AeroClean F30 High-Pressure Insulator Cleaning System User Manual

Contents

Disclaimer

Thank you for purchasing our product. If you have any questions or require assistance, please contact us. This manual applies to the AeroClean F30 High-Pressure Insulator Cleaning System.

Read this manual carefully before use and retain it for future reference. Failure to follow the instructions and warnings may cause personal injury or damage to the product or surrounding property. This manual may be updated without prior notice as product functions change.

We reserve the right of final interpretation of this document and all related materials. For more information, visit https://store.foxtech.com.

Safety Precautions

1. This product is designed exclusively for the DJI FlyCart 30. Do not use it with other aircraft, as this may cause property damage.

2. Due to aircraft payload limits, the maximum water load is 20 L in single-battery mode and 10 L in dual-battery mode.

3. Before use, place the F30 on firm, level ground.

4. For non-urgent operations, charge the batteries one day before use. For long-term storage, disconnect the power input and use the aircraft to discharge the batteries to approximately 55%.

5. After use, store the cleaning system in a cool, dry, well-ventilated area.

6. Before operating the F30, ensure all operators have received appropriate safety training, understand the operating procedures, and have secured the work area.

7. Before each use, inspect the F30 thoroughly, including battery level, hose connections, and nozzle condition. Ensure the system is in proper working order.

8. Select an appropriate water supply for the operating environment and task. Secure all hose connections to prevent leakage during operation.

9. Maintain stable aircraft flight throughout the cleaning operation.

10. Select a suitable cleaning agent for the target material and cleaning requirements. Avoid waste and environmental contamination.

11. After operation, clean and maintain the F30. Clear the nozzle and replace damaged parts as required to ensure reliable long-term operation.

12. If the product malfunctions, contact your account manager or after-sales support. Do not disassemble, modify, or repair the product without authorization. We accept no liability for damage resulting from unauthorized work.

1. Product Overview

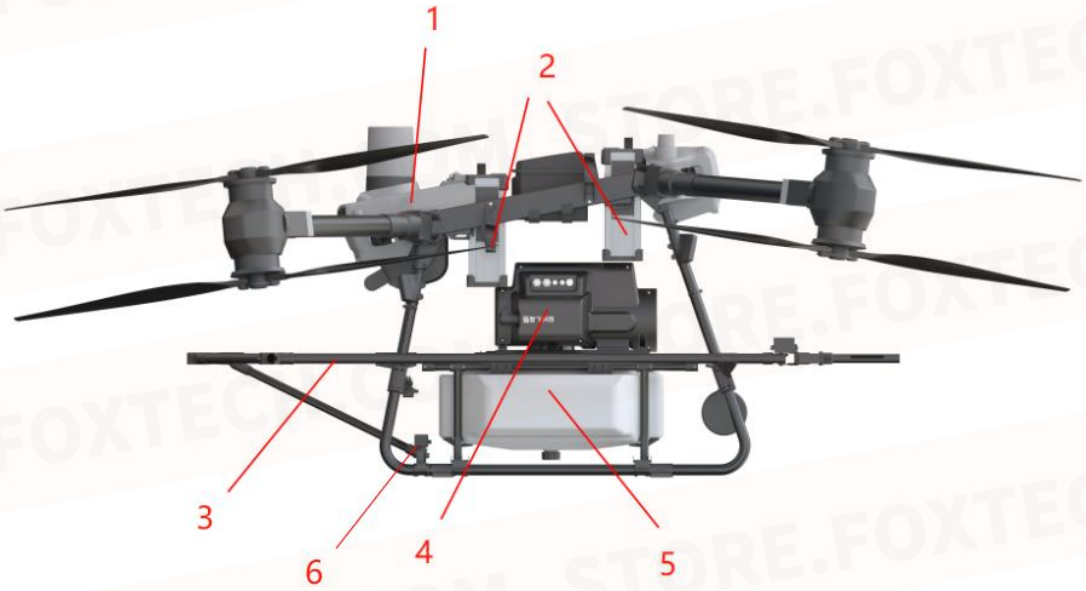
1.1 Product Introduction

The AeroClean F30 is an efficient, safe, and convenient high-pressure cleaning system designed for power distribution equipment, industrial equipment, and other elevated or hard-to-reach areas. Mounted on a drone, it combines precise positioning with advanced water-flow control. Its laser ranging module assists target alignment and displays distance data in real time, improving flight safety and cleaning efficiency.

The F30 uses a high-pressure spray gun powered by the aircraft batteries. The DJI FlyCart 30 features an inclined truss airframe, foldable arms, upper and lower binocular vision systems, front and rear active phased-array radars, a parachute system, a gimbal camera, coaxial dual-propeller motors, and a dual-battery system. When equipped with the F30, it provides an efficient solution for high-pressure insulator cleaning.

The F30 integrates drone operation, high-pressure water cleaning, and laser ranging. It combines aerial mobility with accurate distance measurement to perform cleaning tasks remotely, improving both safety and efficiency. It is suitable for elevated, structurally complex, or hard-to-reach targets, including overhead insulators, large buildings, and wind power equipment.

1.2 Product Overview and Components



No.	Item
1	DJI FlyCart 30 Aircraft (Sold Separately)
2	DB2000 Battery (Sold Separately)
3	Spray Gun Assembly
4	Pump Module
5	Water Tank
6	Laser Ranging Module

1.3 Technical Specifications

Item	Unit	Specification
Dimensions	mm	Spray Gun, Extended: 3000 × 530 × 520 mm Spray Gun, Folded: 1670 × 530 × 520 mm
System Weight	kg	≤20
Foldable Spray Gun		Yes
Power Supply		Aircraft-powered
Operating Voltage	V	48
Flow Rate	L/min	10
Rated Power	W	1500
Operating Pressure	MPa	10
Spray Distance	m	10
Control Method		PSDK Control
Nozzle Direction		Up / Down / Left / Right
One-Tap Centering		Supported
Angle Adjustment		Supported
Nozzle		Replaceable
Compatible Aircraft		DJI FlyCart 30
Drain Valve		Included

2. Product Operation

2.1 F30 Assembly

(1) The F30 uses a quick-release design. Follow the assembly procedure below:

Prepare one DJI FlyCart 30 aircraft, the pump module, and the Spray Gun Assembly bracket. Assemble them as shown below.

Secure the four indicated points. They may be tightened in any order.

