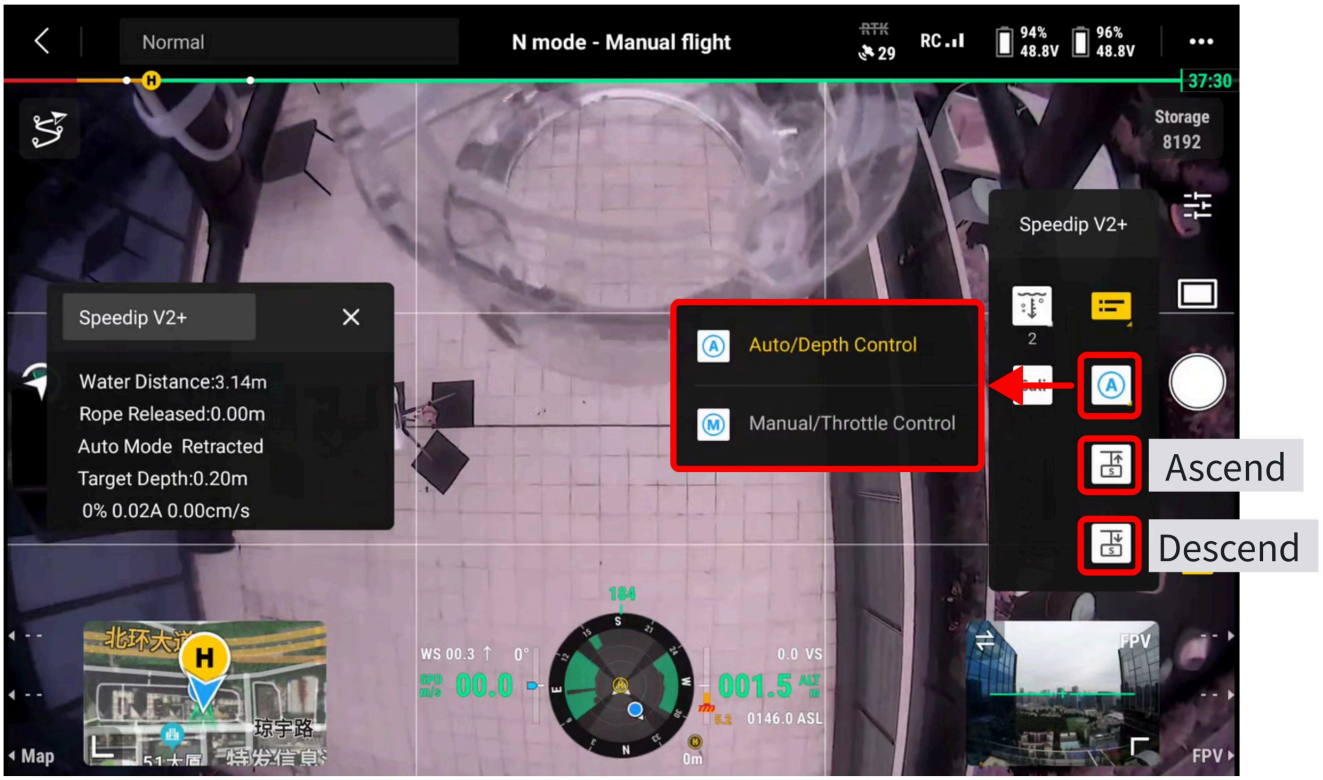




4.7. Use the control buttons on the screen to initiate sampling (choose Manual or Auto mode as appropriate):

A. Manual Mode (default)

- Tap the Descend button to lower the sampling container to the desired depth.
- Once sampling is complete, tap the Ascend button to retract the container.



