UBIFLY TECHNOLOGIES PVT LTD

QUALITY MANUAL

SOLIS VIHA THE AGRI DRONE	Ubifly Technologies Pvt Ltd Chennai, India

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Record of Revision

Revision No	Date	Revision Details
1	13.07.2024	Updated UIN Procedure, Organisation functional flow, Inward QC form
2	27.07.2024	Updated Certificate of Conformity Format and Updated Record Keeping duration

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1 Quality Assurance Manual

1.1 Introduction

1.1.1 Scope

This manual describes the quality assurance plan of Ubifly Technologies Private Limited, Department of Aerospace Engineering, Machine Design Section Rd, Indian Institute of Technology, Chennai, Tamil Nadu 600036 for design, manufacture, integration, and sale of Remote Piloted RPA specifically to Model: **VIHAA**.

1.1.2 System Compliance

This Quality Assurance plan complies with ISO9001.

1.1.3 Quality Policy

The **UBIFLY TECHNOLOGIES** Quality Policy is understood, implemented, and maintained by all the personnel working in the **Ubifly Technologies** Private Limited.

1.1.4 Management Representative

The Management representative responsible for ensuring the requirements of the manual are implemented and maintained is the Head of Quality Control. The Head of Quality Control is responsible for the contents of the **UBIFLY TECHNOLOGIES** Quality Assurance Manual and Quality Assurance procedures Manual and is given full authority of the senior posts to deal with quality issues to satisfy the customer and regulatory authorities. It is the responsibility of the Vice-President, Quality Assurance & Regulatory Affairs to report to Senior Management on the performance of the quality system and to include any recommendations for improvement. Any problems, differences, or non-conformities that cannot be resolved within the organizational structure may be referred directly to the CEO of Ubifly Technologies Private Limited.

1.2 Management Review

A review package shall be prepared by Quality Assurance every quarter which includes reports summarizing internal audits, complaints, major item non-conformances, corrective actions, and preventive actions. Senior Management shall review this documentation to assure the continued adequacy and effectiveness of the Quality System, and to assure that product quality concerns are appropriately addressed. Minutes of the review including any comments or recommendations will be recorded and filed by Quality Assurance. Any actions required will be assigned and tracked by the Head of Quality Control.

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1.2.1 Quality Assurance Documentation

The Quality Assurance Manual describes the **UBIFLY TECHNOLOGIES** Quality Assurance Program. The manual defines the administration and control of the manual and the responsibilities and authorities of personnel within the organization. The Quality Assurance Procedures Manual describes the responsibility, procedures, and forms required to comply with applicable Quality Standards. Certain Quality Assurance Procedures (QAPs) are supplemented by Standard Operating Procedures (SOPs) which are issued and maintained by the originating departments. If there is a conflict, the Quality Assurance Procedure shall take precedence over the supporting SOP.

1.2.2 Manual Control

1.2.2.1 Quality Assurance manual

The Quality Assurance Manual shall be issued to executive staff who are responsible for managing, performing, and verifying work affecting quality and to customers on request. Copies of Quality Assurance manuals shall be returned to Quality Assurance upon request or when leaving the company.

1.2.2.2 Quality Assurance Procedures manual

The Quality Assurance Procedures Manual shall be issued to all executive, managerial and supervisory staff responsible for and engaged in, Marketing, Sales, Service, Technical Support, Engineering, Manufacturing, Production Control, Materials Control, Quality Assurance, and Quality Control functions. Each manual copy shall be serialized and Quality Assurance shall maintain a distribution list and revision records. Each holder of the manual shall be responsible for the condition and updating of their copy of the manual upon receipt of amendments and for returning a completed acknowledgment form to Quality Assurance. The Holder is also responsible for ensuring that employees have read and understood the current issue, where required for the performance of their work. Amendments shall be issued to each manual holder by Quality Assurance utilizing an official document transmittal form. Quality Assurance shall maintain adequate records of all acknowledgment forms received from each manual holder.

1.2.3 Collaboration Between Cross-Functional Teams

Effective collaboration between cross-functional teams at Ubifly Technologies Pvt Ltd is pivotal for achieving our quality assurance goals. The Design (CAD/CAE) team, Manufacturing team, Integration and Testing team, and Quality Assurance and Regulatory Affairs team each play specialized roles but must work in unison to ensure seamless operations and high product quality.

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1.2.3.1 Design (CAD/CAE) Team

The objective and policy of Design (CAD/CAE) is to design and develop new products for all Company product lines. Engineering & Development offers technical product support and is responsible for changes to existing products within the Company's product lines.

The design team is responsible for controlling the design and corresponding document in such a manner that they are protected from misuse, and that the version is controlled by the corresponding team.

1.2.3.2 Manufacturing

The objective and policy of Manufacturing are to manufacture, Assemble, test, and pack, products and components following company quality assurance requirements and product specifications and to satisfy all contractual and regulatory requirements.

Manufacturing is responsible for controlling the purchasing, receiving, handling, storage, and issuance of raw materials and other purchased items. This control is to ensure that: the correct items are purchased, protected from damage and deterioration and identification and traceability requirements are met.