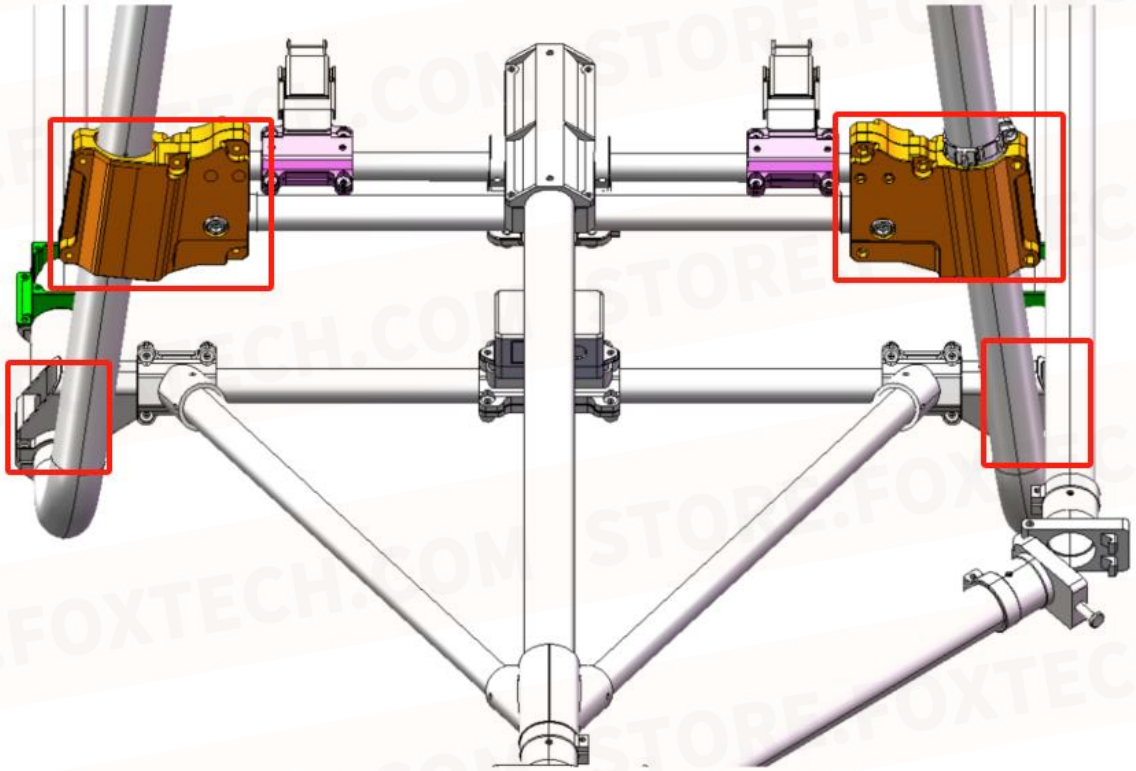


Fig. Locking Points

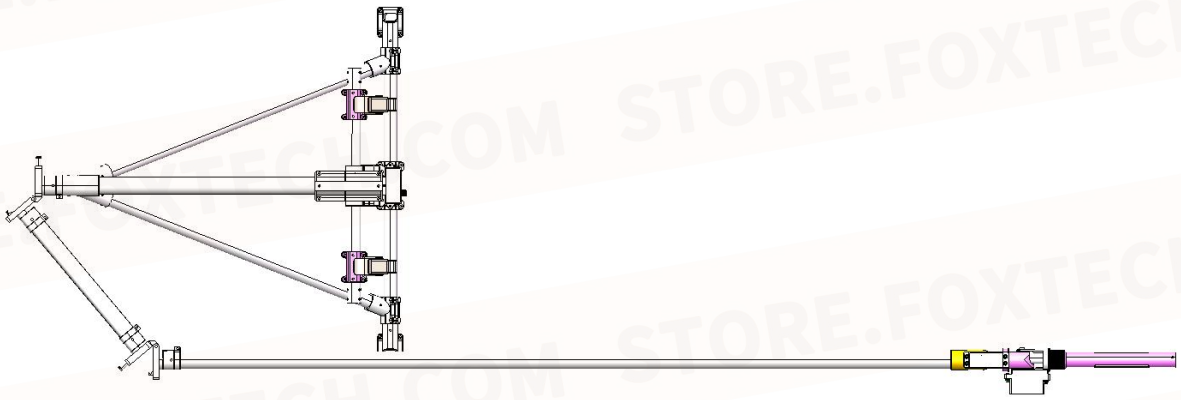


Fig. Spray Gun Assembly Bracket

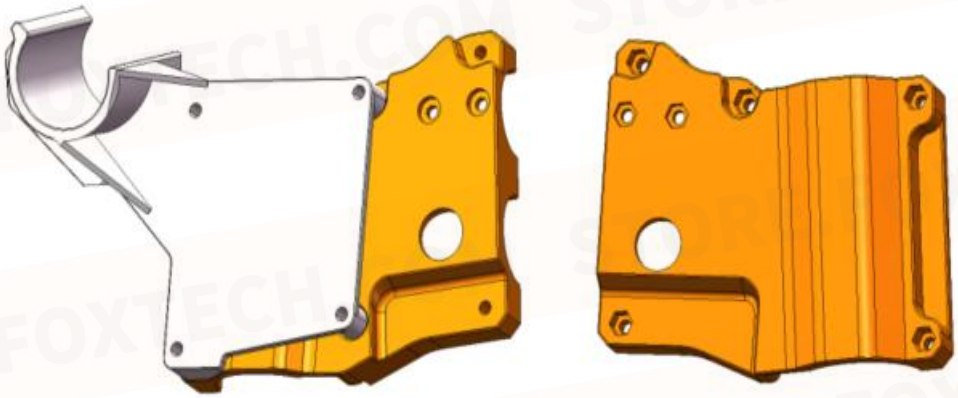


Fig. Bracket Mounting Kit

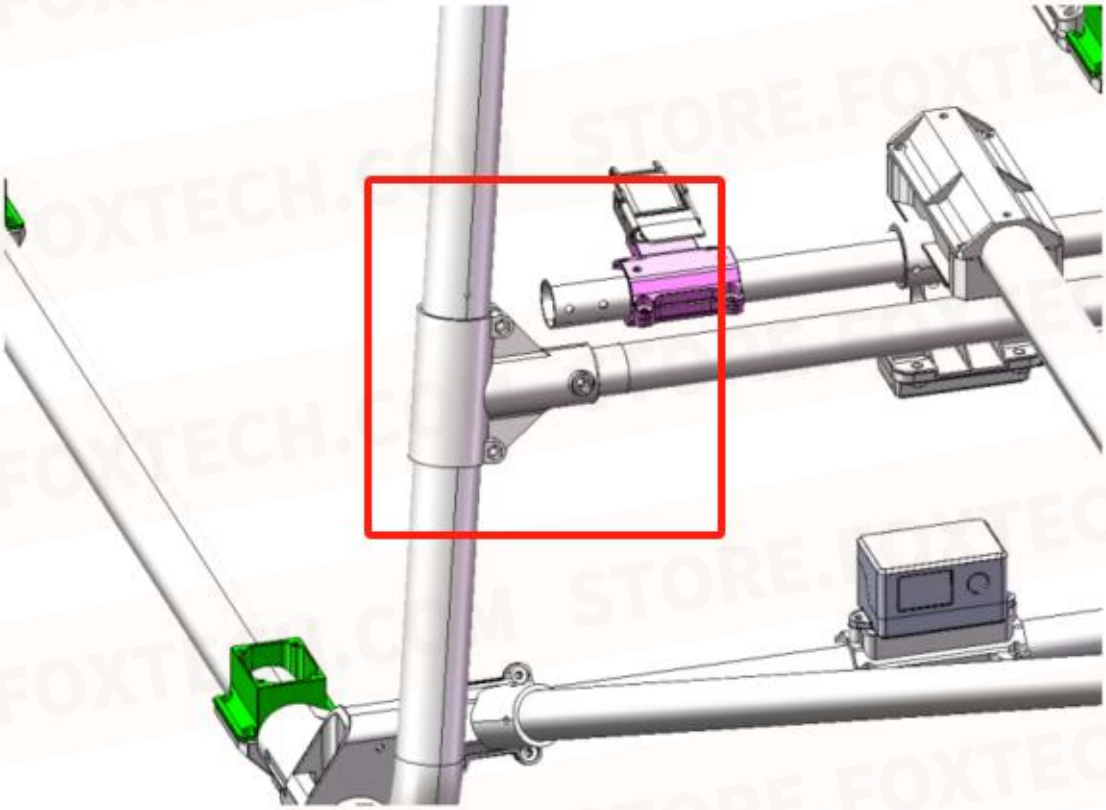


Fig. Locking Point

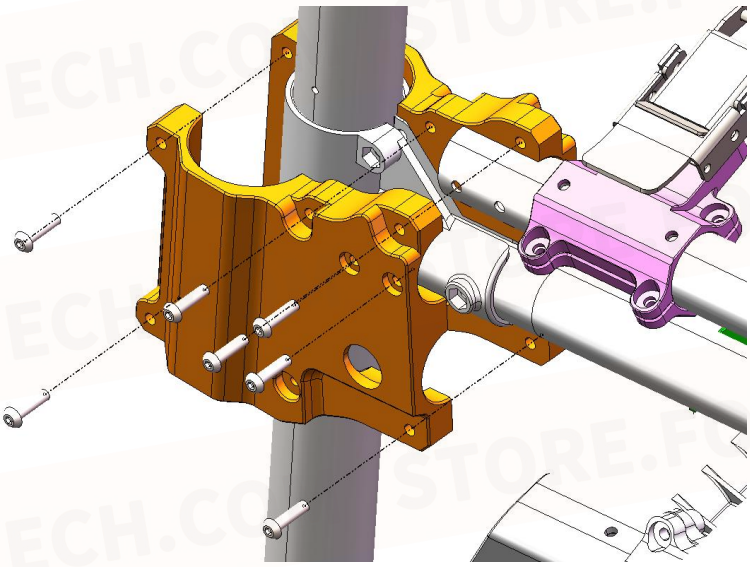


Fig. Screw Installation

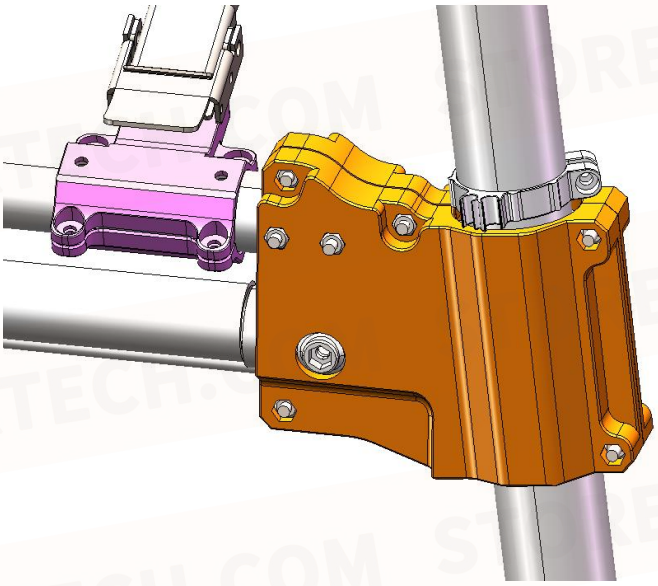


Fig. Screw Fully Tightened

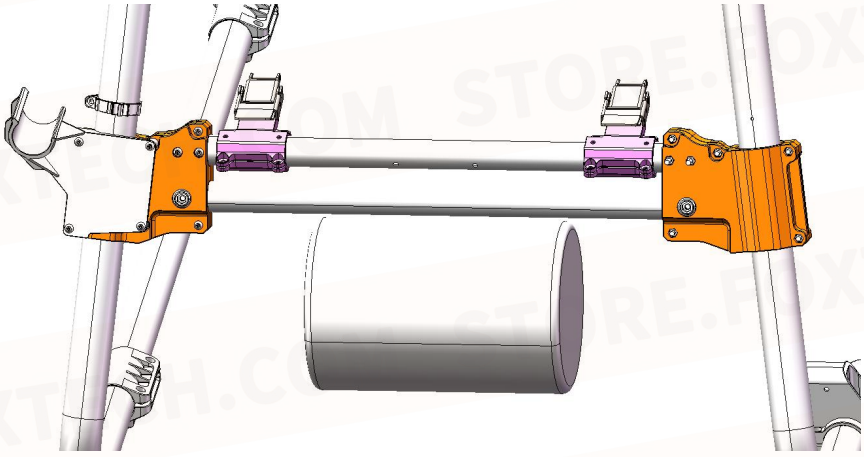


Fig. Rear View

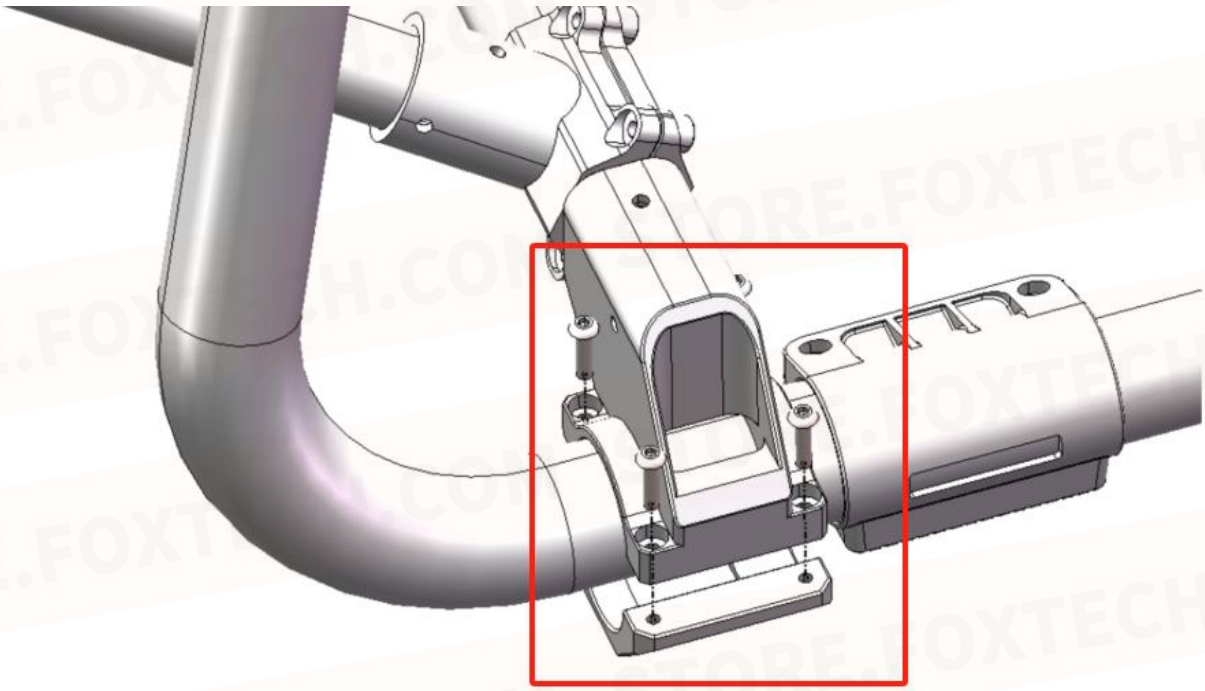


Fig. Tightening the Screw

(2) Position the two sheet-metal brackets as shown and secure each bracket with screws.