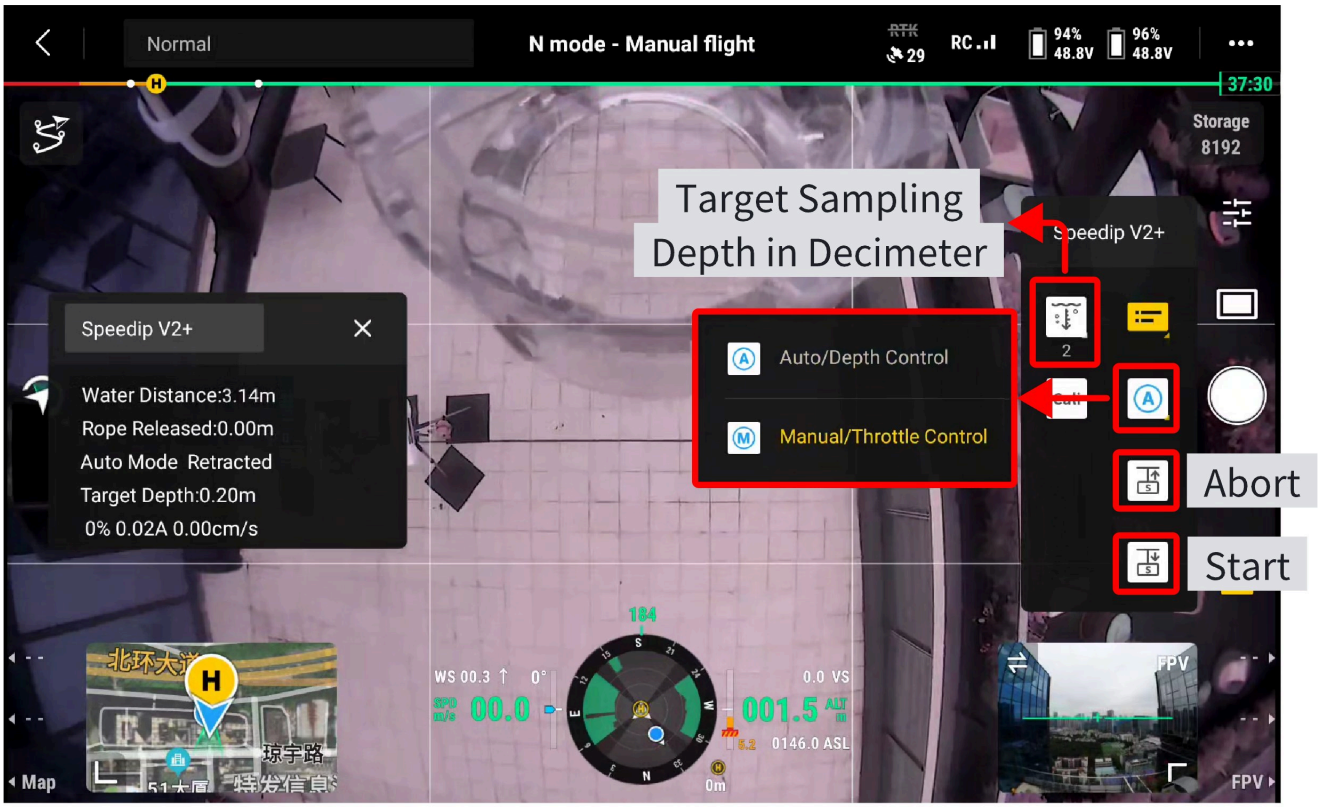
Notes:

a. *Tapping the Ascend button during descent will stop the container; tapping it again starts ascent. Similarly, tapping the Descend button during ascent stops the container, and a subsequent tap starts descent.*

b. *During descent, the warning LEDs flash red (4 Hz); during ascent, they flash green (4 Hz); once the container reaches the top, they flash blue (0.5 Hz).*

B. Auto Mode

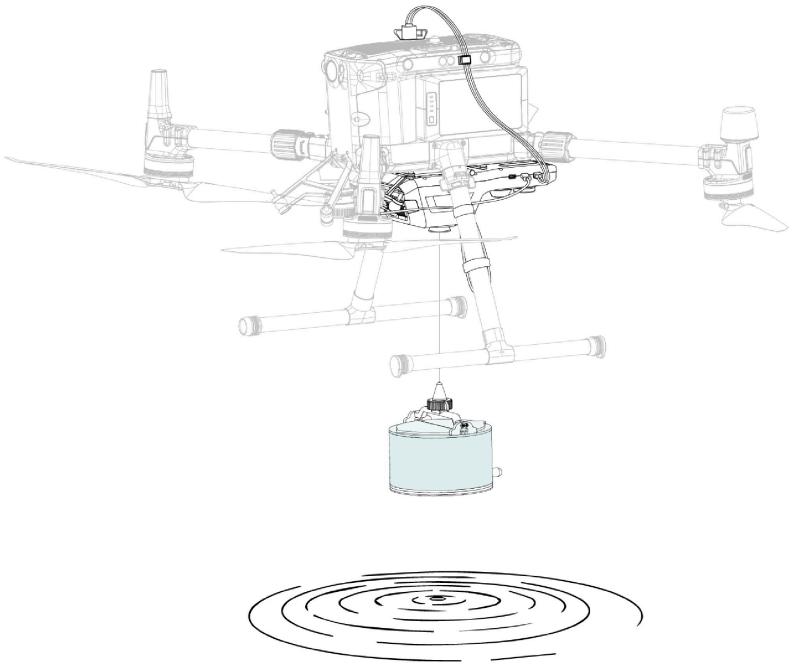
- Switch to "Auto" mode.
- Set the target sampling depth (in decimeters).
- Tap the Start button to begin; the container will descend to the target depth and automatically retract to the top position once sampling is complete (the speed of the container may change during this operation).



