XAG P100 Pro

Type: 3WWDZ-50AH

Disclaimer and Safety Guidlines

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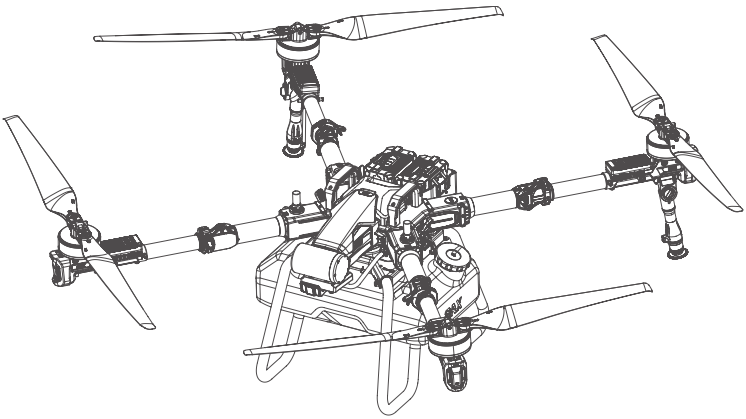


XAG AUSTRALIA

Disclaimer and Warnings

This User Manual / Pilot Operating Handbook ("Handbook") is provided for the XAG P100 Pro ("Product") by XAG ("Company"). The Product is not a toy and is not suitable for children under the age of 18. Adults should keep the Product out of reach of children and exercise caution when operating this Product in the presence of children.

The Product is a multirotor flying platform designed for agricultural applications in farmland, woodland, and orchards only. It is crucial to read and understand all materials associated with the Product before its first use. These documents are included in the product package and are also available online on the Company's product page.

Failure to read and follow the instructions in this Handbook may result in serious injury to yourself and/or others, and damage to your Products and/or other objects in the vicinity. By using this Product, you hereby signify that you have read this disclaimer and the Handbook carefully and that you understand and agree to abide by all terms and conditions of this document and all relevant documents of this product. You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof.

NO ADVICE OR INFORMATION, WHETHER ORAL OR WRITTEN, OBTAINED BY YOU FROM THE PRODUCT, PRODUCT ACCESSORIES, OR ANY MATERIALS WILL CREATE ANY WARRANTY REGARDING THE PRODUCT THAT IS NOT EXPRESSLY STATED IN THESE TERMS. YOU ASSUME ALL RISKS FOR ANY DAMAGE THAT MAY RESULT FROM YOUR USE OF OR ACCESS TO THE PRODUCT, PRODUCT ACCESSORIES, AND ANY MATERIALS. YOU UNDERSTAND AND AGREE THAT YOU USE THE PRODUCT AT YOUR OWN DISCRETION AND RISK, AND THAT YOU ARE SOLELY RESPONSIBLE FOR ANY PERSONAL INJURY, DEATH, DAMAGE TO YOUR PROPERTY OR THIRD-PARTY PROPERTY, OR THE LOSS OF DATA THAT RESULTS FROM YOUR USE OF OR INABILITY TO USE THE PRODUCT. SOME JURISDICTIONS MAY PROHIBIT A DISCLAIMER OF WARRANTIES AND YOU MAY HAVE OTHER RIGHTS THAT VARY FROM JURISDICTION TO JURISDICTION.

The Company reserves the rights for final interpretation and revision of the Terms and conditions herein to the extent permitted by law. XAG also reserves the right to update, modify or terminate these terms and conditions via its official website without prior notice.

XAG reserves the right to update this disclaimer and safety guidelines. Visit the Company's website periodically for the latest version. This disclaimer is available in various languages. In the event of divergence among different versions, the Chinese version shall prevail.

This document and all other collateral documents are subject to change without prior notice at the sole discretion of XAG.

LIMITATION OF LIABILITY

The Company shall not be liable for any indirect, incidental, special, consequential or punitive damages (including damages for loss of profits, goodwill, or any other intangible loss) arising out of or relating to your access to or use of, or your inability to access or use, the Product, Product accessories, or any materials, flight environment data, whether based on warranty, contract, tort (including negligence), statute, or any other legal theory.

Except as otherwise agreed upon between you and the Company, the aggregate liability of the Company to you for all claims arising out of or relating to the use of or any inability to use any portion of the Product or otherwise under these terms, whether in contract, tort, or otherwise, is limited to $100.

DATA STORAGE AND USAGE

When you use our mobile apps or our products or other software, you may provide the Company with data regarding the use and operation of the product, such as flight telemetry data (e.g., speed, altitude, battery life, and operations record. Refer to the Company's Privacy Policy for more information.

Individual Parts

Regarding Genuine and Functional Parts

⚠ WARNING

To ensure optimal performance and safety when operating XAG Agricultural Drones, strictly adhere to the following guidelines:

⚠ **EXCLUSIVELY USE AUTHENTIC XAG COMPONENTS:** It is essential that only genuine XAG components or those certified by XAG are utilized. The use of unauthorized parts, or those from manufacturers not certified by XAG, may result in system malfunctions and compromise safety. Any deviation from this guideline will result in the forfeiture of warranty repair services, and XAG shall assume no liability for any associated losses incurred.