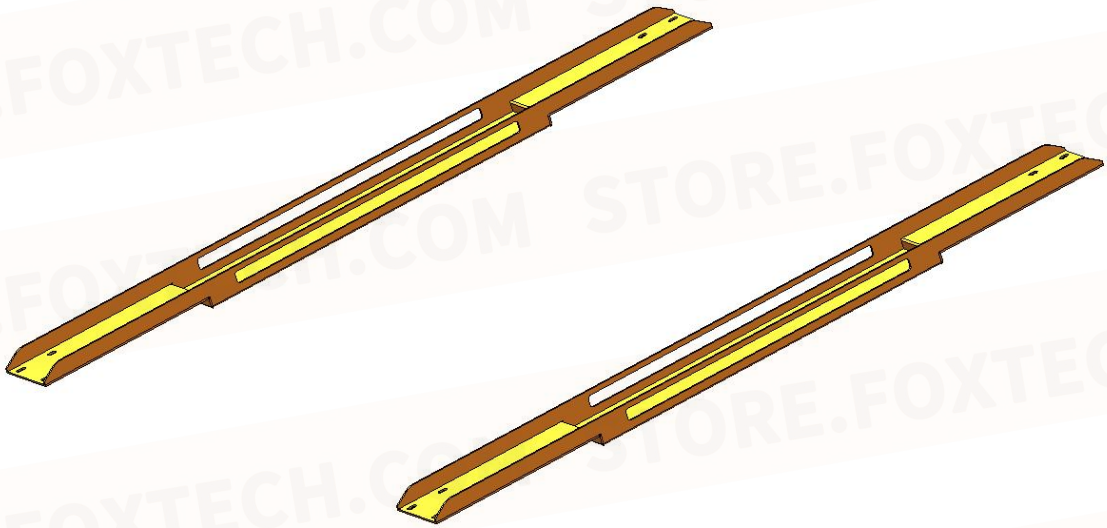


Fig. Base Sheet-Metal Bracket

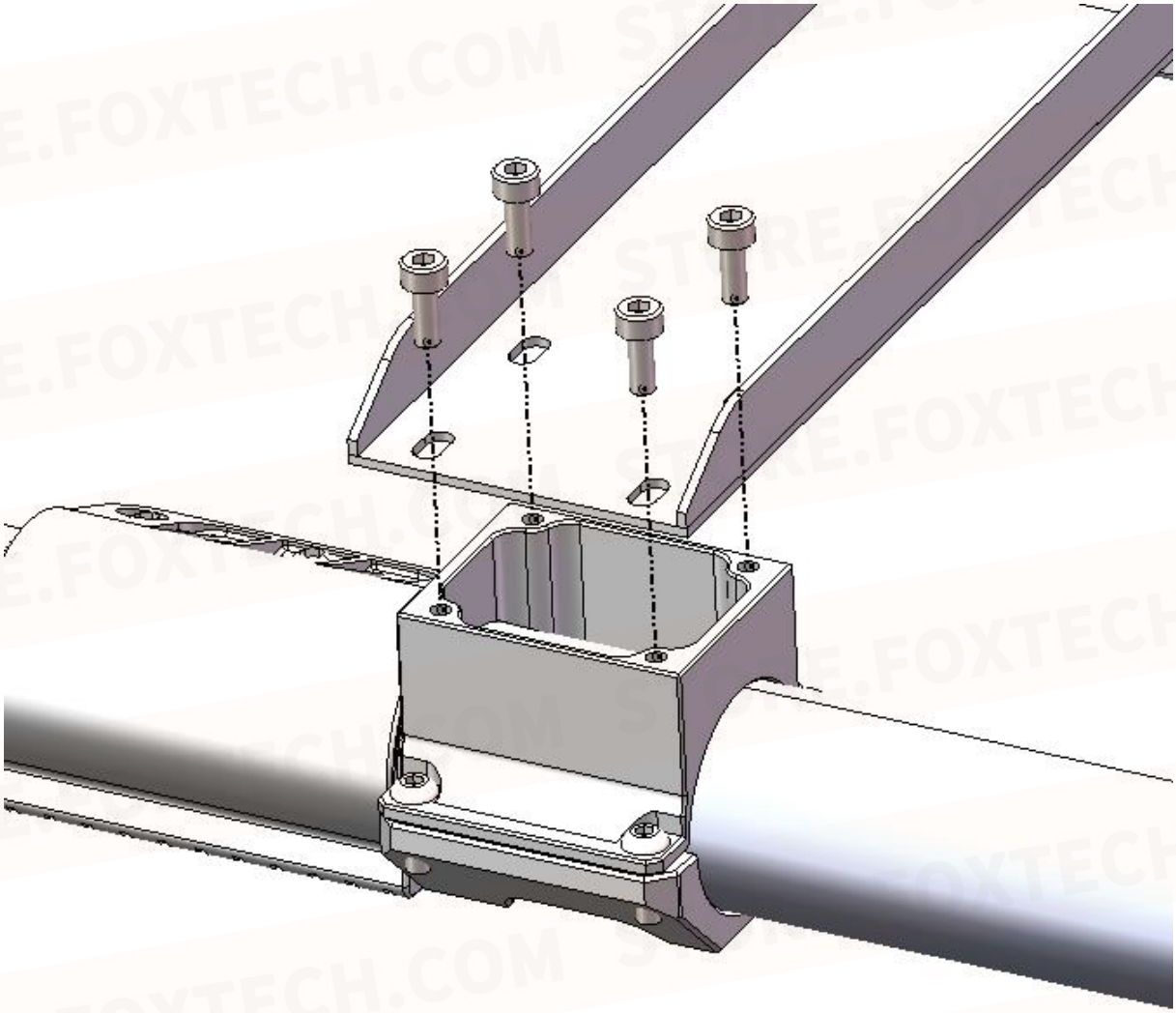


Fig. Installing the Sheet-Metal Bracket

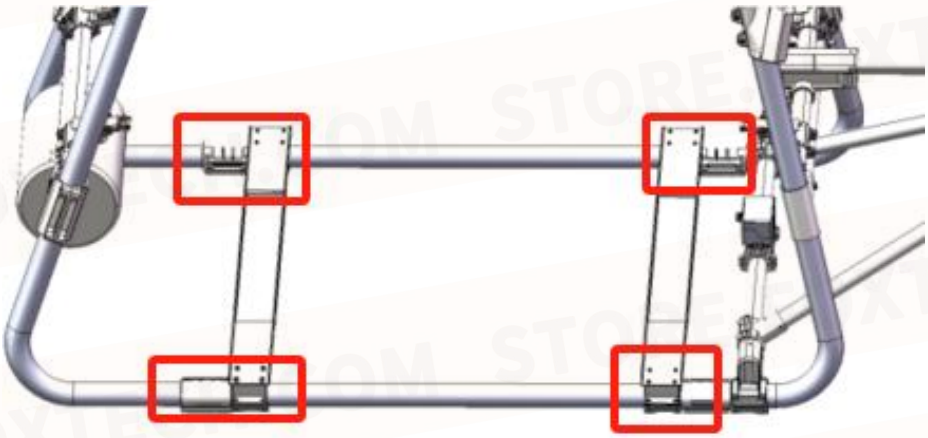


Fig. Four Sheet-Metal Bracket Mounting Points

(3) Place the pump module on the DJI FlyCart 30 base and lock all four quick-release latches at the front and rear. Connect the pump hose to the Spray Gun Assembly hose to establish water flow. Follow the procedure below:

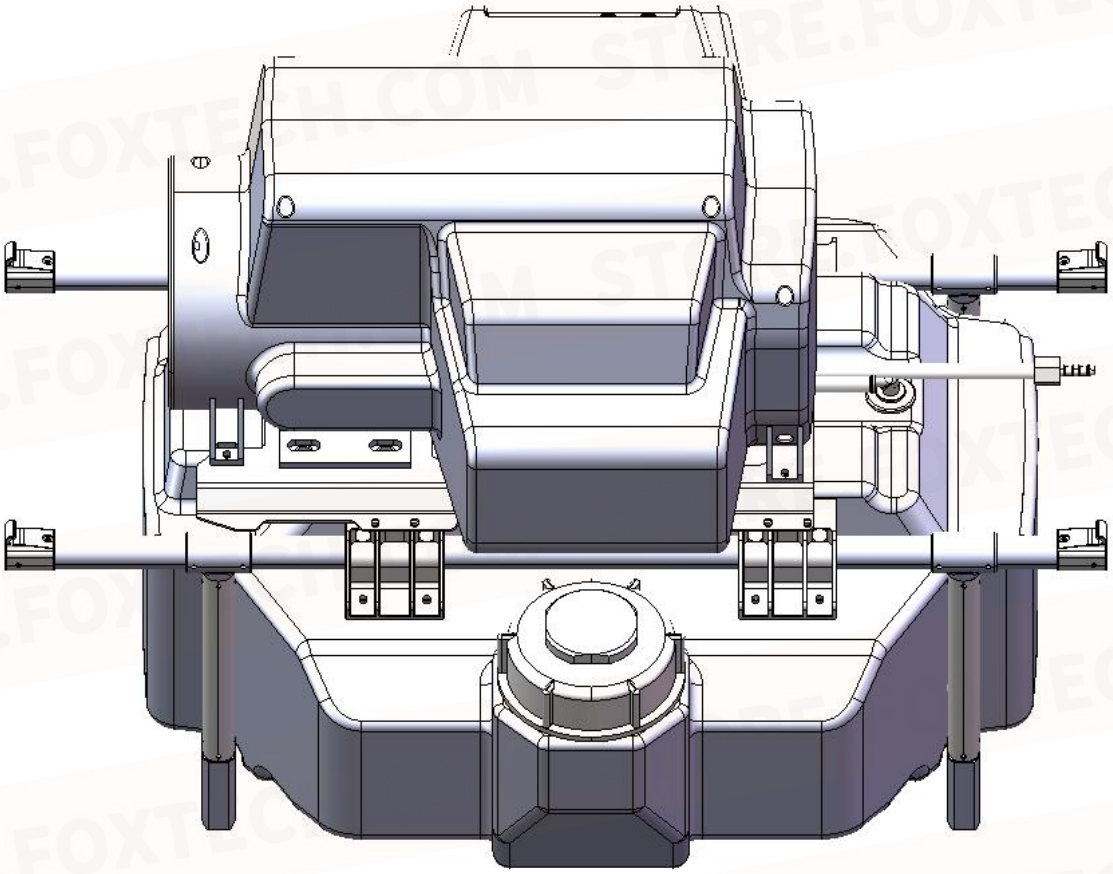


Fig. Pump Module

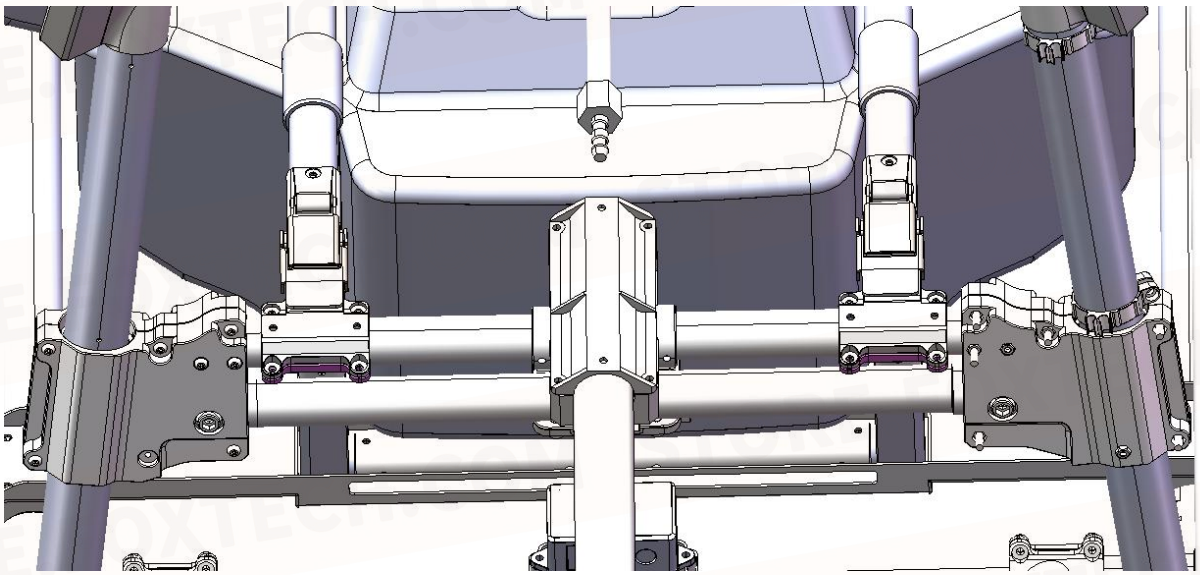


Fig. Pump Module in Position

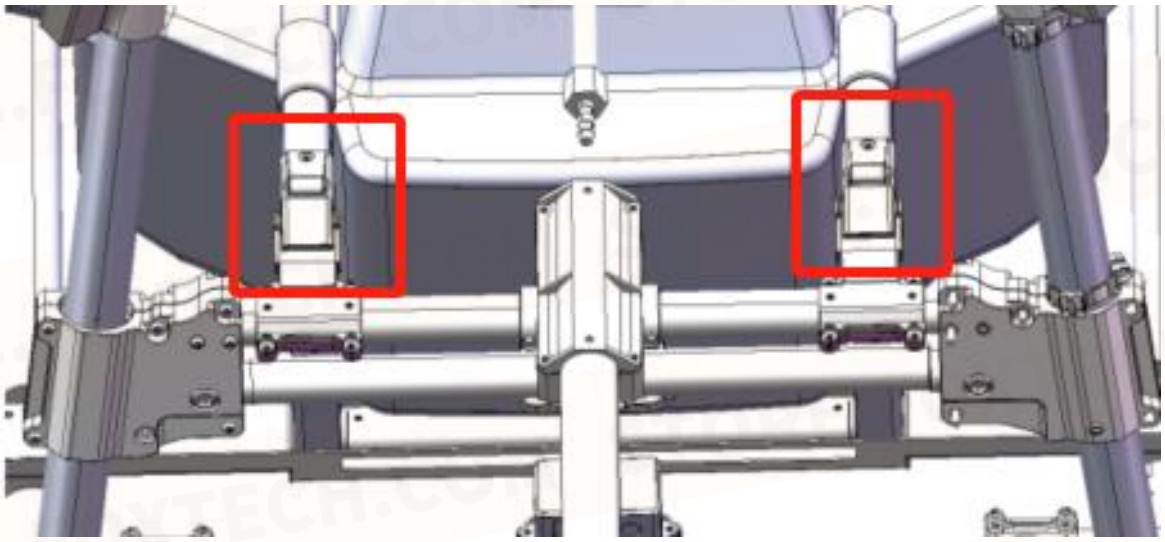


Fig. Locking the Latches

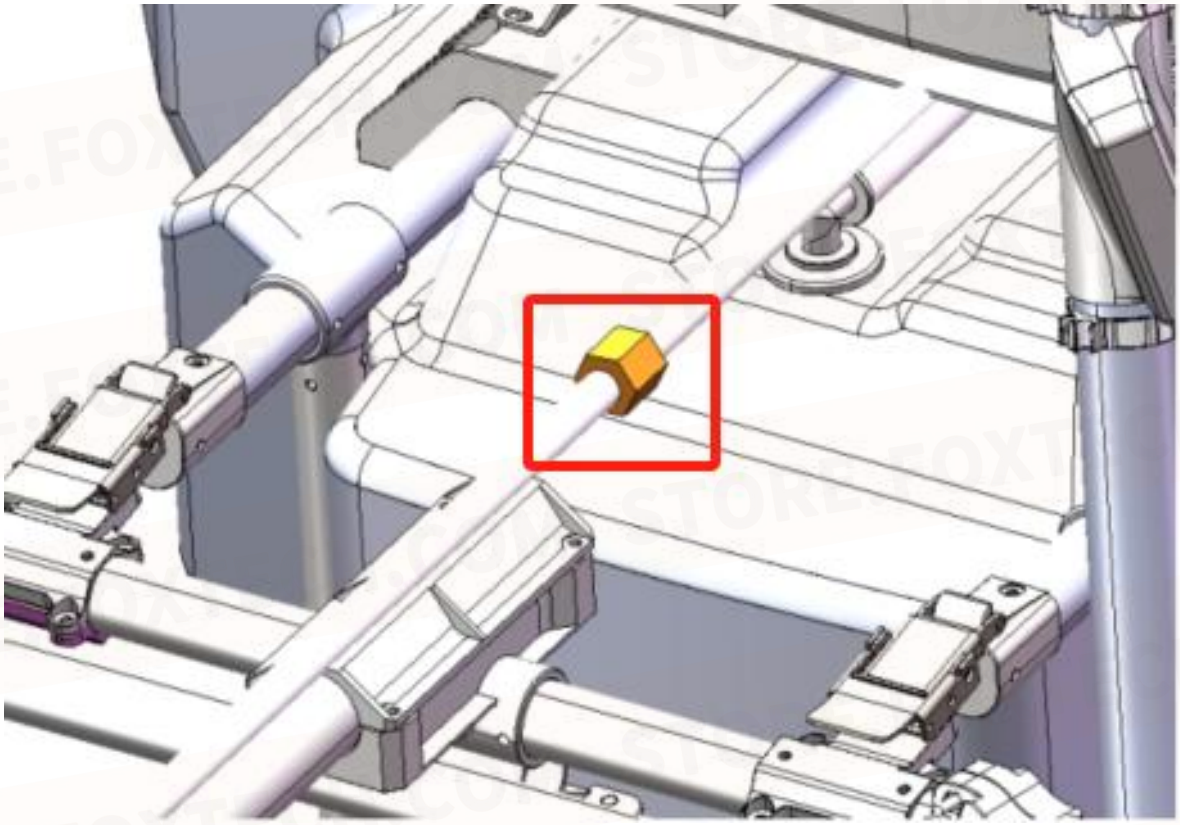


Fig. Hose Connection

(4) Follow the instructions below to fold or extend the spray boom.