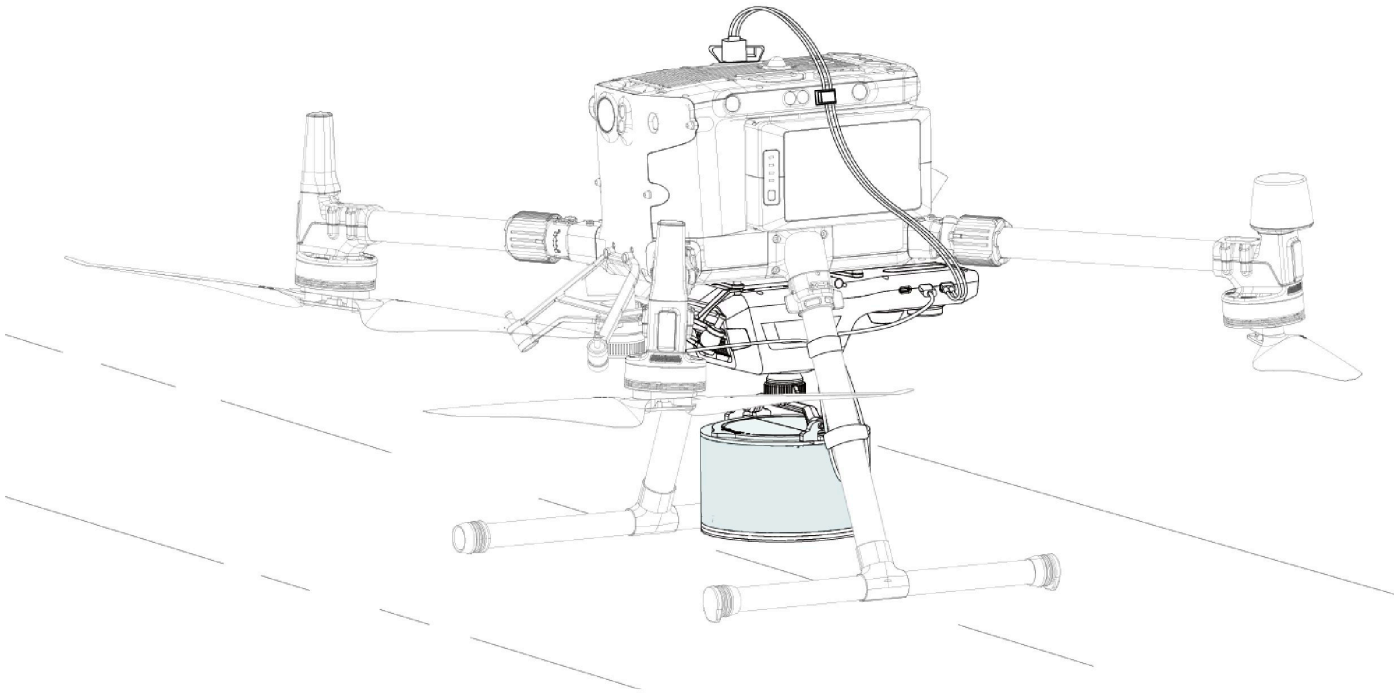
Notes:

a. *Tap the Abort button to cancel the sampling process if needed.*

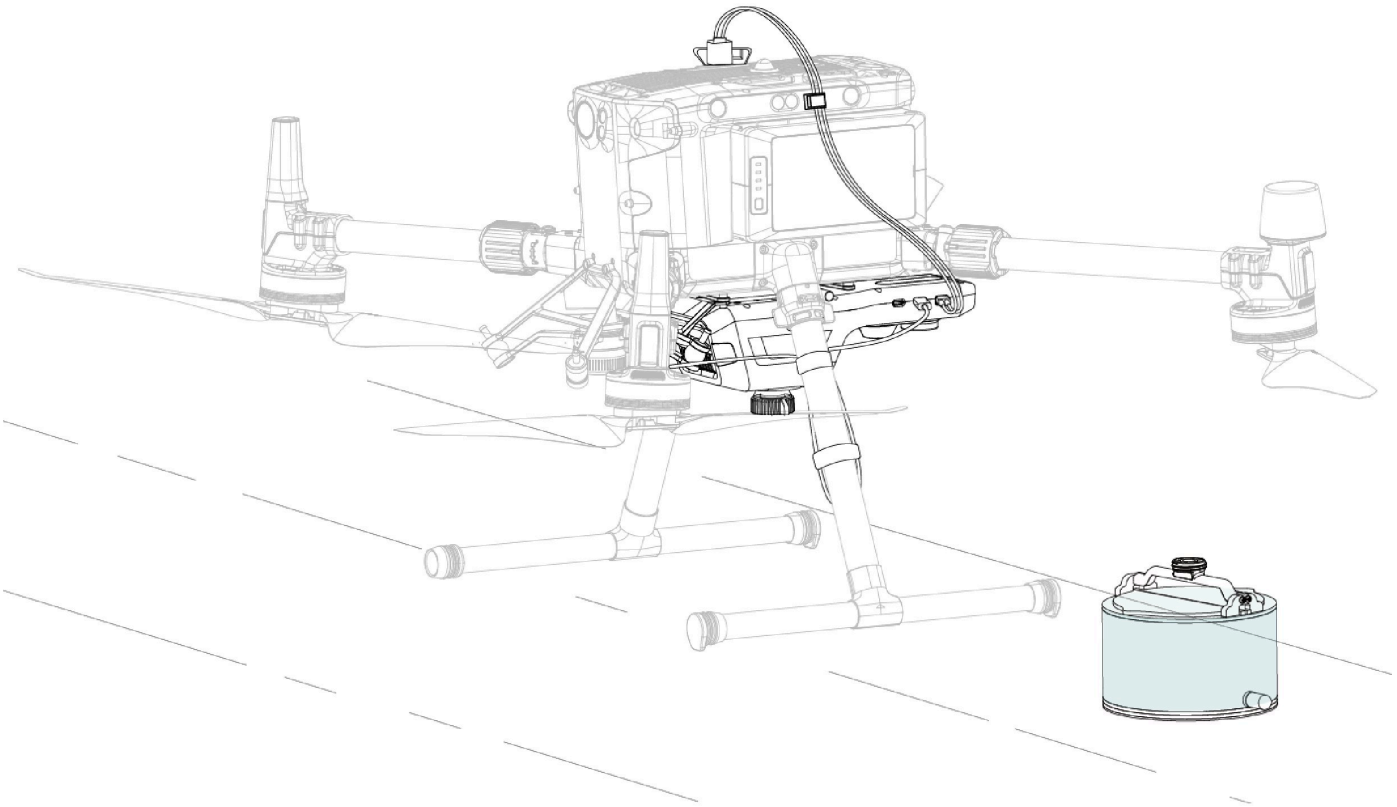
b. *During descent, the warning LEDs flash red (4Hz); during ascent, they flash green (4Hz); once the container reaches the top, they flash blue (0.5Hz).*



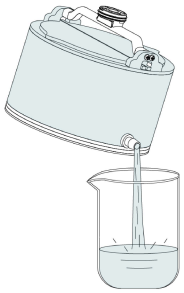
4.8. Return the UAV to a safe landing area.



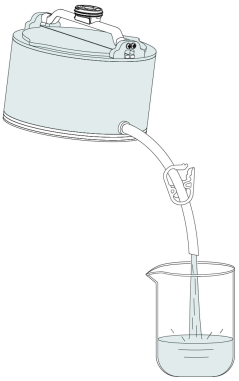
4.9. Detach the sampling container.



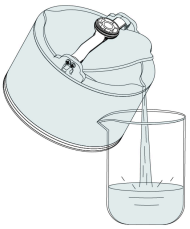
4.10. Transfer the water sample to laboratory containers using an appropriate method.