Manufacturing is responsible for controlling manufactured parts, components, and assemblies in such a manner that they are protected from damage and deterioration, and that the identification is preserved to ensure conformity to design detail.

1.2.3.3 Integration and Testing Team

The objective and policy of the Integration Team are to assemble, test, system, and sub-system following company quality assurance requirements and product specifications and to satisfy all contractual and regulatory requirements.

Integration Team is responsible for controlling the purchasing, receiving, handling, storage, and issuance of purchased items required for system and sub-system integration.

Integration Team is responsible for controlling Assembled parts, components, and assemblies in such a manner that they are protected from damage and deterioration.

1.2.3.4 Quality Assurance and Regulatory Affairs

It is the objective and policy of Quality Assurance to maintain an effective and efficient Quality Assurance Program by establishing and implementing quality policies and procedures. Such policies and procedures are prepared with the

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cooperation and assistance of the department managers and following Quality Assurance Standards and Regulations.

Quality Assurance is responsible for preparing plans for the control of quality in advance of work so that evidence of conformity with contract requirements is obtained.

1.2.3.5 Organization, Responsibilities, and Authorities

1.2.3.5.1 Organization Covered by the Quality Assurance Program

The design, development, manufacture, inspection and test, service, sale, and distribution activities subject to the requirements of this Quality Assurance Manual are performed under the executive direction of the CEO, of Ubifly Technologies Private Limited.

The Chief Executive Officer has reported to him/her, the following functional organizations responsible for implementing the Quality Assurance Program:

- Design- CAD / CAE
- Manufacturing
- Integration Team
- Quality Assurance

1.2.3.5.2 Chief Executive Officer - CEO

The Chief Executive Officer of **Ubifly Technologies** Private Limited has overall responsibility and authority for the corporate Quality Assurance Program and for ensuring that all operations are carried out in compliance with the Quality Assurance Policies, Procedures, Standards, and Guidelines.

1.2.3.5.3 Head – Manufacturing

The Head – Manufacturing is responsible for production engineering, process planning, scheduling, production control, purchasing, manufacturing, assembling, testing, storage, handling, and packing of all products and components manufactured

1.2.3.5.4 Head – Quality Control

Head - Quality Control is responsible for the development and administration of the

Company's quality and regulatory affairs systems. This includes:

- Maintaining the Quality Manual and introducing changes to meet changing internal needs and new regulatory requirements;

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- Monitoring quality system compliance through internal audits or direct administration;
- Identifying required corrective actions and ensuring that they are accomplished;
- Interacting with regulatory authorities to demonstrate compliance with requirements;
- Anticipating the company's future needs regarding quality systems and planning to meet them; and
- Managing inspection and testing.

1.2.3.5.5 Head – Design (CAD/CAE)

The Head-Design is responsible for the design, development, and technical product support of the products handled by the department. In Addition, the Assistant Head has the following Responsibility:

- Training and development of Engineering & Development personnel and directing their activities following established policies, procedures, and guidelines.
- Defining the responsibilities and authority of personnel responsible for product design and support, marketing, and technical support.
- Specifying, and employing Functional Product Specifications, Engineering Specifications, Engineering Drawings, and Sales Specifications, all necessary design, safety, performance, and quality requirements for both new and existing Products.
- Monitoring the product to ensure that all required design, safety, regulatory, and quality requirements as specified in Product Specifications, are being met.

1.2.3.5.6 Head – Integration

The objective and policy of the Integration Team are to assemble, test, system, and sub-system following company quality assurance requirements and product specifications and to satisfy all contractual and regulatory requirements.
Integration Team is responsible for controlling the purchasing, receiving, handling, storage, and issuance of purchased items required for system and sub-system testing.
Integration Team is responsible for controlling Assembled parts, components, and assemblies in such a manner that they are protected from damage and deterioration

1.2.3.6 Design Control

Ubifly Technologies Private Limited shall establish and maintain procedures for the control and verification of design activities to ensure that the specified requirements

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are met. The Engineering Manager shall prepare a project plan for each design and development activity (other than minor design changes).

The project plan shall describe the activities involved and define responsibility for their implementation.

Engineering Management shall ensure that the task of performing design activities is assigned to qualified personnel.

Resources shall be identified in the project plan. The project plan shall be updated as the design evolves.

In the case of multiple development groups, the project plan shall identify the organizational and technical interfaces between different groups.

Design input shall take into consideration the results of any contract review activities. Problems encountered during the design activities shall be resolved and documented.

Note: At appropriate stages in the design, formal design reviews shall be performed. These reviews shall be identified in the project plan. Participants at design reviews include representatives of all departments concerned with the design stage being reviewed and may include others, as required. Records of reviews shall be documented.

Validation activities shall meet the requirements of Design Validation Standard Operating procedures that are followed within the department.

Verification of Validation shall be performed by peer review of the validation protocol, and by review of the test results to ensure that expected results were achieved. Verification of detailed design documents shall be performed by peer review.

Changes to final, approved designs shall be subject to the same design controls as were applied to the original design.

1.2.3.7 Data Control

Ubifly Technologies Private Limited shall establish and maintain procedures for controlling and maintaining all essential documents and data affecting products, and to identify the responsibilities for preparation, review, revision, approval, and distribution of these documents.