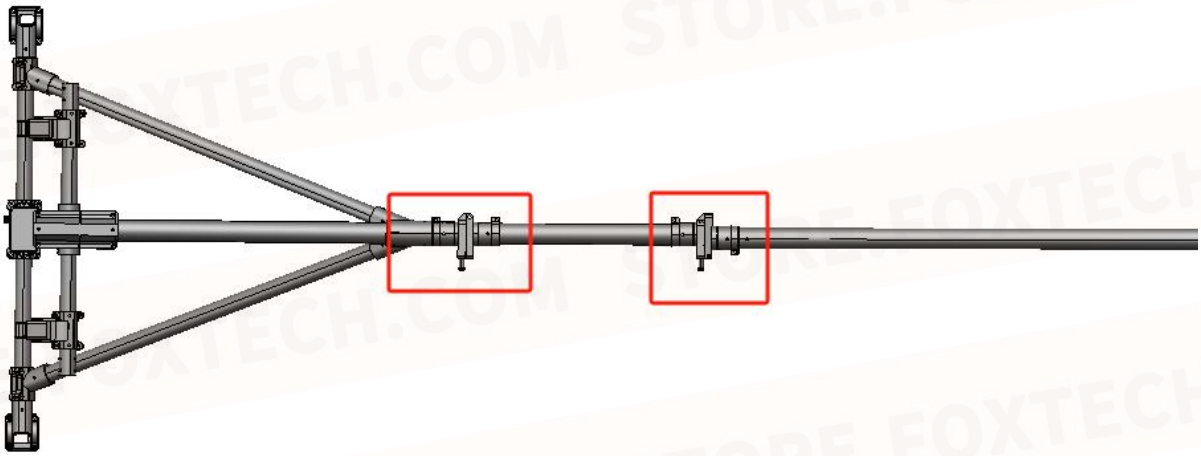


Fig. Spray Gun Assembly Folding Button

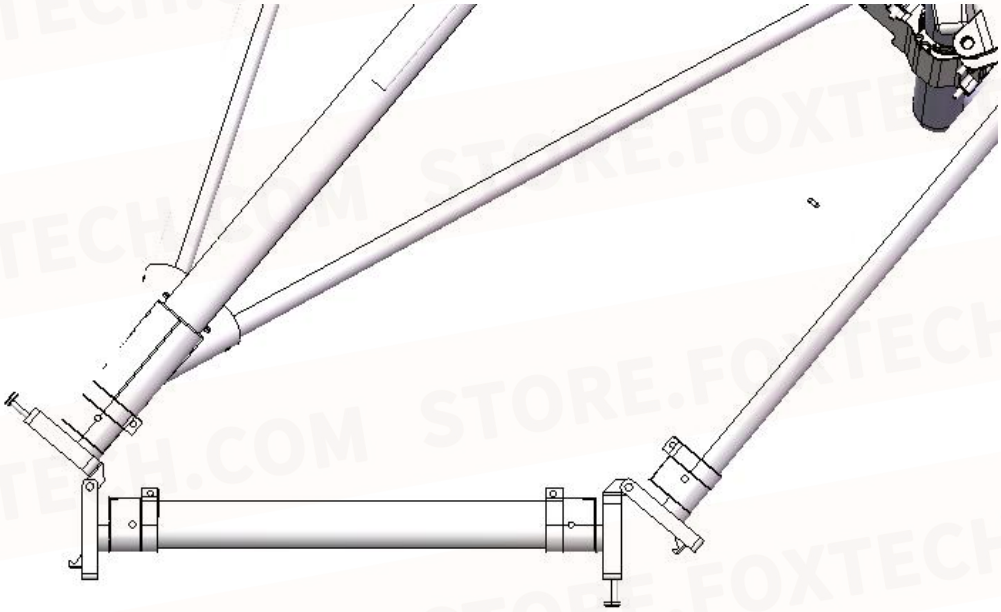


Fig. Spray Boom Folded

(5) The support-rod assembly connects to the spray boom as shown. Remove the indicated cross-drilled screw to separate the spray boom from the support-rod assembly.

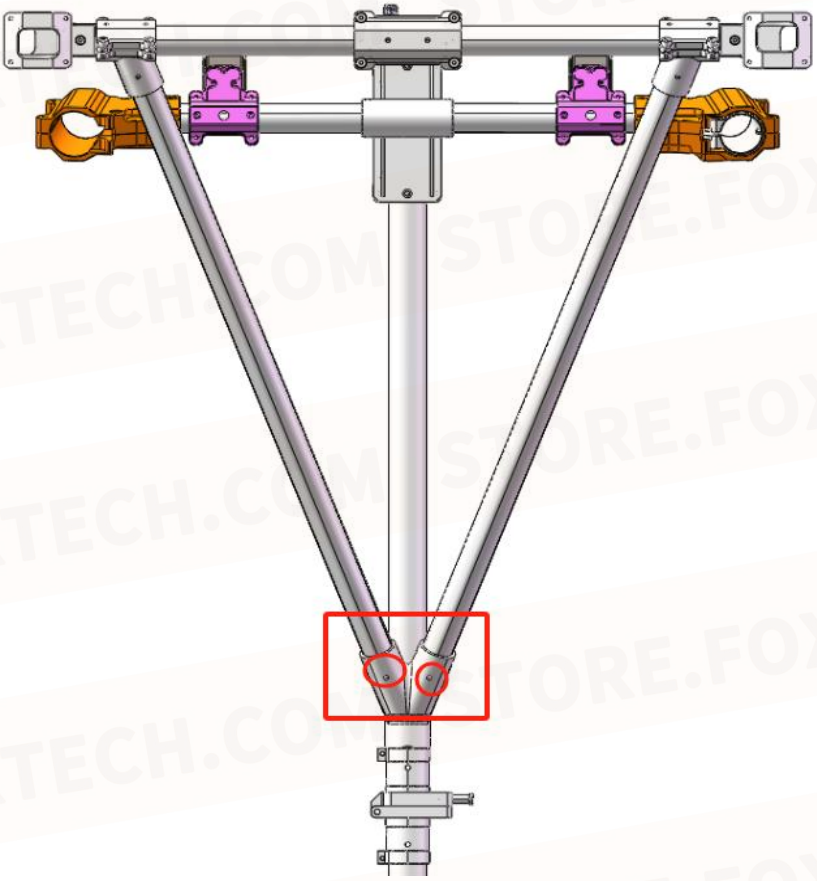


Fig. Support-Rod Connection

Fig. Support-Rod Assembly

(6) Remove the four screws on each side, as shown, to separate the structural components.

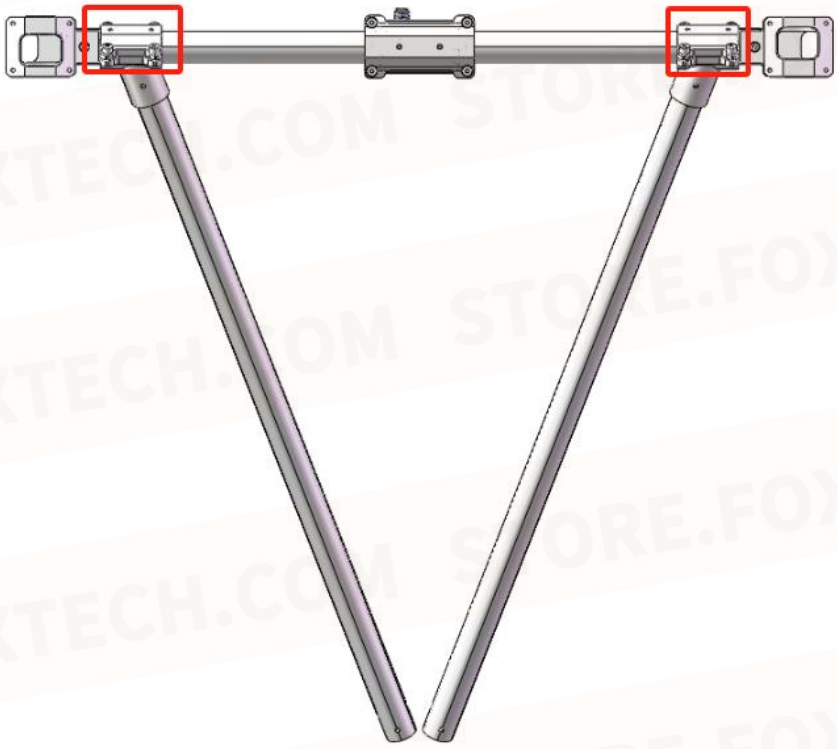


Fig. Support-Rod Assembly

Fig. Support Rod

(7) Install the laser ranging module in the position shown below.

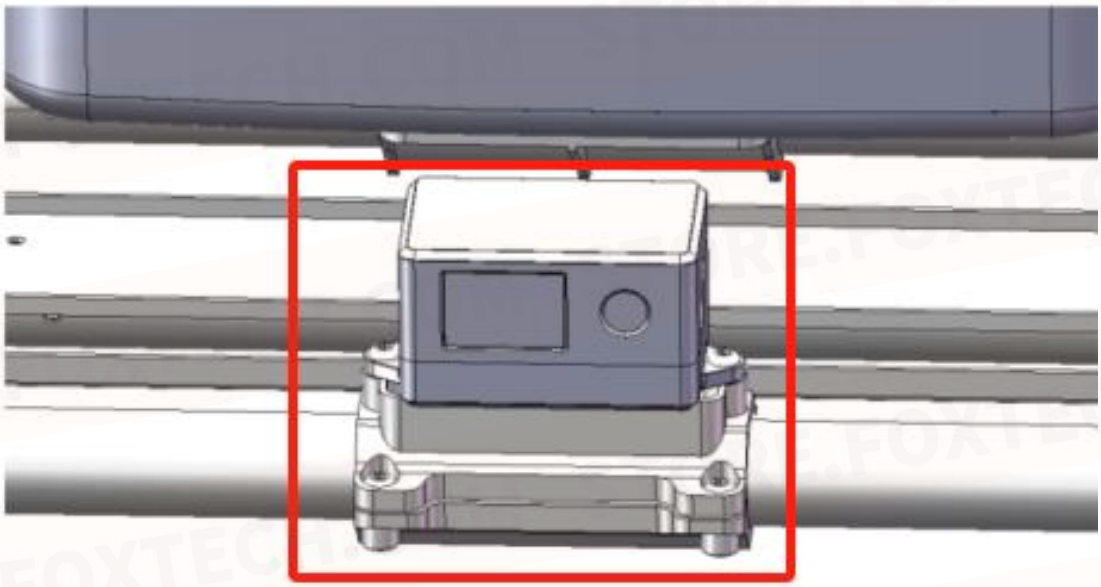


Fig. Laser Ranging Module

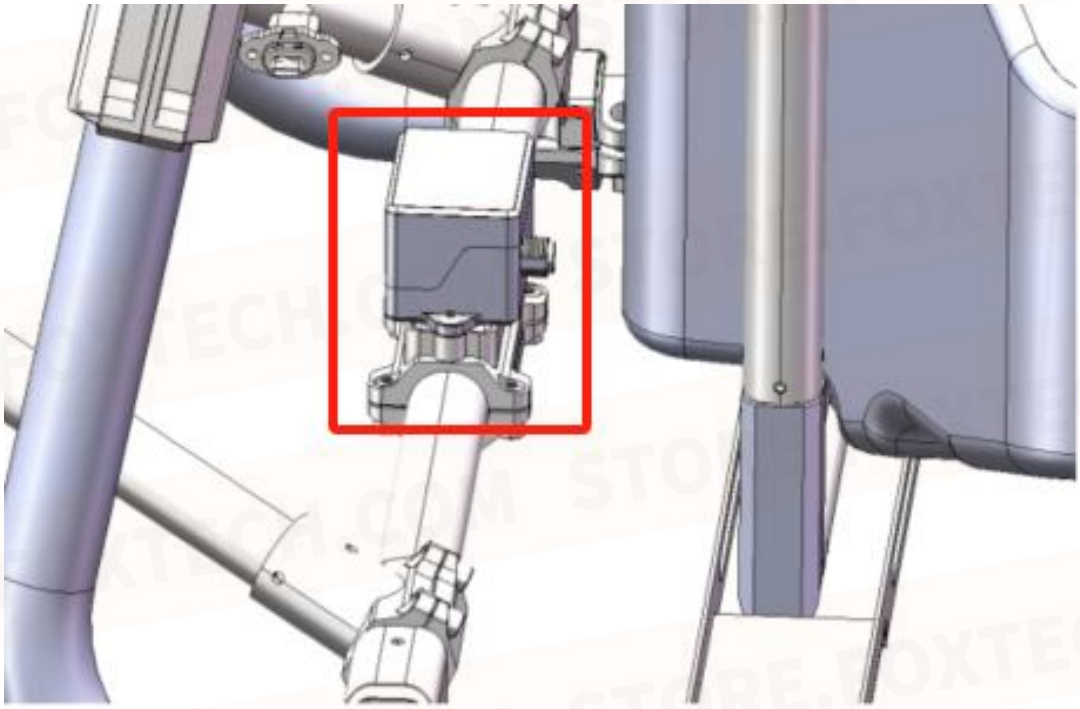


Fig. Laser Ranging Module - Side View

(8) The fully assembled system is shown below.