⚠ **PURCHASE FROM AUTHORIZED LOCAL RESELLERS:** Authentic XAG components must be procured exclusively from authorized local resellers. Components acquired from overseas sources, irrespective of claims of authenticity, will lead to the forfeiture of warranty repair services, and XAG shall assume no liability for any related losses incurred.

⚠ **ENSURE COMPONENTS ARE FREE FROM FOREIGN OBJECTS:** Prior to each operation, it is crucial to verify that no foreign objects, such as water, oil, soil, or sand, have infiltrated the aircraft or its components.

⚠ **MAINTAIN EQUIPMENT IN OPTIMUM CONDITION:** It is the operator's responsibility to ensure that the aircraft and all components are functioning correctly and are free from damage. Key components include the remote controller, compass, propulsion system, radar modules, and spraying system.

Purchasing components from unauthorized sellers, including those commonly found on e-commerce platforms such as eBay, Alibaba, or similar websites, poses significant risks. Any components sourced from sellers outside your region, country, or from those who are not officially authorized by XAG, are deemed non-authentic. The use of such parts will immediately void any product warranty and can result in system malfunctions, performance degradation, or complete operational failure. These issues not only jeopardize the safe functioning of the equipment but also expose the operator to serious safety hazards, including the potential for personal injury or property damage. Furthermore, the use of non-certified components may result in legal liability, including regulatory fines or legal action, particularly in instances where such failures cause harm or occur in regulated environments.

For the safe, reliable, and lawful operation of your XAG Agricultural Drone, strict adherence to these guidelines is essential. It is imperative that the authorization status of any seller is verified before purchasing components, and that only reputable, certified sources are used. In Australia, authorized XAG resellers can be located through the official network found at https://www.xag-au.com/network. As your drone is a sophisticated piece of equipment, compromising its performance with uncertified parts or services is ill-advised. Always prioritize safety and compliance by using only genuine, XAG-certified components.

Remote Controller

⚠ WARNING

OPERATIONAL SAFETY:

01. Port Usage: Ports on the remote controller must be used strictly in accordance with their designated specifications.

02. Internet Connectivity: Regular internet access, via WI-FI or a SIM card, is mandatory for the remote controller. Failure to maintain this connection may result in XAG being unable to provide warranty repair services, and any resultant losses will not be the responsibility of XAG.

03. Joystick Protocols: Under no circumstances should the joysticks be activated to start the motors when the aircraft is airborne.

PHYSICAL INTEGRITY:

01. Charging Precautions: Ensure the remote controller is sufficiently charged prior to each flight. Any exposure to moisture, especially during charging, is strictly prohibited.

02. Antenna Positioning: Antennas must be correctly positioned for optimal data transmission. Ensure no obstructions block or cover the folding antennas or the external GNSS antenna.

03. Handling & Storage: The remote controller must always be held by the pilot and should never be placed on objects for transmission. Store in a location free from potential damage.

Notes

OPTIMAL USAGE:

01. Data Transmission: Prior to take-off, ensure your phone is connected to the remote controller's WI-FI.

02. Transmission Quality: Utilize the XAG One APP to select the ideal transmission channel based on the environment. Adjust the antenna's position or relocate to an obstruction-free environment if signal strength weakens.

03. Replacement Protocols: When utilizing a replacement remote controller, it must be linked to the aircraft and tested for a minimum transmission distance of 400 m.

04. Battery Maintenance: The internal batteries of the remote controller should be fully charged at least once every three months. If a triple-beeping sound is detected, immediate charging is required. Batteries should be charged promptly if they reach 20% to prevent over-discharge damage.

Aircraft Airframe

⚠ WARNING

PORT AND CONNECTOR INTEGRITY:

⚠ Port Compliance: All ports on the aircraft body must be utilized in strict accordance with their designated specifications. Any deviation can lead to severe operational malfunctions.

⚠ Short Circuit Prevention: Under no circumstances should the ports and connectors on the aircraft body be subjected to conditions that might induce a short circuit.

ANTENNA AND RADIO INTERFERENCE:

⚠ Operational Environment: The aircraft must be operated in environments devoid of radio interference. It is imperative that onboard antennas remain unobstructed during all operational phases.

⚠ USB-C Port Protection: If the USB-C port is not actively in use, the waterproof cover must be securely attached to prevent potential water ingress and subsequent short circuits.

ARM FOLDING AND UNFOLDING PROTOCOLS:

⚠ Unfolding Directives: For the M1 and M4 arms, the M4 arm must be unfolded first, followed by the M1 arm. For the M2 and M3 arms, the M3 arm must be unfolded first, followed by the M2 arm.

⚠ Folding Directives: For the M1 and M4 arms, the M1 arm must be folded first, followed by the M4 arm. For the M2 and M3 arms, the M2 arm must be folded first, followed by the M3 arm.

Propulsion System

⚠ WARNING

PROPELLERS:

⚠ Mandatory Inspection: Prior to every flight, conduct a rigorous assessment of the propellers. Any propellers exhibiting signs of wear, chipping, or breakage must be immediately replaced.