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Department Managers shall establish and maintain the document and data control system applicable to their area

All documents and data are reviewed for adequacy and approved by authorized personnel before issue.

Department Managers shall establish an index of all essential documents identifying the current revision of documents to preclude the use of non-current documents. Department Managers shall ensure:

- Appropriate documents are available at all locations where operations are performed which impacts the quality system.
- Obsolete documentation is promptly removed from all points of issue.
- Documents and data retained for legal and/or knowledge-preservation will be identified as being obsolete.
- Revisions to documents and data shall be reviewed and approved by the same level of approval authority as the original.
- Document and data revisions shall be identified in the document, if practical. Department Managers shall have access to pertinent background information upon which to base their review and approval.

1.2.3.8 Measuring and Testing

Ubifly Technologies Private Limited shall establish and maintain procedures to control, calibrate and maintain inspection, measuring, and test equipment, including test software, which is used to demonstrate conformance of the product to requirements.

All users of Measuring and Test Equipment (MTE) are responsible to assure that the MTE is used in a manner that ensures that the measurement capability, accuracy, precision, stability, and range are known and consistent with the intended application.

Where a customer or regulatory authority requires technical data about **UBIFLY TECHNOLOGIES** measurement and test equipment to establish that the equipment is functionally adequate, Quality Assurance shall make such data available.

All personnel using measurement and test equipment are responsible for selecting appropriate equipment and methods which are capable of providing the required accuracy and precision.

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All MTE shall be calibrated and adjusted before use and at prescribed intervals, against standards traceable to certified national standards. Intervals for each class of MTE are as per the requirement of the internal department. Quality Control is responsible for the administration of the calibration system.

Quality Control shall maintain all calibration records. When MTE is found to be out of calibration, an investigation shall be carried out by Quality Assurance to determine the potential impact on previously inspected items. Quality Control shall assure that environmental conditions are suitable for the calibrations, inspections, measurements, and tests being carried out. Users of MTE are responsible for ensuring that handling, preservation, and storage of MTE is suitable to maintain accuracy and fitness for use.

1.2.4 Procurement

Ubifly Technologies Private Limited shall establish and maintain a system for controlling purchased items and services and ensuring conformance to specified requirements. Materials Controls shall ensure that all items and services procured shall be purchased from suppliers who can supply quality items and services that meet or exceed the required specifications including the quality requirements.
The type and extent of control exercised over suppliers shall be dependent on:

- Type of product or service
- Impact of the product or service on the quality of the final product and, where applicable:
- On quality audit reports or supplier checklists.
- On quality records of previously demonstrated capability and performance of the supplier

Procurement records shall be retained following standard document control measures followed at **UBIFLY TECHNOLOGIES**.
Procurement activities are initiated by authorized personnel who shall include:

- A clear description of the type, class, grade, title, number, etc., including applicable issues or revisions of specifications, drawings, inspection, test plan requirements, and other relevant technical data.
- Requirements for approval or qualification of documentation, items or services, procedures, processes, equipment, and personnel.
- Title, number, and issue of the quality assurance program standard to be applied to the item or service.

1.2.4.1 Internal Quality Audits

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Ubifly Technologies Private Limited shall establish and maintain procedures for planning and implementing quality audits to evaluate and verify the effectiveness of the quality programs, and compliance with the quality program standards and regulatory requirements.

Quality Assurance shall establish the frequency of the audits based on the status and importance of the activity to be audited. Audits shall be performed by personnel who are independent of the activity being audited. The Auditor shall record the results of the audit and meet with the Department Manager to discuss the results. Any corrective actions shall be brought to the attention of the Departmental Manager.

The Auditor shall follow up by reviewing the corrective actions taken and verify they have been fully completed.

1.2.4.2 Incoming Inspection

Ubifly Technologies Private Limited shall establish and maintain procedures to identify, inspect, store and control items and services to ensure conformance to specified requirements, and prevent mix-ups and use of incorrect or defective items and services.

Receiving is responsible for identifying all goods delivered and forwarding them to Incoming Inspection. Incoming Inspection is responsible for inspecting all items purchased to a firm drawing and/or specification.

1.2.4.3 In Process Inspection

Ubifly Technologies Private Limited shall establish and maintain procedures for controlling the inspections and tests performed on items during the production phase following specified requirements.

Quality Control is responsible for in-process inspection. Quality Control inspects items and services following the requirements of the manufacturing order. Quality Control identifies any non-conformance and segregates and prepares the necessary reports. Nonconforming items are processed accordingly. After the completion of each operation, the Quality Control Inspector shall indicate the accept/reject status.

1.2.4.4 Final Inspection/ Finished Device Inspection

Ubifly Technologies Private Limited shall establish and maintain procedures to conduct and document the final inspection/finished device inspection and the activities to ensure conformance of the finished product to the specified requirements.

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Quality Control performs inspections on each item, lot, or batch of items upon completion of the last specified production operation on the Manufacturing Order, to ensure all specified inspections and tests are completed and meet specified requirements.