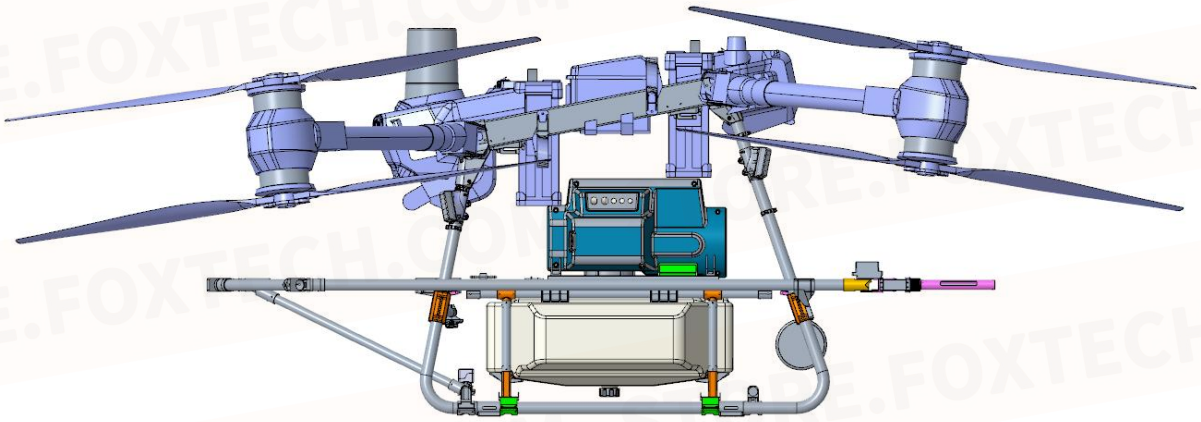


Fig. Fully Assembled System

2.2 Pump Power Supply

(1) The pump is powered by the aircraft batteries. Install the pump power module in the position shown. Secure the power cable to the aircraft bracket and connect the power module to the battery power port at the front of the aircraft. Ensure the cable harness and power connector are firmly installed. Follow this manual exactly when installing the power connector. Before inserting the batteries, install both DJI FlyCart 30 battery supports and tighten the screw on each side with a screwdriver.