⚠ Strict Safety Protocols: Under no circumstances should the aircraft be powered on when handling propellers. Exercise extreme caution due to the inherent sharp edges of the propellers.

⚠ Operational Directives: Before initiating any flight, it is imperative that propellers are securely anchored and fully extended. Maintain a significant distance from operational propellers to avert potential harm.

MOTORS:

⚠ Installation & Functionality: It is essential to ascertain that motors are firmly affixed and operate without any hindrance. Ventilation apertures on the motors must remain unobstructed at all times.

⚠ Safety Directives: Any alterations or modifications to the motor structure are strictly prohibited. Post-operational motors can reach elevated temperatures; any interaction should be approached with utmost caution.

Ⓝ Notes

Maintenance Protocol: Motors must be consistently kept devoid of dust and any potential external impediments.

Terrain-Following Radar

⚠ WARNING

DEVICE INTEGRITY:

⚠ Cleanliness: Ensure the terrain following radar and its wires are clean. Keep them away from chemicals and dust to make sure they work correctly.

OPERATIONAL PROTOCOLS:

⚠ Inclined Surfaces: When navigating over inclined terrains, the aircraft's operational speed must be judiciously reduced. Consult the aircraft's specifications for detailed guidance on permissible speeds.

⚠ Operational Height Limitation: The functionality of the terrain following radar is restricted and will be rendered non-operational at altitudes exceeding 30 m.

⚠ Vegetation Proximity: The radar is designed to maintain a predetermined distance from vegetation solely within its designated working range. Continuous vigilance is required to monitor the aircraft's proximity to vegetation, ensuring adherence to safety protocols.

⚠ Strict adherence to these directives is paramount for the safe and efficient utilization of the Terrain Following Radar.

Radar Module

⚠ WARNING

OPERATIONAL CAUTIONS:

⚠ Variable Effectiveness: The effectiveness and detection range of the radar system are subject to variability due to numerous factors. These factors include, but are not limited to, the material composition, shape, location, form, and size of obstacles such as trees. Additionally, the aircraft's speed and altitude may further influence these parameters. Detailed guidance on these variables is provided in the aircraft's specifications.

⚠ Surface Integrity: It is imperative that the surface of the dynamic radar remains uncontaminated to ensure optimal functionality. Any deviation from this condition may result in operational abnormalities, thereby compromising the system's performance.

⚠ Manual Oversight: Notwithstanding the advanced capabilities of the dynamic radar system and the XAG One APP, operators are mandated to maintain vigilant control over the aircraft. Sole reliance on automated systems is strictly discouraged. The aircraft must remain within the Visual Line Of Sight (VLOS) at all times. In exigent circumstances necessitating immediate intervention, operators must exercise their discretion and assume manual control to navigate around obstacles. **Maintain full control of the aircraft at all times and do not rely completely on the radar module and XAG One APP.** Use your discretion to operate the aircraft manually to avoid obstacles. This is critical because, despite the advanced functionalities of the radar system, it is not infallible and cannot guarantee avoidance of every obstacle.

⚠ Assistance Function: The obstacle detection and avoidance capabilities provided by the radar system are intended solely as assistance functions. While designed to aid the operator, these functions should not be fully relied upon. Operators must always be prepared to take manual control when necessary to ensure safety and compliance with operational protocols.

DETECTION PARAMETERS:

⚠ Detection Range: The dynamic radar is equipped with a horizontal obstacle detection range spanning ±40° and a vertical range from +90° to -45°. It is imperative to understand that the aircraft is incapable of detecting obstacles outside this specified detection range. Such scenarios necessitate heightened caution during flight operations.

⚠ Specific Obstacle Concerns: The radar's detection capabilities may be compromised when encountering objects positioned at an inclined angle relative to the aircraft's flight trajectory, such as inclined lines or utility poles. In such scenarios, a significant portion of the radar's electromagnetic waves may be deflected, necessitating heightened vigilance on the part of the operator.

Aircraft Battery

⚠ WARNING

USAGE AND HANDLING:

01. Official Equipment Requirement: Only the designated XAG Smart Battery is authorized for use. Utilization of any alternative battery can result in severe operational malfunctions and void the warranty.

02. Voltage Awareness: Users must be acutely aware that the aircraft's voltage can peak at 55.4V. Such voltages necessitate meticulous handling to ensure safety and prevent electrical hazards.

03. Liquid and Chemical Exposure: The battery terminal and top case must remain free from exposure to any form of liquid, including water and chemicals, to prevent potential short-circuiting and subsequent damage. Exposure to liquids may lead to catastrophic failure.

04. Cooling Protocols: Cooling sessions for the battery are restricted to a maximum of 60 minutes. Complete submersion of the battery in water is strictly prohibited as it can result in irreversible damage and safety risks.

05. Charging Precautions: During the charging process, it is imperative to ensure that no water from the water-cooling box comes into contact with the charger or supercharging station. Any contact with water can result in electrical hazards and damage to the charging equipment.

PHYSICAL INTEGRITY:

01. Insertion & Removal Protocols: The battery must be powered off before any insertion or removal procedures. Non-compliance can lead to damage to the power interface.

02. Battery Care: The battery must not be subjected to disassembly, puncturing, or undue pressure. Such actions can compromise its integrity and safety.