1. Using the container outlet

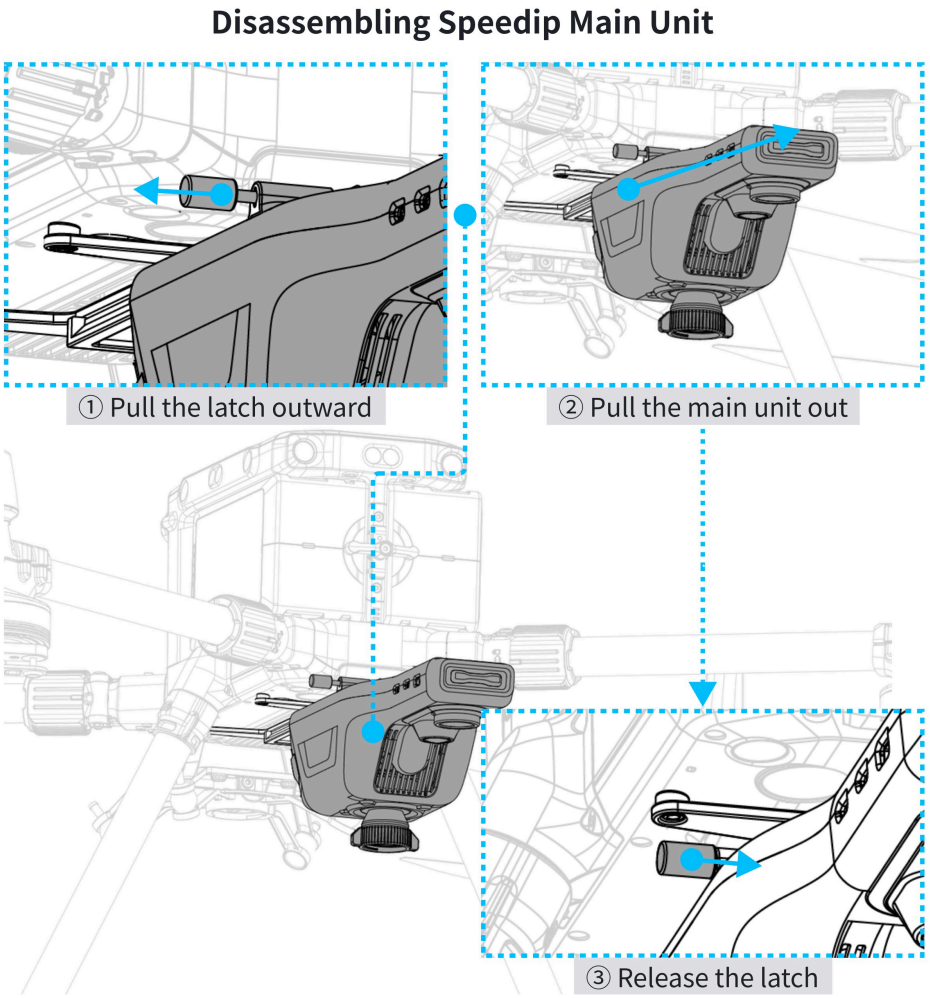


2. Using the tube with a flow stopper clamp

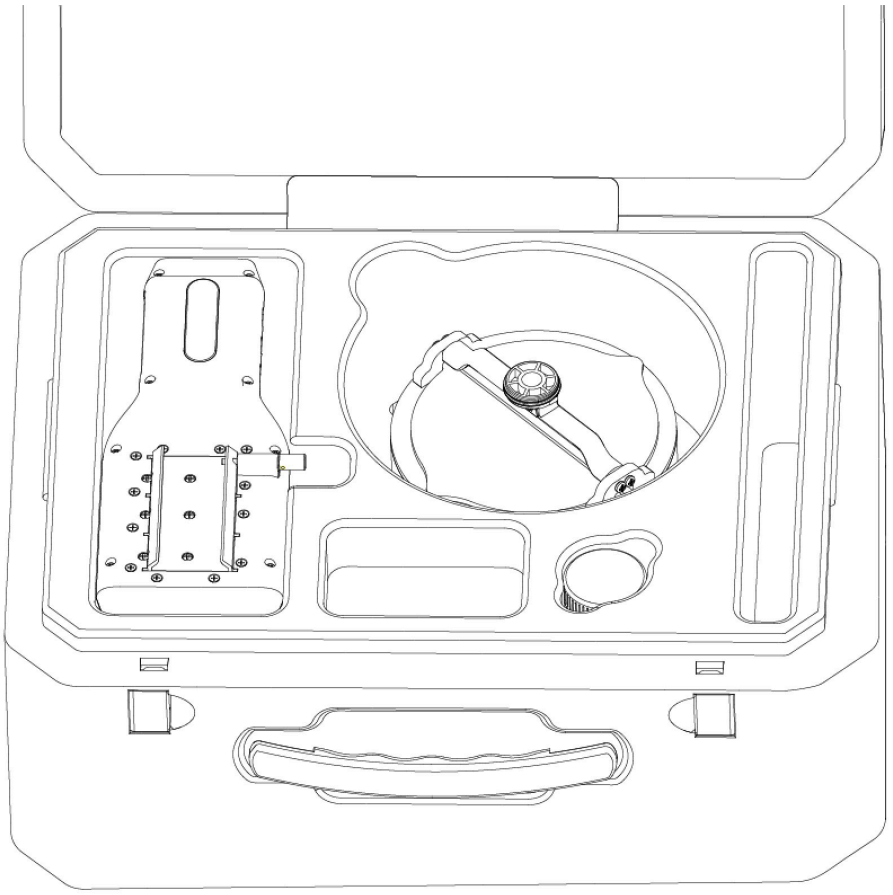


3. Openning the top lid

4.11. Power off the UAV and disassemble the Speedip V2+ main unit and accessories as per the procedure. You may keep the mounting bracket on the UAV if you plan to use Speedip in the near future.