1.2.4.5 Identification and Traceability

Ubifly Technologies Private Limited shall establish and maintain procedures for the identification of items or services and when contractually, jurisdictionally or regulatory authority is required, establish a unique identifier to maintain the traceability of lots, batches, or individual items.

The corresponding Team shall be responsible to establish the need for, and location of the item identification and/or serialization including the method of application Production.

Ubifly Technologies Private Limited shall establish and maintain procedures to define the responsibilities, procedures, and methods used in the production cycle. Production activities shall be planned and documented to ensure that the methods used are consistent with good manufacturing practices and meet contractual and specification requirements.

1.2.4.6 Handling, Storage, Preservation, Packaging, and Delivery

Ubifly Technologies Private Limited shall establish and maintain procedures for handling, storage, preservation, packaging, delivery, and installation of Company products. These procedures shall be maintained duly by the corresponding plant heads. Each production and inspection department shall be responsible for ensuring that safety precautions and good shop practices are maintained to prevent damage or deterioration to the product.

Quality Control shall conduct quarterly inspections of handling and storage activities to assure product condition and shelf-life control.

1.2.4.7 Record Keeping Procedure

Ubifly Technologies Pvt Ltd maintains a comprehensive record-keeping system to ensure compliance with industry standards and internal quality controls. Records will be kept for two years from the end of the life of the Vihaa product.

Key Procedures:

1. **Retention Period**:

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- All production-related records must be retained for at least two years.

2. **Types of Records**:
   - Procurement records
   - Production logs
   - Quality control reports
   - Compliance documentation
3. **Storage**:
   - Records should be stored in a secure, accessible manner, either digitally or physically, depending on the document type.
4. **Access and Security**:
   - Access to records is restricted to authorized personnel only to ensure confidentiality and integrity.
5. **Review and Disposal**:
   - After the retention period, records should be reviewed for relevance and either archived or securely disposed of if no longer needed.

This procedure ensures that all necessary documentation is available for audits, inspections, and reference.

2 Procedure of Issuance of CoC [Certificate of Conformity]

Step:1: Ensure that the RPA is manufactured according to the manufacturing process as specified in the Type Certification Review Document.

Step:2: Ensure that the Serial Numbers of all the components of the RPA are noted and recorded in our database.

Step:3: Verification of All entries, checklist and the SOP manuals and ensure that the same are followed in the facility by checking the entries against the RPA Serial Number.

Step:4: Ensure that all the required information area recorded in the database for future reference.

Step:5: On Verification of the above requirements against SoC, RPA will be issued an SoC and that will be added to our database and retained.

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CERTIFICATE OF CONFORMITY		
State: Tamil Nadu	Company Name: Ubifly Technologies Pvt Ltd,	3.Vihaa
Address: 1FA, First Floor, IIT-M Research Park, Kanagam Road, Taramani, Chennai 600113		
5. Type: Drone	6. Category: Rotorcraft	
7. Class: Medium	Sub-Category: RPAS	
10. UIN:	11. Manufacturers Serial No:	
12: FCSN:	13: RCSN:	
14. List of Directives/ Compliance Standards/Regulations: 1- CS-UAS by QCI dated Jan 26 2022		
15. Type Certification Number:		
16.Remarks:		
17. Signed:	18. Name:	19. Date:
20. Place of Issue: Chennai		

3 Issuance of UIN

Step:1: Once the RPAS is type certified from the DGCA, UIN Numbers will be generated from Digital Sky Platform

Step:2: The Authorized person from the organization will Create the UIN Number for the UAS by providing necessary details and make the payment at BharatKosh website.

Step:3: After submitting your application, navigate to this screen from your dashboard. Here, the status of your UIN application will be changed to Submitted. DGCA will then review your application before approving it.

Step:4: Once Approved, the UIN Number will be generated.

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4 Transfer of UIN

4.1 As a Transferor:

Step:1: I have an UIN, and I want to transfer my UIN to someone else.
Step:2: Request the transferee to Create an account and profile on Digital Sky if not already created.
Step:3: Login to Digital Sky platform and go to My UIN in UIN section.
Step:4: Select 'Transfer' option against the UIN you wish to transfer.
Step:5: Search the registered transferee, using his/her email address and send the Transfer request via Form D-3 (Application for Transfer or Deregistration of Unmanned Aircraft Systems).
Step:6: The request will go to the transferee for approval.
Step:7: After approval from Transferee, go to the UIN in 'UIN Transfer' section and pay ₹100 fee.
Step:8: The UIN will be transferred upon successful receipt of payment.

4.2 As a Transferee:

Step:1: I want to get an UIN transferred in my name.
Step:2: Create your account and profile on Digital Sky platform, if not already created.
Step:3: Request the transferor to initiate the Transfer Request, if not done already
Step:4: Accept the Transfer request initiated by the transferor.
Step:5: Upon successful receipt of requisite fee through Digital Sky from the Transferor, the UIN will be Transferred to you.

5 Assembly of UIN Plate

Refer to Annexure VII in the manufacturing manual for detailed information on mounting of UIN Plate.

6 Packaging Guidelines

To ensure that our drones and their components are delivered to customers in perfect condition, we have established comprehensive packaging guidelines. These guidelines cover the materials, procedures, and quality checks required to package our products safely and securely. The following sections detail the packaging process and requirements.