03. Charging Environment: A minimum distance of 30cm must be maintained between batteries and chargers during the charging process to prevent potential electrical failures or fire hazards.

Ⓝ Notes

MAINTENANCE AND STORAGE:

01. Cooling Medium: Only distilled, non-corrosive water is permitted for battery cooling. The use of any other cooling medium is strictly prohibited and can lead to corrosion and damage.

02. Water Levels: Water levels within the battery must strictly adhere to the indicated Max and Min levels. Failure to maintain proper water levels can result in operational inefficiencies and potential damage.

03. Charging Protocols: Prior to charging, the battery socket must be meticulously inspected for cleanliness and moisture. The charging socket and battery interface must be free from any metallic debris or liquid remnants to prevent short-circuiting and ensure safe charging.

04. Temperature Compliance: The battery is designed to operate within the 10°C to 45°C range. Any deviation from this range can lead to severe risks, including potential fire or explosion. Adherence to this temperature range is critical for safe operation.

05. Storage Protocols: Post-flight, if the battery's green light is activated, it indicates a requirement to charge the battery to a level between 40%-60% for optimal storage. Periodic full charge-discharge cycles, at least once every 90 days, are mandatory for maintaining battery health and longevity.

Battery Charger

⚠ WARNING

OPERATIONAL INTEGRITY:

01. Secure Connection: The charger's plug must be securely inserted at all times. Inadequate connections can lead to overcurrent, overheating, and potential fire hazards.

02. Liquid Exposure Prevention: The charger must remain free from any form of liquid, including water and chemicals. Exposure can result in short-circuiting, leading to irreversible damage.

03. Environmental Hazards: The charger must be protected from environmental contaminants such as sand, dust, and foreign objects. Such obstructions can impair the fan's functionality, leading to cooling inefficiencies and potential overheating.

VOLTAGE AND DEVICE HANDLING:

01. Voltage Compliance: The charger must only be operated within its specified voltage limits. Exceeding these limits can lead to severe malfunctions.

02. Device Maintenance: Regular inspections are required to ensure the charger's plug is free from damage, rust, or corrosion. The charger must be stored in a cool, dry environment to ensure its longevity.

03. Physical Care: The charger must be handled with utmost care. Any external damage can compromise its cooling efficiency and overall functionality.

RevoSpray System

⚠ WARNING

SYSTEM SETUP:

- ⚠ Attachment: Make sure the RevoSpray System is tightly attached to the aircraft.
- ⚠ Wiring: Avoid using any wires that are exposed or damaged.
- ⚠ Load Limit: Don't fill the spray tank beyond its maximum limit. Check the RevoSpray System's manual for details.

PUMPS AND NOZZLES:

- ⚠ Cleaning: After using, clean the tubing with soapy water.
- ⚠ Nozzle Check: Ensure the nozzle disks are whole and undamaged to prevent chemicals from spreading where they shouldn't.

SPRAY TANK:

- ⚠ Securing: Make sure the spray tank is tightly fixed in place and doesn't leak any liquid.

USING PESTICIDES:

- ⚠ Safety Gear: Always wear long-sleeved shirts, pants, masks, goggles, and rubber gloves when preparing pesticides.
- ⚠ Safe Area: Use pesticides in places with good air flow and shade.
- ⚠ Check Your Gear: Look over your safety gear for any tears or damage. If you find any, get new gear before handling pesticides again.

Software and Firmware

⚠ WARNING

FIRMWARE INTEGRITY & SAFETY:

01. Pre-flight Precautions: Prior to embarking on any flight or updating the aircraft's firmware, a preliminary test run of the drone is mandatory. This test must be conducted without the propellers affixed to ensure the remote controller, motors, and other integral electronic modules are operational. Propellers should only be installed subsequent to a thorough verification of system functionality to mitigate potential hazards and ensure operational safety.
02. Safety During Updates: During firmware updates, system calibrations, and parameter setting procedures, it is imperative to maintain a secure perimeter, ensuring both humans and animals are at a safe distance. This precaution is critical to prevent accidental harm or injury during these operations.

Notes

FIRMWARE UPDATES & MAINTENANCE:

01. Official Firmware: Utilization of only the official XAG firmware is mandated. The use of unauthorized or third-party firmware can result in operational malfunctions and void the warranty.
02. Sequential Updates: Following the aircraft's firmware update, it is essential to verify and, if necessary, update the RTK4 and remote controller's firmware to the latest available version. This ensures compatibility and optimal performance.
03. Re-linking Post Update: There exists a possibility of the remote controller becoming unlinked from the aircraft subsequent to an update. In such instances, re-establishing the link between the remote controller and aircraft is crucial to restore operational control.
04. Connection Verification: Prior to initiating a firmware update, all connections must be meticulously inspected to ensure they are secure and free from defects. This verification is necessary to prevent interruptions or failures during the update process.
05. Post-Update Test Flight: In the event of a significant firmware update or a series of concurrent firmware updates, a test flight is mandatory to ensure system integrity and operational reliability. This test flight should be conducted in a controlled environment to verify the effectiveness of the updates.
06. Updates Post Part Replacement: Should any electronic components be replaced, an immediate update of the aircraft firmware is required. This ensures that all components are operating with the latest firmware, maintaining system consistency and performance.