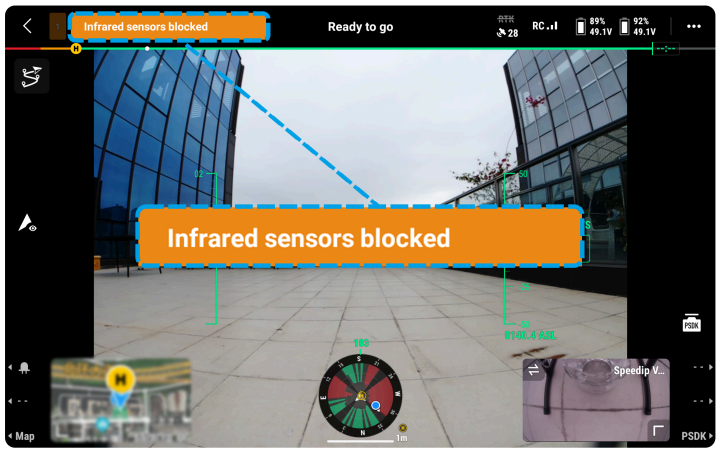
4.11. Wipe off any residual water from the container and the Speedip V2+ main unit. **Ensure the equipment is completely dry before storing it long-term in the carrying case**; if complete dryness cannot be assured, keep the case open.



5. Common Misuse, Precautions, and Product Limitations

5.1 Common Misuse

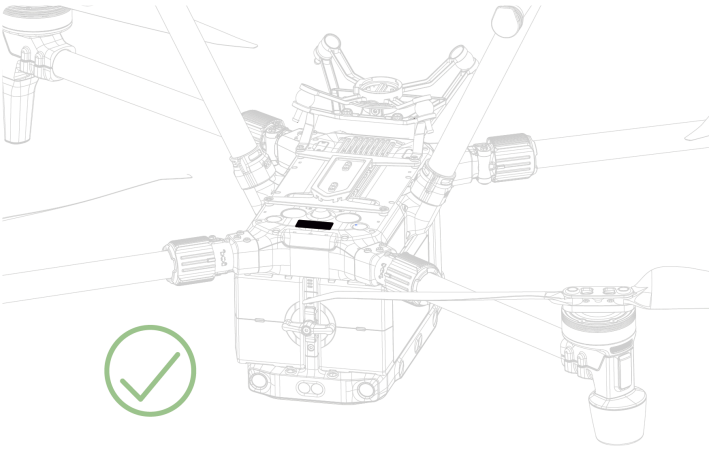
Incorrect Operation



Uncovered DJI M350/300 RTK's Downward-Facing Infrared Sensor

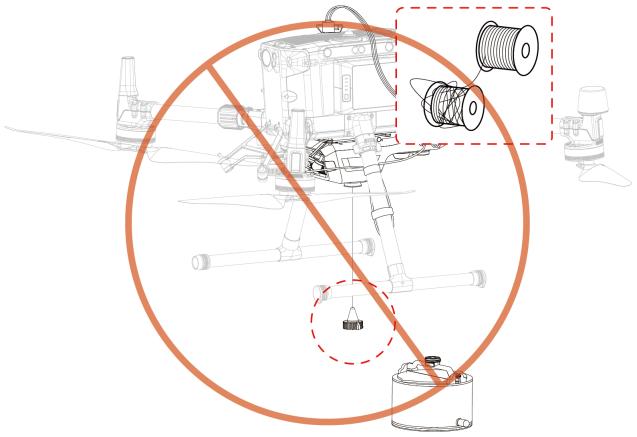
Consequence: During mission, the aircraft may display error messages that require an immediate return or restart, thereby reducing mission efficiency.