6.1 Packaging Procedure

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1. **Preparation**
    - **Inspection**: Inspect all items to be packaged for any defects or damages.
    - **Cleaning**: Ensure all components are clean and free of debris before packaging.
2. **Inner Packaging**
    - **Foam Placement**: Place custom foam inserts inside the carton box.
    - **Component Placement**: Carefully place the drone and its components in their designated slots within the foam inserts.
    - **Secure Components**: Use bubble wrap and plastic bags as necessary to secure and protect delicate components.
3. **Outer Packaging**
    - **Box Assembly**: Assemble the outer carton box, ensuring it is properly constructed and sturdy.
    - **Insert Contents**: Place the foam inserts with the components inside the outer carton box.
    - **Add Documentation**: Include all necessary documentation, such as the user manual, warranty card, and compliance certificates.
4. **Sealing and Labeling**
    - **Seal Box**: Securely seal the outer carton box using high-quality packing tape.
    - **Label Box**: Attach clear labels with product information, handling instructions (e.g., "Fragile", "This Side Up"), and customer shipping details.

6.2 Quality Checks

1. **Pre-packaging Inspection**
    - **Component Check**: Verify that all components are present and in good condition.
    - **Documentation Check**: Ensure all necessary documentation is included.
2. **Post-packaging Inspection**
    - **Seal Integrity**: Check that the carton box is properly sealed and secure.
    - **Label Accuracy**: Verify that all labels are correctly placed and legible.
3. **Drop Test**
    - **Testing**: Perform drop tests on sample packages to ensure that the packaging can withstand handling during shipping.
4. **Final Approval**

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- **QC Signature**: A designated quality control (QC) inspector signs off on the packaging, confirming that it meets all standards and requirements.

6.3 Record Keeping

1. **Packaging Logs**
   - **Documentation**: Maintain detailed logs of all packaged products, including serial numbers, packaging dates, and QC signatures.
   - **Traceability**: Ensure that each package can be traced back to its production batch and inspected components.
2. **Customer Feedback**
   - **Feedback Collection**: Collect feedback from customers regarding the condition of received packages.
   - **Continuous Improvement**: Use feedback to continuously improve packaging processes and materials.

By adhering to these packaging guidelines, we aim to protect our products during transit and ensure that they reach our customers in excellent condition. This comprehensive approach to packaging is a key component of our commitment to quality and customer satisfaction.

7 Dispatch Checklist

To ensure a comprehensive and efficie nt dispatch process for Unmanned Aerial Systems (UAS), a checklist may be provided in the appropriate document detailing all items and components to be delivered. This checklist ensures that all necessary parts and documentation accompany the UAS during dispatch, reducing the risk of errors and omissions.

Implementation:

- **Verification**: Before dispatch, verify all items against the checklist to confirm completeness.
- **Documentation**: Ensure all documentation is up-to-date and included.
- **Sign-off**: Authorized personnel must review and sign off on the checklist to confirm accuracy.

This checklist aims to standardize the dispatch process, ensuring every delivery meets our quality and completeness standards.

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Dispatch Checklist

Item	Quantity	Serial/Part Number (If any,)	Checked
Vihaa - The Agri Drone	1		☐
Remote Controller	1		☐
Spare Propellers	1 Set		☐
Batteries	2 Sets		☐
Battery Charger	1		☐
2.5mm Allen Key	1		☐
3mm Allen Key	1		☐
4mm Allen Key	1		☐
Flight Manual	1		☐
Operational Log Book	1		☐
Maintenance Log Book	1		☐
Battery Log Book	1		☐
Certificate of Conformity (CoC)	1		☐

Consent Statement

I confirm that all items listed above have been received in good condition.

Signature of Customer Receiving:	**Signature of Authority Giving:**
Name:	**Name:**
Date:	**Date:**

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8 In-service Difficulty handling – Flowchart

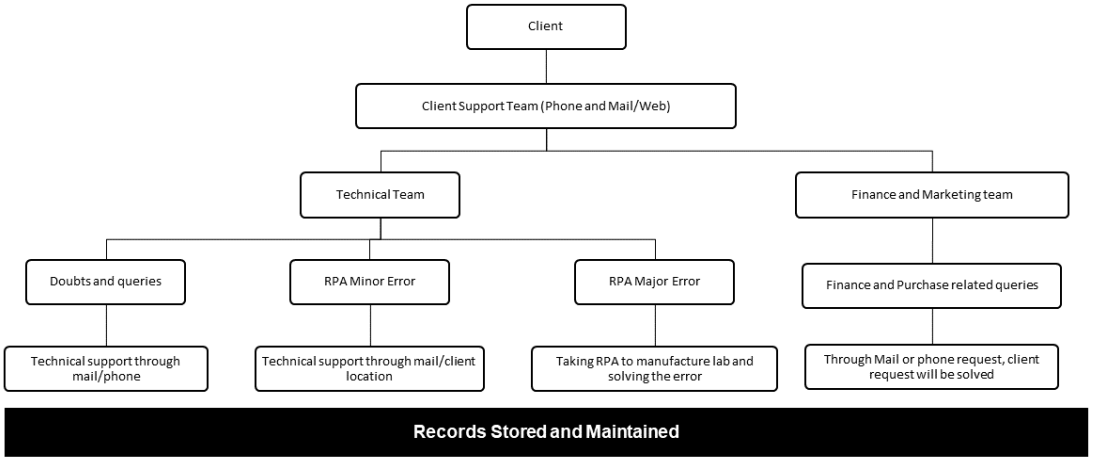

Figure 6-1 Inservice Difficulty Handling

9 Quality Checklist Document

9.1 Component level quality

9.1.1 Acceptance Criteria for component quality

Parts will be considered acceptable if they meet the following criteria:

- **Documentation:** Packing slips and certificates of compliance (e.g., material certifications, test reports) are present, complete, and accurate.
- **Condition:** Parts are free from damage, defects, or contamination that could affect performance.
- **Dimensions:** All critical dimensions are within the specified tolerances as defined in engineering drawings.
- **Functionality:** Parts perform as intended according to the specifications.
- **Traceability:** Parts have proper identification markings (part numbers, lot codes, etc.) for complete traceability.

Parts that fail to meet any of these criteria will be considered non-conforming and subject to the non-conformance reporting process. All the parts that pass the QC test must be documented in the **Quality Checklist - Parts**

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9.1.2 Transmitter (Ground Control Unit): Quality Control Inspection

1. **Product Identification:**
    - Verify the transmitter is labelled as "Skydroid H12".

2. **Functional Testing:**
    - Power on the transmitter and listen for any abnormal sounds or unusual smells.
    - Check if the display functions properly and displays information clearly.
    - Attempt to bind the transmitter with a receiver to ensure successful connection.
3. **Visual Inspection:**
    - Examine the transmitter for any damage, including nicks, scratches, or cracks on the casing.
    - Verify the display screen is free from cracks or fractures.

9.1.3 Airframe Centre Hub: Quality Control Inspection

Tools Required

- Steel Ruler
- Vernier Calliper

Instructions

1. **Visual Inspection:**
    - Thoroughly examine the frame for any visible defects, including cracks, scratches, warping, or deformations.
2. **Dimensional Checks - Centre Hub:**
    - **Length:** Utilize the steel ruler to measure the middle centre hub's length. Ensure it falls within the tolerance range of 335mm ± 1mm (between 334mm and 336mm).
    - **Height:** Employ the steel ruler to measure the height of the centre hub. Ensure it falls within the tolerance range of 80mm ± 0.5mm (between 79.5mm and 80.5mm).
    - **Mounting Holes:** Utilize the vernier callipers to measure the diameter of the 6 holes on the centre hub designated for mounting arms. Verify they measure Φ40mm (40 millimetres in diameter) with high precision.
3. **Bottom Part Inspection:**
    - Confirm the presence of 4 tripod mounts securely fastened to the centre hub.
4. **Top Part Inspection:**

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- Verify the presence of 6 sets of Φ3mm through holes on the top of the centre hub designated for fastening arms. Utilize the vernier callipers to confirm their diameter is indeed 3mm.

9.1.4 Arm: Quality Control Inspection

Tools Required

- Steel Ruler
- Vernier Calliper

Instructions:

1. **Visual Checks:**
   - **Centre Frame Arm:** Carefully examine the centre frame arm for any visible defects, including cracks, scratches, warping, or deformations.
   - **Motor Arm:** Carefully examine the motor arm for any visible defects, including cracks, scratches, or deformations.
2. **Centre Frame Arm Dimensions:**
   - **Length:** Utilize the steel ruler to measure the length of the centre frame arm. Ensure it falls within the tolerance range of 325mm ± 1mm (between 324mm and 326mm).
   - **Diameter:** Employ the vernier callipers to measure the diameter of the centre frame arm. Verify it falls within the tolerance range of 40mm ± 0.5mm (between 39.5mm and 40.5mm).
   - **Mounting Holes:** Verify the presence of sufficient mounting holes on the centre frame arm for proper attachment to the centre hub (reference assembly diagram if needed).
3. **Motor Arm Dimensions:**
   - **Length:** Utilize the steel ruler to measure the length of the motor arm. Ensure it falls within the tolerance range of 385mm ± 1mm (between 384mm and 386mm).
   - **Inner Diameter:** Employ the vernier callipers to measure the inner diameter of the motor arm designated for the motor shaft. Verify it falls within the tolerance range of 28mm ± 0.5mm (between 27.5mm and 28.5mm).
   - **Outer Diameter:** Employ the vernier callipers to measure the outer diameter of the motor arm. Verify it falls within the tolerance range of 30mm ± 0.5mm (between 29.5mm and 30.5mm).
4. **Folding Arm Mechanism Check:**

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- Utilize the vernier callipers to confirm the presence and diameter of Φ6mm and a Φ36mm through holes at the top of the folding arm, as specified in the assembly drawing.