XAG One APP

APPLICATION MAINTENANCE & USAGE:

Notes

01. Version Updates: It is imperative to consistently update the XAG One APP to the most recent version available.

02. Regulatory Compliance: All safety tips, warning messages, and disclaimers provided within the app must be meticulously read and understood. Familiarize yourself with all pertinent regulations within your operational jurisdiction. The onus of being conversant with, and adhering to, all relevant regulations rests solely with the user. Particular vigilance is required in scenarios such as:

    a. Utilizing the RTL (Return to Land) and Auto-landing functionalities.

    b. Configuring the altitude settings beyond the default threshold of 30m.

OPERATIONAL PRECAUTIONS:

⚠ Manual Override: In the event of a warning message being displayed within the app, be prepared to assume manual control of the aircraft using the remote controller.

⚠ Pre-flight Checks: Prior to each flight, it is essential to scrutinize all warning messages presented in the aircraft status list within the app.

⚠ Map Data Caching: Before each operation, ensure you cache the map data for your intended flight area by establishing an internet connection.

⚠ Application Login: An active internet connection is required to log into the XAG One APP. Ensure you are logged in before commencing operations.

⚠ Flight Parameter Verification: It is of paramount importance to review and confirm flight parameters before each flight.

Flight Condition Requirements

Responsible Aircraft Operation

⚠ WARNING

OPERATIONAL SAFETY:

⚠ Physical & Mental Condition: Operation of the aircraft while under the influence of alcohol, drugs, anesthesia, or any other condition that may impair judgment or physical capability is strictly prohibited.

⚠ Motor Interruption: The cessation of motor function during flight is forbidden unless faced with a dire emergency that necessitates such action to prevent further harm or damage.

⚠ Payload Protocols: Releasing, launching, or projecting hazardous materials or objects towards structures, individuals, or animals is unequivocally prohibited.

Notes

LEGAL & ETHICAL CONDUCT:

01. Certification & Training: Prior to any operation, the operator must have completed the requisite drone operation training and possess a valid drone operation certificate as mandated by regional laws.

02. Adherence to Regional Regulations: All operations must strictly adhere to the prevailing regional laws governing drone flights, including but not limited to flight altitudes, operational zones, and visibility requirements.

03. Emergency Protocols: Operators must be adequately trained to manage emergencies and must have established procedures in place for unforeseen incidents.

04. Safety Evaluation: A rigorous safety assessment is mandatory before each flight. Any form of reckless or negligent operation is unacceptable.

05. Illicit Activities: The aircraft shall not be used for any activities deemed illegal or inappropriate, such as espionage, unauthorized military operations, or unsanctioned investigations.

06. Respect for Privacy & Legal Rights: Any operation that infringes upon the privacy, publicity, or other legal rights of individuals is strictly prohibited.

07. Property Boundaries: Unauthorized entry or operation over private properties is forbidden.

Weather Conditions and Surrounding Environment

⚠ WARNING

OPERATIONAL PARAMETERS:

⚠ Weather Constraints: The aircraft is engineered for optimal performance in benign to moderate weather conditions. Operation is strictly limited to sunny, cloudy, or partly cloudy conditions with wind velocities not exceeding 10 m/s (36 km/h). Activities under adverse conditions such as rain, snow, frost, fog, thunderstorms, hail, sandstorms, or in the presence of strong winds are unequivocally prohibited. Furthermore, regions with pronounced magnetic interference must be avoided.

⚠ Adverse Weather Protocols: Should the aircraft encounter detrimental weather conditions, such as excessive wind speeds, rain, snow, or hail, during its operation, it is imperative to immediately stabilize the drone in a hover. If prevailing conditions compromise a safe return trajectory, maintain a temporary hover, identify a proximate secure location, and navigate the drone to said location posthaste.

SAFETY & COMPLIANCE:

⚠ Weight Limitations: Strict adherence to the delineated safe take-off weight range, as specified in the official manual, is non-negotiable. Operations that exceed the aircraft's weight constraints are strictly forbidden due to the inherent risks they pose.

⚠ Proximity Restrictions: At all times during flight, the aircraft must maintain a minimum distance of 30 m (98.4 ft) from individuals, fauna, structures, public infrastructure, and water bodies. As the altitude of the aircraft escalates, this distance must be proportionally increased to ensure safety.

⚠ Tank Load Limitations: When loading materials into the tank, it is imperative that the total weight does not surpass the officially recommended threshold. Non-compliance jeopardizes flight safety and is strictly prohibited.

Interference with Flight Controller and Communications

Ⓝ Notes

OPERATIONAL INTEGRITY:

⚠ **GNSS Signal Strength:** It is imperative to ensure that the GNSS satellite navigation signal within the designated operational area is robust and reliable. Inadequate signal strength can compromise the execution of tasks and jeopardize operational integrity. Operators must verify the signal strength prior to initiating any flight operations.