Correct Operation



Applying the Black Sticker to Cover the Downward-Facing Infrared Sensor

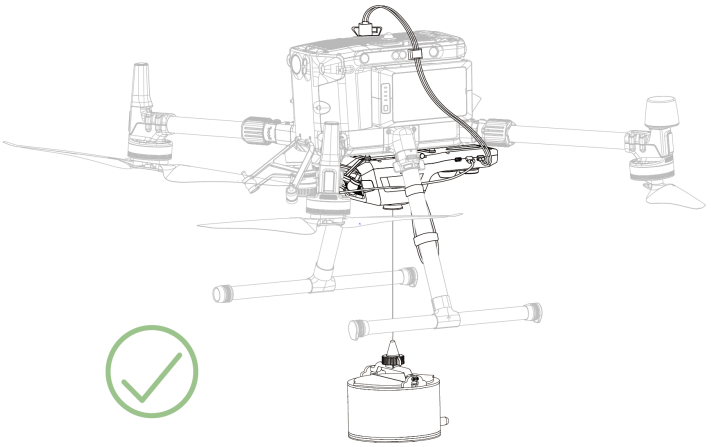
Incorrect Operation



Releasing Rope Without an Attached Container

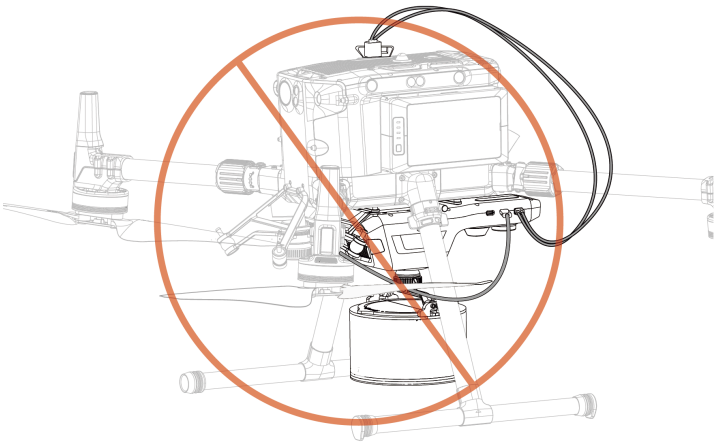
Consequence: Although Speedip V2+ features rope tension detection protection, frequently releasing the rope without load may cause internal rope disorder, hindering normal rope deployment.

Correct Operation



Attaching the Container and Ensuring Rope Tension Before Releasing

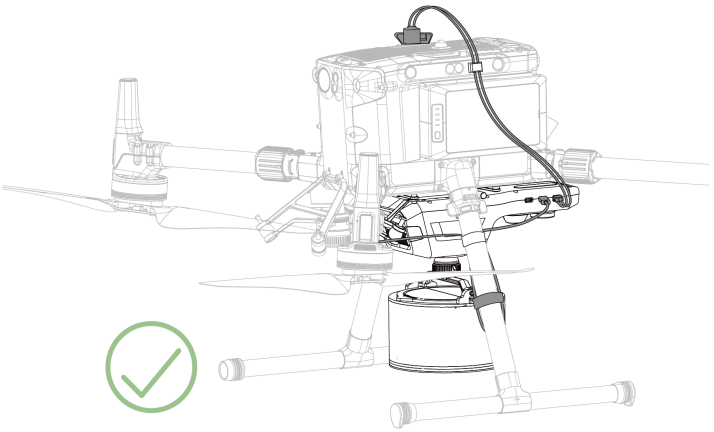
Incorrect Operation



Unsecured Cable

Consequence: Swinging cables may obstruct the UAV's obstacle avoidance camera, impairing performance, or be struck by the propellers, potentially causing a safety incident.