9.1.5 Landing Gear: Quality Control Inspection

Tools Required

- Measuring Tape
- Vernier Calliper

Instructions

1. **Visual Checks:**
   - **Vertical Landing Gear Rods:** Carefully examine the vertical landing gear rods for any visible signs of damage, including cracks, bends, or deformations. Ensure they appear structurally sound and safe for use.
   - **Horizontal Landing Gear Rods:** Carefully examine the horizontal landing gear rods for any visible signs of damage, including cracks, bends, or deformations. Ensure they appear structurally sound and safe for use.
2. **Vertical Landing Gear Dimensions:**
   - **Length:** Utilize the measuring tape to measure the length of each vertical landing gear rod. Ensure it falls within the tolerance range of 420mm ± 0.5mm (between 419.5mm and 420.5mm).
   - **Outer Diameter:** Employ the vernier callipers to measure the outer diameter of each vertical landing gear rod. Verify it falls within the tolerance range of 20mm ± 0.5mm (between 19.5mm and 20.5mm).
   - **Inner Diameter:** Employ the vernier callipers to measure the inner diameter of each vertical landing gear rod. Verify it falls within the tolerance range of 18mm ± 0.5mm (between 17.5mm and 18.5mm).
3. **Horizontal Landing Gear Dimensions:**
   - **Length:** Utilize the measuring tape to measure the length of each horizontal landing gear rod. Ensure it falls within the tolerance range of 500mm ± 0.5mm (between 499.5mm and 500.5mm).
   - **Outer Diameter:** Employ the vernier callipers to measure the outer diameter of each horizontal landing gear rod. Verify it falls within the tolerance range of 20mm ± 0.5mm (between 19.5mm and 20.5mm).
   - **Inner Diameter:** Employ the vernier callipers to measure the inner diameter of each horizontal landing gear rod. Verify it falls within the tolerance range of 18mm ± 0.5mm (between 17.5mm and 18.5mm).

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9.1.6 Flight Controller: Quality Control Inspection

1. **Packaging Inspection:**
    - Verify that the packaging is intact and free from any significant damage (crushing, tears, punctures).
    - Check for the presence of a product label.
2. **Product Identification:**
    - Verify that the product label clearly identifies the model as "Flight Controller K++V2".
3. **Physical Inspection:**
    - Carefully examine the casing for any visible defects, including cracks, scratches, or warping.
    - Ensure all components listed on the product information or packaging are present (e.g., mounting holes, cables).
    - Verify that all connectors, ports, and buttons are in good condition, free from damage, and properly aligned.
4. **Functional Test (Optional):**
    - If feasible without connecting other components, power on the Flight Controller and observe for successful initialization (e.g., LEDs lighting up in a specific sequence).

9.1.7 Propulsion: Quality Control Inspection

Tools Required

- Battery (compatible with the motor)
- PWM Generator (or compatible flight controller)

Instructions

1. **Packaging Inspection**
    - Verify that the packaging is intact and free from any significant damage (crushing, tears, punctures).
    - Check for the presence of a product label.
2. **Product Identification**
    - Verify that the product label clearly identifies the model as "Hobbywing X6 Plus".
3. **Physical Inspection**
    - **Motors:** Carefully examine the motor casing for any visible defects, including cracks, scratches, or dents. Ensure the motor shaft spins freely without excessive friction or grinding.

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- **Propellers:** Inspect the propellers for any cracks, chips, or warping that could affect balance and performance. Verify the propellers are undamaged and suitable for the specific motor.

4. **Functional Testing**
   - **Motor Rotation (Basic Check)**
     - Connect the motor to a fully charged battery with compatible voltage using appropriate connectors.
     - **Caution:** Do not use a live flight controller for this test; utilize a dedicated PWM generator for safe testing.
     - Connect the PWM generator to the motor's signal cable.
     - Apply a low throttle signal (refer to generator instructions) on the PWM generator and observe the motor shaft.
     - The motor shaft should rotate freely in the intended direction (consult the motor's manual for designated direction).
   - **Motor Thrust Test**
     - Secure the motor and propeller assembly to a proper test stand (ensure safe propeller balancing and clearance).
     - Connect the motor and battery as mentioned in the previous step.
     - Gradually increase the throttle signal on the PWM generator while observing the motor and propeller.
     - The motor and propeller should generate increasing thrust without wobbling or unusual vibrations.

9.1.8 CAN Hub: Quality Control Inspection

1. **Packaging Inspection:**
   - Verify that the packaging is intact and free from any significant damage (crushing, tears, punctures).
   - Check for the presence of a product label.
2. **Product Identification:**
   - Verify that the product label clearly identifies the model as "Jiyi CAN Hub".
3. **Physical Inspection:**
   - Carefully examine the casing for any visible defects, including cracks, scratches, or warping.

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- Verify that all connectors, ports (CAN bus ports, power supply, etc.), and buttons (if applicable) are in good condition, free from damage (bent pins, loose ports), and properly aligned.

9.1.9 Obstacle Avoidance Radar (Front & Back): Quality Control Inspection

1. **Packaging Inspection:**
   - Verify that the packaging is intact and free from any significant damage (crushing, tears, punctures).
   - Check for the presence of a product label.
2. **Product Identification:**
   - Verify that the product label clearly identifies the model as "Obstacle Avoidance Radar (Front)".
3. **Physical Inspection:**
   - Carefully examine the casing for any visible defects, including cracks, scratches, or dents.
   - Ensure the radar lens is clean and free of obstructions.
   - Verify that all connectors (for power and data transmission) are in good condition, free from damage (bent pins), and properly aligned.
   - Check for any loose parts within the housing (if applicable).