⚠ **Environmental Assessment:** Prior to commencing any flight, a meticulous evaluation of the surrounding environment is mandatory. The chosen operational area must be expansive and devoid of towering structures or obstructions that could interfere with flight operations. It is of paramount importance to ensure the absence of electromagnetic interference sources, including but not limited to high-voltage power lines, communication base stations, and transmission towers. The operational zone must be sufficiently isolated from potential hazards, obstructions, and unauthorized personnel. Any discernible safety concerns within the vicinity must be promptly addressed and rectified to ensure a safe operational environment. Indoor flights are strictly prohibited under all circumstances, as they pose significant risks to both the aircraft and surroundings.

Operation Modes, Functions, and Warnings

Operations Modes

⚠ WARNING

⚠ OPERATIONAL SAFETY:

⚠ Mode Familiarity: Prior to any operation, ensure comprehensive understanding of the aircraft's behavior and response under each operational mode:

- Autonomous Mode
- Manual Mode
- AB Mode

⚠ Visual Monitoring: It is imperative to maintain a direct line of sight with the aircraft and continuously monitor its status throughout the operation.

Return to Land (RTL)

Ⓝ Notes

NAVIGATIONAL PROTOCOLS:

01. Obstacle Mapping: In the event of RTL activation, the aircraft is designed to chart a return path that avoids mapped obstacles. Ensure comprehensive mapping of all obstructions within the operational area, inclusive of approach and operational routes. Additionally, set optimal flight altitudes for these routes to ensure safety.

02. Transmission Range: Always operate the aircraft within the effective transmission range of the remote controller.

03. GNSS Dependency: RTL functionality may be compromised or rendered inoperative in the absence of a robust GNSS signal.

04. Building Interference: Tall structures can adversely impact RTL functionality. It is of paramount importance to pre-set an appropriate failsafe altitude prior to each flight. In the presence of a strong remote controller signal, make necessary adjustments to the aircraft's location, altitude, and speed during its return to ensure obstacle avoidance.

ⓘ IMPORTANT

ⓘ **GNSS DEPENDENCY:** The RTL function will not operate in the event of weak or absent GNSS signals. Ensure your drone maintains a strong GNSS connection for the proper function of RTL.

ⓘ **EFFECT OF TALL STRUCTURES:** High-rise buildings can negatively impact the RTL feature. Therefore, it's crucial to establish an appropriate failsafe altitude before each flight. Adjust the aircraft's location, altitude, and speed while returning home to avoid obstacles, provided there is a strong remote controller signal.

ⓘ **TRANSMISSION RANGE:** Operate the drone within the remote controller's transmission range to ensure uninterrupted connectivity and function.

ⓘ **EMERGENCY USE OF RTL:** The RTL function should be used only in emergency situations, as its performance may be influenced by weather conditions, environmental factors, and nearby magnetic fields.

ⓘ **OBSTACLE DETECTION:** If an obstacle is detected within 30 meters of the aircraft, the drone will slow down, brake, and hover in place. In this situation, the RTL mode is disengaged and the drone waits for further commands.

ⓘ **ROUTE OPERATIONS:** If the RTL function is activated during Route operations, the aircraft is capable of planning a flight path to avoid the obstacles that were identified during the field planning phase.

RTL Battery Level

Ⓝ Notes

POWER MANAGEMENT:

⚠ Battery Threshold: If the RTL Battery Level is activated, the aircraft will initiate a landing sequence at the pre-set battery level. A setting of 25% is recommended for optimal safety.

Low Battery

Ⓝ Notes

EMERGENCY PROTOCOLS:

⚠ Automatic Descent: Upon reaching the critical battery threshold, the aircraft will automatically initiate a descent sequence.

⚠ Immediate Response: In the event of battery warnings, it is imperative to expediently navigate the aircraft back to the Home Point or execute a safe landing. This is crucial to prevent potential power depletion during flight, which could result in damage to the aircraft, property, fauna, or pose a risk to human safety.

Storage and Transportation

⚠ WARNING

SAFETY AND INTEGRITY OF COMPONENTS:

- ⚠ Hazardous Components: Small components, including cables and tubes, pose a significant ingestion risk. Ensure these parts are securely stored and remain inaccessible to children and animals.
- ⚠ Aircraft Security: During transportation, it is imperative to securely strap the aircraft to prevent any movement or potential damage.
- ⚠ Battery Removal: Prior to transportation, remove the battery from the aircraft to mitigate risks associated with battery damage or malfunction.
- ⚠ Tank Emptying: Ensure that both the liquid and granular tanks are emptied before transportation. Any residual content can pose risks during transit.

Maintenance

⚠ WARNING

UPKEEP AND SAFETY OF COMPONENTS:

- ⚠ Post-Operation Cleaning: It is imperative to meticulously clean all components of the aircraft after each spraying or spreading operation. For comprehensive cleaning guidelines, refer to the "After-Flight Maintenance & Care" section.
- ⚠ Remote Controller Maintenance: After each operational day, cleanse the surface and antennas of the remote controller using a cloth dampened with water, ensuring it is well-wrung to prevent excess moisture.
- ⚠ Routine Inspection: Conduct a thorough examination of every component of the aircraft in alignment with the stipulations of the Maintenance guide.
- ⚠ Unauthorized Repairs: Under no circumstances should one attempt to repair the aircraft independently. For repair guidance, contact Support@xag-au.com.
- ⚠ Authorized Parts: Utilize only official XAG-approved spare parts for any repair or replacement needs.