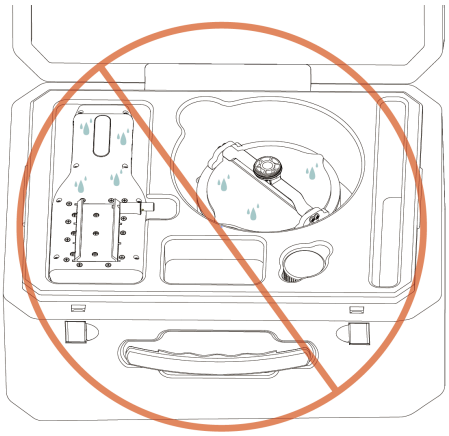
Correct Operation



Strictly Securing the Cables According to Sections 3.12 and 3.16

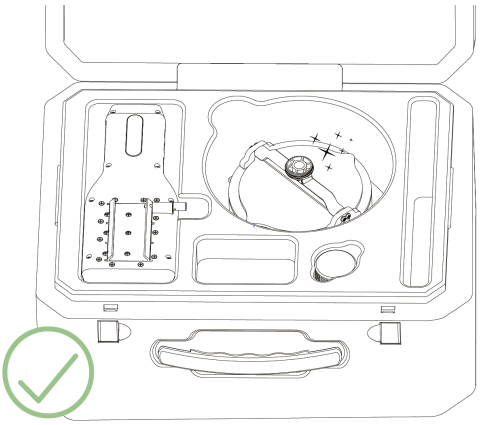
Incorrect Operation

Correct Operation



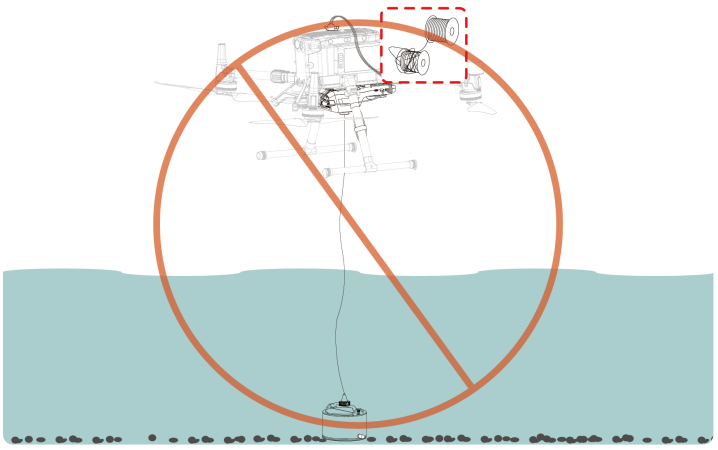
Storing Speedip V2+ Main Unit and Container With Residual Water in the Carrying Case for Long-Term Storage

Consequence: Excess moisture trapped in the case over time may potentially cause corrosion of the Speedip V2+ and its accessories.



Ensuring Speedip is Completely Dry Before Long-Term Storage in the Carrying Case

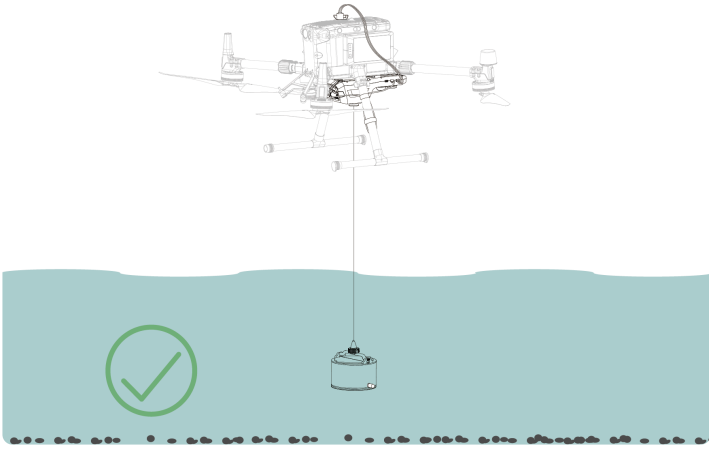
Incorrect Operation



Continuing to Release Rope After the Container Touches the Bottom

Consequence: During a mission, if the sampling container touches the bottom, the rope loses tension. At that point, Speedip V2+ will automatically stop releasing the rope and prompt you to retrieve the container (if you believe this is a false alarm, you may click the Descent button to continue lowering). Persistently releasing slack rope can easily cause internal entanglement, severely impairing proper cable deployment.

Correct Operation



Collecting Water Samples Only Within the Safe Depth Range

5.2 Precautions

- **UAV Altitude Drift Leading to Inaccurate Sampling Depth or Sampling Failure**

  Due to environmental factors, the UAV may experience altitude drift (inability to maintain a precise altitude), which can result in inaccurate depth control during fully automated sampling or even sampling failure (especially when the target sampling depth is shallow, for example, <5 decimeters). If altitude drift occurs, please exercise caution when using the fully automated sampling function, or appropriately increase the target sampling depth.

- **Power-On Sequence**

  Always start the DJI RC before powering up the M350 and Speedip. If the controller is switched on later, the Speedip PSDK control buttons may not be displayed correctly in the DJI Pilot app.

5.3 Product Limitations

- **Liquid Exposure Warning**

  Speedip V2+ has undergone waterproof and anti-corrosion treatment on key components of the circuit board to enhance durability in high-humidity or high-salinity environments. However, its ports and air vents are not waterproof. **Liquid splashes from specific directions may cause damage to the device**.

  To ensure optimal performance:

  - Avoid exposing Speedip V2+ main unit to water (especially near its ports and air vents).
  - Immediately dry the device if it comes to contact with liquid.

  Damage caused by liquid ingress **is not covered** under Speedip V2+'s free warranty service.

- **Inaccurate "Water Distance" at Greater Water Surface Distance**
  When lowering the sampling container 6–10 m above the water surface, the reflection signal from the water surface is weak. As a result, the millimeter-wave radar may **mistakenly identify the container as the water surface**, leading to an erroneous 'Water Distance' reading.

- **Limited Suitability in Some Water Environments**
  - **Strong Currents:**

This product is **not suitable for fixed-depth water sampling in areas with strong currents**. The lateral force from the water flow can cause the cable to deviate from a near-vertical orientation, resulting in an actual sampling depth that is significantly shallower than the displayed depth.

- **High Sediment Content:**

  It is **not recommended for sampling in areas with high sediment levels**. Solid particles can compromise the seals of the container's lids, leading to rapid leakage of the water sample. If this occurs, please clean the container before reuse.

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