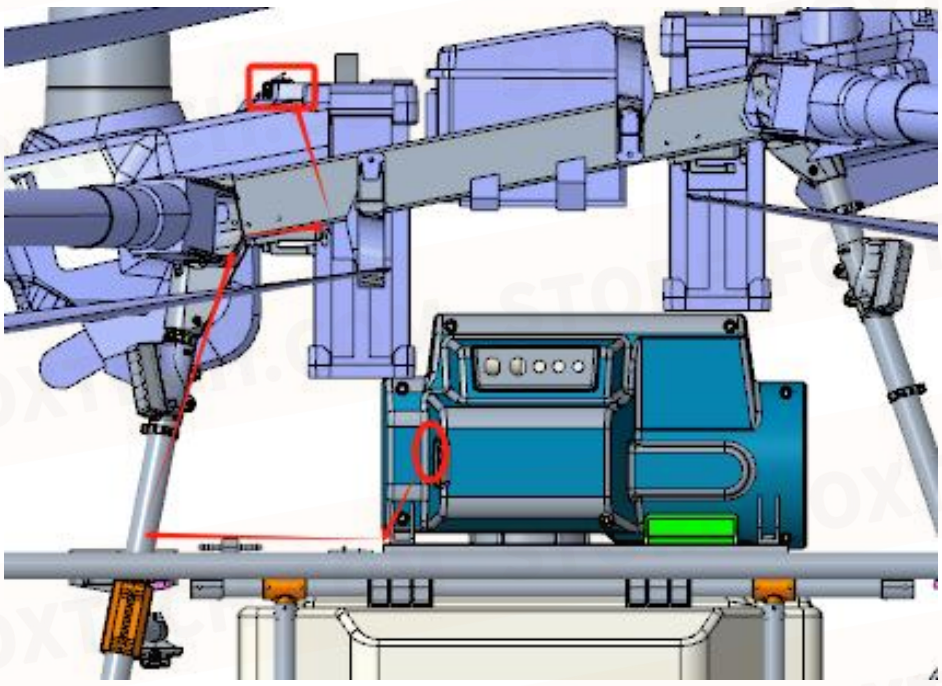


Fig. Power-Cable Routing

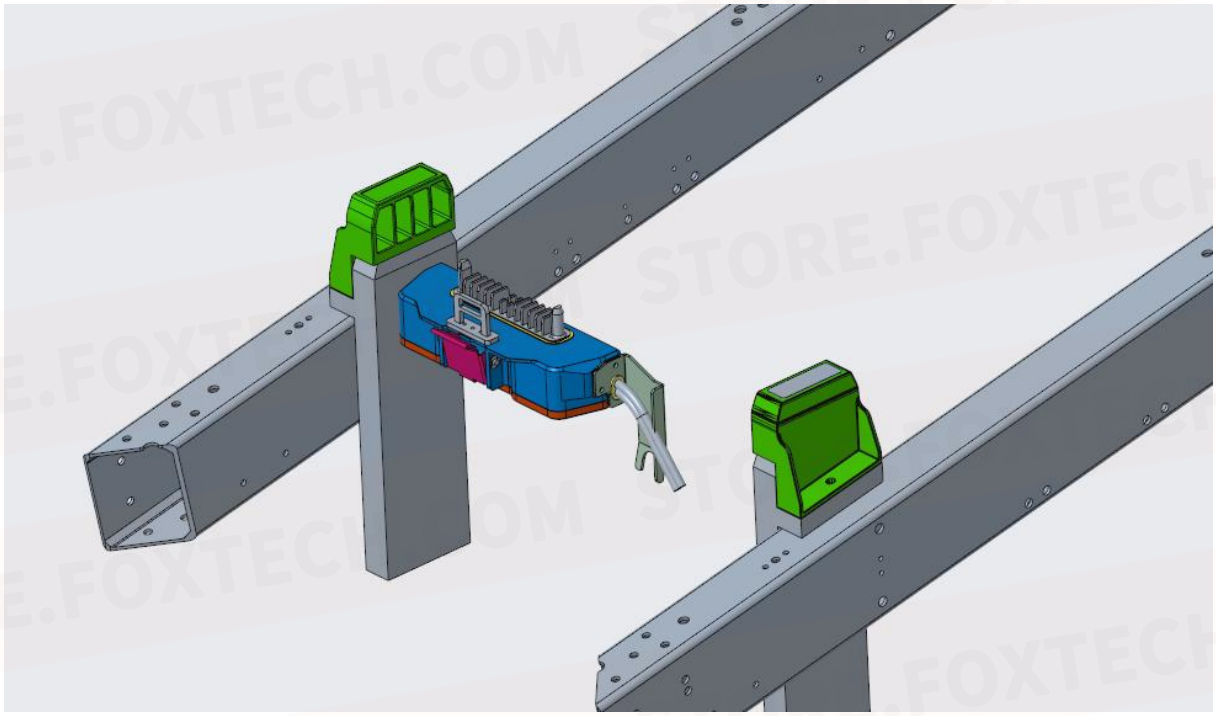


Fig. DJI FlyCart 30 Battery Support

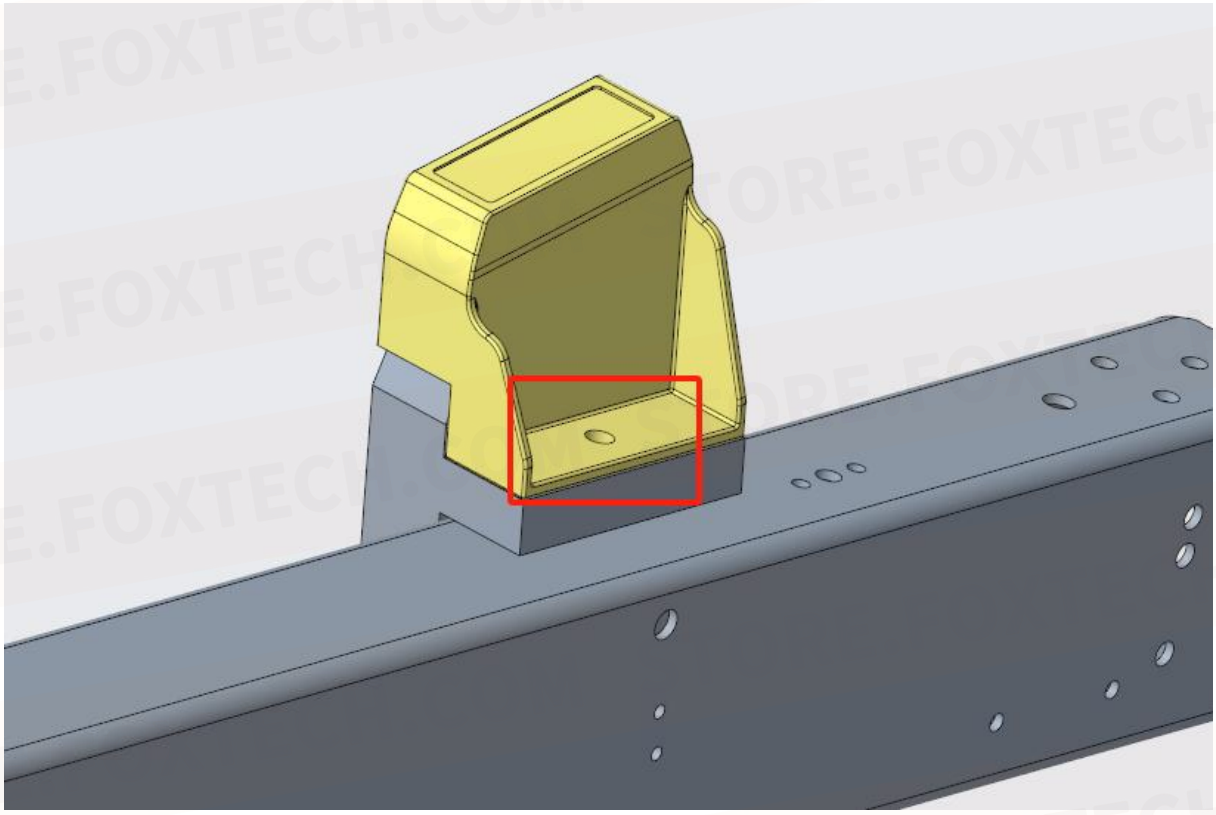


Fig. Support Screw Hole

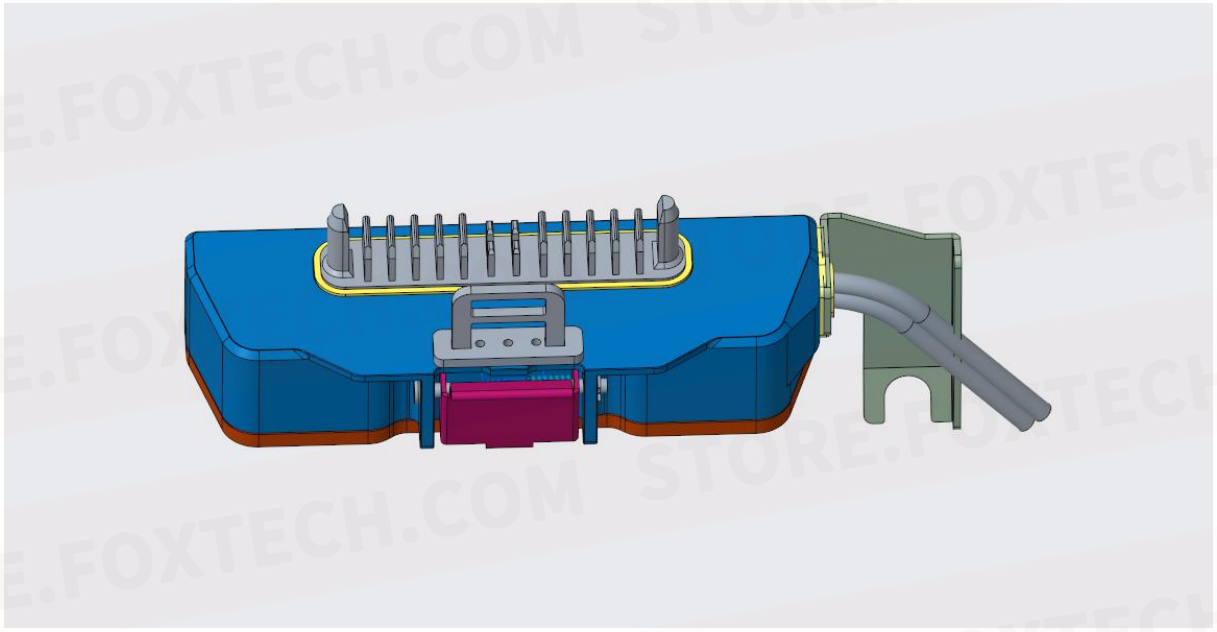


Fig. Pump Power Board

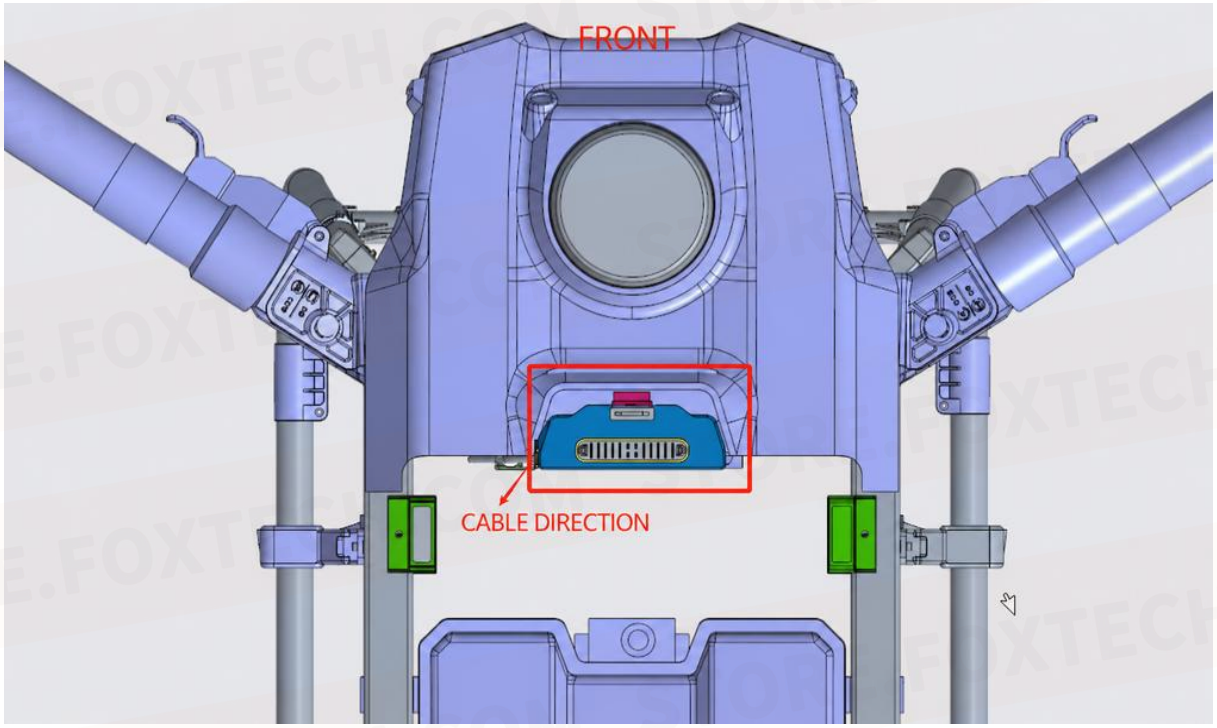


Fig. Pump Power Board Location

(2) In the figure, 1 and 2 are the two directional servos, while 3 and 4 are communication ports. Port 3 is for the laser ranging module, and Port 4 is for pump communication and connects to the front-cover port on the DJI FlyCart 30. Item 5 is the pump power indicator, and Item 6 is the power-cable connector.

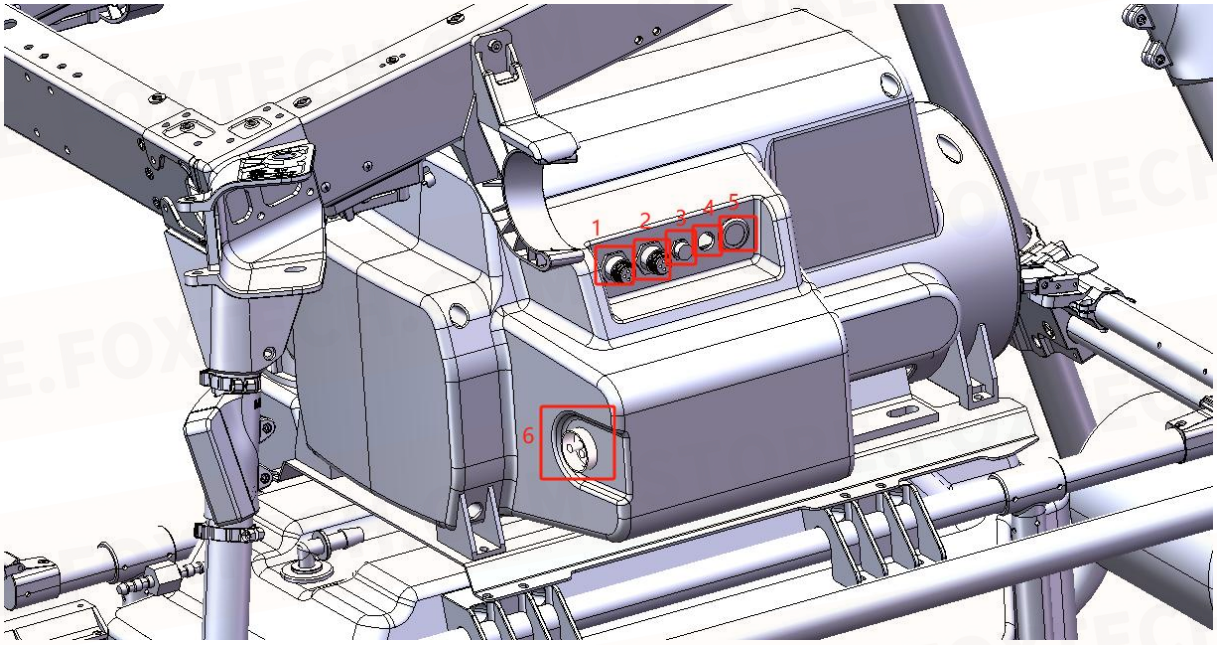


Fig. Pump

Fig. Power Connector and Aviation Connector

(3) The figure shows the communication ports and adapter board. Two communication cables and an isolation board connect the aircraft to the pump. This isolates the pump from the aircraft, reduces mutual interference, and improves system reliability.

To install the isolation board, remove Screws 1 and 2, position the board, and retighten the screws. Connect the two communication cables as shown before operation.