Ⓝ Notes

POST-INCIDENT PROTOCOLS:

Incident Assessment: Should the aircraft be involved in an incident or collision, it is mandatory to conduct a rigorous inspection of all its parts. Any required repairs or replacements must be addressed prior to the next flight. Alternatively, for a comprehensive evaluation, contact Support@xag-au.com to facilitate the return of the aircraft to our warehouse.

Compliance with Regulations & Flight Limits

⚠ WARNING

REGULATORY ADHERENCE:

- ⚠ Aircraft Modification: Under no circumstances should the aircraft be altered or employed for non-agricultural purposes.
- ⚠ Proximity to Manned Aircraft: It is strictly prohibited to operate in the vicinity of manned aircraft. Should such a situation arise, ground the aircraft immediately.
- ⚠ Interference with Manned Operations: Ensure the aircraft does not disrupt manned aircraft operations. Maintain vigilant awareness of other aircraft and obstacles.
- ⚠ Event Zones: Refrain from operating the aircraft in zones hosting significant events, including but not limited to, sports events and concerts.
- ⚠ Legal Restrictions: It is imperative to avoid flying in areas where local regulations prohibit drone operations.

ⓘ IMPORTANT

OPERATIONAL GUIDELINES:

- ⓘ Restricted Zones: Do not operate the aircraft in zones designated as restricted by local regulations. Such zones encompass airports, international borders, major urban areas, and event locations. Be apprised that these zones are subject to change.
- ⓘ Altitude Restrictions: Ensure the aircraft does not exceed legally sanctioned altitudes.
- ⓘ Visual Line of Sight (VLOS): The aircraft must always remain within the operator's visual line of sight. If necessary, employ an observer for assistance.
- ⓘ Payload Restrictions: The aircraft must not be used to transport illicit or hazardous materials.

Ⓝ Notes

OPERATIONAL COMPLIANCE:

- ⚠ Regulatory Understanding: Prior to operation, ascertain the nature of your flight (e.g., recreational, public, commercial) and secure the necessary permissions from relevant governmental bodies. Engage with local regulatory agencies for detailed guidelines.
- ⚠ Sensitive Zones: Refrain from operating in or near areas of sensitive infrastructure, including power plants, water facilities, prisons, major roadways, governmental buildings, and military installations.

Flight Limits

Altitude Limit:

Maximum Altitude: The aircraft should not exceed an altitude of 100 m (328 ft) above ground level. Always be cognizant of surrounding obstacles.

Distance Limit:

Operational Range: The aircraft's maximum configurable flight distance is set at 1 km (0.62 mi). Ensure that the aircraft remains within a range that allows for a safe return, considering battery levels.

Export Controls

COMPLY WITH APPLICABLE EXPORT CONTROL LAWS

You are hereby advised that the export, re-export, and transfer of the Products are subject to Chinese export control law and other applicable export control laws and sanctions (hereafter collectively referred to as "Export Control Laws"). Prior to your use, sale, transfer, rental, or any other conduct related to the Products, unless explicitly permitted by the Export Control Laws or with the appropriate license issued by competent authorities, you must ensure and guarantee by appropriate measures that:

You are hereby notified that the export, re-export, and transfer of XAG products are subject to the export control regulations of the People's Republic of China and any other relevant international export control laws and sanctions (collectively referred to as "Export Control Laws"). Prior to engaging in any use, sale, transfer, rental, or other activities involving these products, unless explicitly permitted by the Export Control Laws or authorized by an appropriate license issued by competent authorities, you are required to take all necessary measures to ensure and certify the following:

01. There will be no violation of any embargo or restriction imposed by the applicable Export Control Laws;

02. The Products will not be sold, transferred, or provided to individuals, entities, or organizations listed on any sanctioned party lists under the applicable Export Control Laws;

03. The Products are not intended for use in any applications related to armaments, nuclear, chemical, or biological weapons, or missile technology.

EXPORT COMPLIANCE, DISCLAIMER & INDEMNITY

You acknowledge that it is solely your responsibility to comply with the Export Control Laws of the People's Republic of China and any other applicable export control regulations. Any liability arising from your use, sale, transfer, rental, or any other conduct related to the Products in contravention of these laws shall rest solely with you. XAG, under no circumstances, assumes any responsibility or liability for violations of applicable Export Control Laws that arise from your actions. Furthermore, you agree to indemnify, defend, and hold harmless XAG Australia, along with its affiliates, directors, officers, employees, agents, and representatives, from and against any and all claims, demands, legal actions, damages, penalties, expenses (including reasonable attorneys' fees), or liabilities of any kind, whether actual or alleged, arising out of or related to your failure to comply with any applicable Export Control Laws.