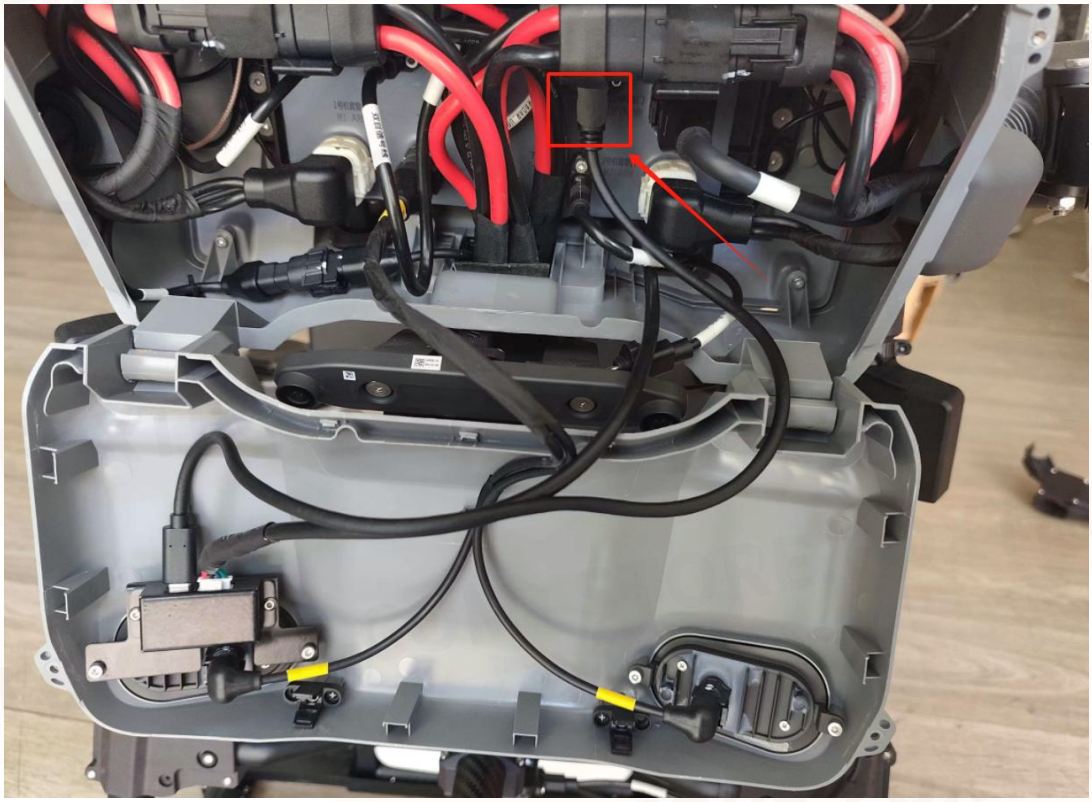


Fig. DJI FlyCart 30 Front Cover and Pump Communication Port

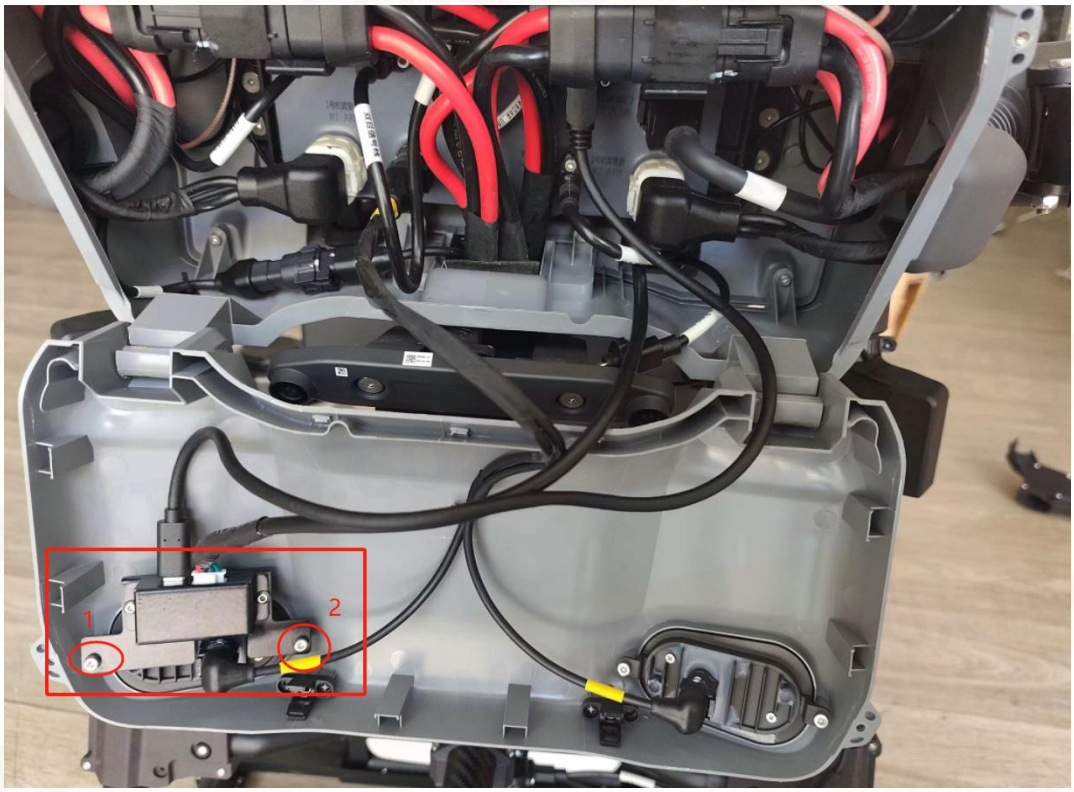


Fig. Isolation Board

2.3 App Interface

(1) Power on and link the remote controller and aircraft. After connecting the cleaning system, the PSDK icon appears as shown, indicating a successful connection.

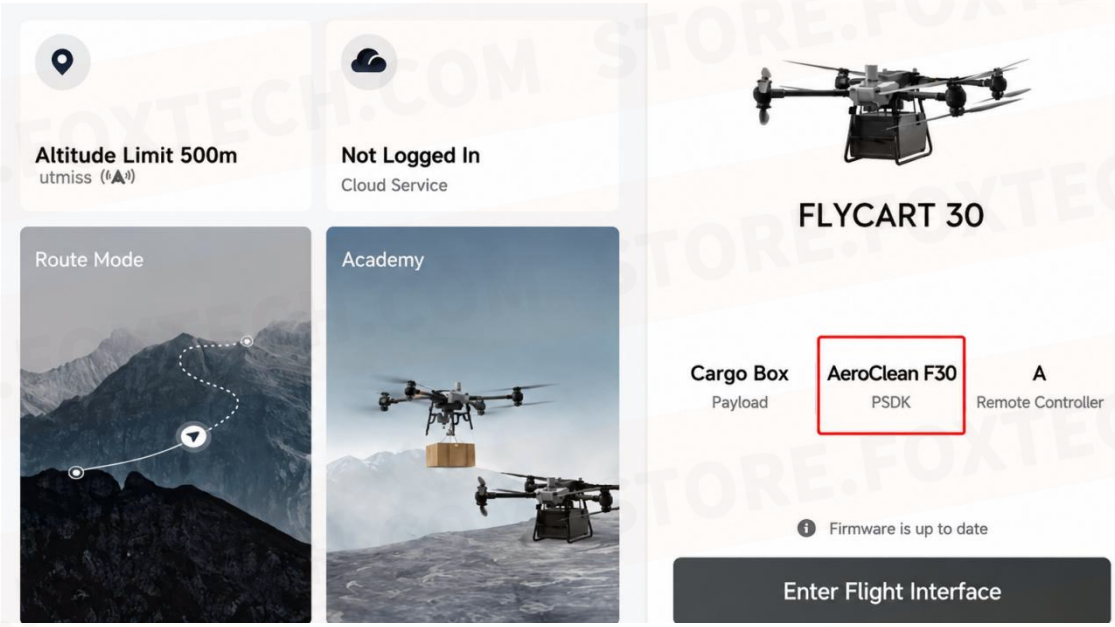


Fig. DJI Pilot 2 Home Screen

(2) On the app interface, tap the PSDK icon to display the control buttons shown below.

2.4 Remote Controller Operation

Fig. Remote Controller Screen

(1) The PSDK control functions are listed below:

No.	Item	Function	Remarks
1	Information Panel	Displays operating time and laser-ranging distance on the left side when enabled.	Pump operating time is cumulative.
2	Pump Switch	Tap to start the pump; tap again to stop it.	
3	Vertical Control	Moves the nozzle up or down.	
4	Horizontal Control	Moves the nozzle left or right.	
5	Center Nozzle	Returns the nozzle to center.	
6	Shortcut Button Switching	Switches to manual button control.	See below.
7	Laser Ranging	Turns the laser ranging light on or off.	

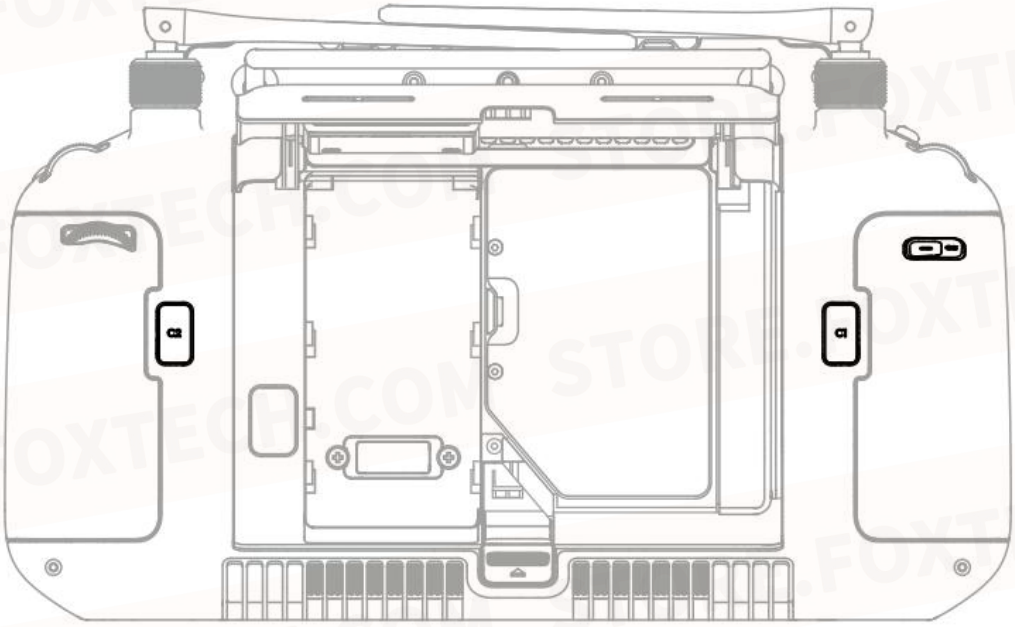


Fig. Rear of the Remote Controller

The figure shows the rear of the DJI RC Plus. Use “Shortcut Button Switching” in the PSDK panel to switch from touchscreen nozzle control to manual button control. During cleaning, press C3 to select horizontal control: C1 moves the nozzle left and C2 moves it right. Press C3 again to select vertical control: C1 moves the nozzle up and C2 moves it down. Note: On the touchscreen, the up/down keys control horizontal movement, while the left/right keys control vertical movement.