Safety

Pesticide Usage

- Pesticides are poisonous and pose severe risks to safety. Only use them in strict accordance with their specifications.
- Chemicals residues on the equipment caused by splashes or spills during refilling or mixing can irritate your skin, rinse with clean water and seek medical attention accordingly.
- Uses clean water or specialised mixing agents prescribed by Experts or Agronomist for mixing chemicals.
- Ensure to stay in an upwind location when conducting chemical spraying to reduce and avoid health hazards.
- Wear protective clothing and avoid direct physical contact with chemicals. Rinse your hands and skin after handing chemicals and post-Flights.
- Effective use of pesticides depends on chemical density, spray rate, spray distance, flight speed, wind speed, wind direction, temperature, humidity, and more... Consider all factors and applicable laws or regulations when using chemicals.
- Do not compromise the safety of people, animals, or the environment.
- Do not contaminate rivers and sources of drinking water.

Environment Considerations

- Consider the surroundings and ensure a safe distance from obstacles or people.
- If there is strong wind, rain, snow, hail, or other adverse weather conditions, return or land the aircraft at a safe location.
- Maintain a Visual line of sight of your aircraft at all times.
- Make sure your operations do not violate any applicable laws or regulations and have obtained all appropriate authorisation before the operations. Consult with the relevant government agency or authority to ensure compliance with all relevant laws and regulations.

Flight Operation

- Pre-flight Calibration and Inspection must be conducted before Operation.
- Stand clear and do not approach rotating propellers and motors.
- Operate within the specified max take-off weight to avoid potential safety risks which may result in serious injury to yourself and/or others, damage to your Products, and/or other objects in the vicinity.
- Maintain a Visual line of sight of your aircraft at all times.
- If the radar is not operating properly in the operating environment, the aircraft will not be able to avoid obstacles that are not previously mapped within the APP. Manual Control is recommended to ensure flight safety.
- Maintain complete control of the aircraft at all times. Obstacle avoidance is disabled in certain situations and operating environments.
- Effectiveness of the Obstacle radar is dependent on the obstacle's material, location, shape, size, etc. Maintain visual line of sight and pay attention to its flight, and prepare to operate the aircraft and manually avoid obstacles promptly or during an emergency.
- Strictly forbidden to conduct obstacle avoidance tests on humans or animals (regardless of static or dynamic) as obstacles, it is also strictly prohibited for humans, animals, or objects to obstruct, interfere or impact the aircraft directly.
- DO NOT fly above or near a populated area or population.
- DO NOT fly when you are fatigued or under the influence of alcohol or drugs.

Ingress Protection Rating

Under stable laboratory conditions, this aircraft has a protection rating of IPX7, which is waterproof, dustproof, corrosion-resistant, and can be cleaned using a small amount of water. However, this protection is not permanent and may reduce overtime after long-term use due to aging and wear. Liquid leakage or penetration may damage electrical and internal components, and it is not covered by the Product warranty.

Some of the scenarios that may decrease the Ingress Protection include but are not limited to the following:

- There is a flight incident/collision causing the sealing to deform.
- Sealing structure is cracked or damaged.
- Waterproof covers or sealing are not adequately secured or installed.

Maintenance and Upkeep

- Check & ensure the equipment is in good condition; replace aged or broken parts before the flight.
- Check & ensure the correct Propellers & Propeller Type (CW & CCW) are correctly installed.
- Conduct Regular Maintenance & record Logbook per warranty and regulation requirements.
- Use only XAG-approved parts and accessories for the maintenance and repair of your aircraft. Our approved parts are designed and tested to ensure optimal performance and safety. Your satisfaction and safety are our top priorities.

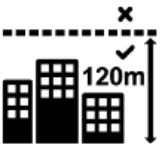
⚠ WARNING

Please be aware that the use of third-party parts or accessories in the maintenance, repair, or operation of your XAG aircraft may lead to the immediate voiding of your warranty. XAG's warranty is designed to cover our products when used as intended, with parts and accessories that have been expressly approved by XAG Australia.

Furthermore, XAG will not be held responsible or liable for any damages, incidents, or accidents that may arise as a result of the use of third-party parts or accessories. This includes but is not limited to, operational failures, mechanical malfunctions, or any potential harm to operators, bystanders, or property.

Abide Local Laws and Regulations

Visit - Know Your Drone - for a safe and responsible flight



You must not fly your drone higher than 120 metres (400 feet) above ground level.

You must keep your drone at least 30 metres away from other people.

Remember, you must not operate your drone in a way that creates a hazard to another aircraft, person or property.

You must keep your drone within visual line-of-sight. This means always being able to see the drone with your own eyes (rather than through a device, screen or goggles).

You must not fly over or above people or in a populous area. This could include beaches, parks, events, or sport ovals where there is a game in progress.

Respect personal privacy. Don't record or photograph people without their consent — this may breach other laws.

You must not fly your drone over or near an area affecting public safety or where emergency operations are underway. This could include situations such as a car crash, police operations, a fire or firefighting efforts or search and rescue.

If you're near a helicopter landing site or smaller aerodrome without a control tower, you can fly your drone within 5.5 kilometres. If you become aware of manned aircraft nearby, you will have to manoeuvre away and land your drone as quickly and safely as possible.

If your drone weighs more than 250 grams, you must fly at least 5.5 kilometres away from a controlled airport, which generally have a control tower at them.

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