9.1.10 Terrain Following Radar: Quality Control Inspection

1. **Packaging Inspection:**
   - Verify that the packaging is intact and free from any significant damage (crushing, tears, punctures).
   - Check for the presence of a product label.
2. **Product Identification:**
   - Verify that the product label clearly identifies the model as "Terrain Following Radar".
3. **Physical Inspection:**
   - Carefully examine the casing for any visible defects, including cracks, scratches, or dents.
   - Ensure the radar antenna(s) is clean and free of obstructions.
   - Verify that all connectors (for power and data transmission) are in good condition, free from damage (bent pins), and properly aligned.
   - Check for any loose parts within the housing (if applicable).

9.1.11 Battery: Quality Control Inspection

1. **Packaging Inspection:**

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- Verify that the packaging is intact and free from any significant damage (crushing, tears, punctures).
- Check for the presence of a product label.

2. **Product Identification:**
   - Verify that the product label clearly identifies the model as "25200 mAh Battery".
3. **Physical Inspection:**
   - Carefully examine the battery casing for any visible defects, including cracks, bulges, or leaks.
   - Ensure the battery terminals are free from corrosion or damage.
   - Verify the presence of a readable label with the following information:
     - Battery model number (should match "25200 mAh")
     - Nominal voltage (e.g., 11.1V or 14.8V)
     - Manufacturer information
     - **R. No (Registration Number):** Confirm the presence of a clear and valid R.No. on the label (regulation requirement in some regions).
4. **Functional Testing (Optional):**
   - **Charging Test:**
     - Utilize a compatible battery charger to charge the battery according to the manufacturer's instructions.
     - Monitor the charging process visually (no unusual heat or bulging).
     - You can optionally use a Multimeter to monitor the voltage reaching the specified level for the battery model (consult the charger and battery manuals for details).
   - **Discharging Test (Optional):**
     - Utilize a dedicated battery discharger (or appropriate testing equipment) to discharge the battery at a safe rate (refer to battery specifications).
     - Monitor the discharging process visually (no unusual heat or bulging).
     - You can optionally use a Multimeter to monitor the voltage level dropping gradually.

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Transmitter Quality Inspection checklists

S. No	Name of the Checks	Quality Checkpoints	Tools Used	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
					SAT	UNSAT		
1	Product Identification	Identify whether the Transmitter is named Skydroid H12						
2	Functional Testing	Power on the transmitter and check for any abnormal sounds or smells.						
		Check whether Display is working						
		Check whether the transmitter is binding with the receiver.						
3	Visual Checks	No damage, nicks, or scratches on the transmitter						
		Check whether Display is not cracked						

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Airframe Centre Hub Quality checklists

S. No	Name of the Checks	Quality Checkpoints	Tools Used	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
					SAT	UNSAT		
1	Visual	Check whether the frame is free from any defects or scratches						
2	Dimensional Checks	Check if the Length of Middle Centre hub is: 335mm±1mm Height: 80 mm ±0.5 mm	Steel Ruler					
		Check whether the Centre hub has 6 holes with Φ 40mm holes for mounting arms	Vernier Caliper					
3	Bottom Part	Check whether the Centre hub has 4 tripod mounts mounted.						
4	Top Part	Check whether the Centre hub has 6 sets of Φ3mm through holes for fastening Arms	Vernier Caliper					

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Arm Quality checklists

S. No	Name of the Checks	Quality Checkpoints	Tools Used	Measured Value / Remarks						QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				A1	A2	A3	A4	A5	A6	SAT	UNSAT		
1	Visual Checks	Ensure the Centre Frame Arm is visually free from any defects											
		Ensure the Motor Arm is visually free from any defects, scratches or cracks											
2	Centre Arm	Check if the Length of Arm : 325mm±1mm Dia: 40 mm ±0.5 mm	Steel Ruler/ Vernier Caliper										
		Check whether the Arm has Sufficient mounting holes											
3	Motor Arm	Check if the Length of Arm: 385mm±1mm Inner Dia: 28 mm ±0.5 mm Outer Dia: 30 mm ±0.5 mm	Steel Ruler/ Vernier Caliper										

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4	Folding Arm Mechanism	Check whether the Folding Arm Mechanism as Φ6mm through holes at the top as per the Drawing	Vernier Caliper										
		Check if the Folding Arm has Φ36 mm through hole Height: 70 mm ±0.5 mm Width: 50 mm ±0.5 mm	Vernier Caliper										

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Landing Gear Quality checklists

S. No	Name of the Checks	Quality Checkpoints	Tools Used	Measured Value / Remarks				QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
								SAT	UNSAT		
1	Visual Checks	Ensure the vertical Landing Gear rods are visually safe									
		Ensure the Horizontal Landing Gear Rods are visually free from damage									
2	Vertical Landing Gear	Check if the Length is: 420mm±0.5mm Outer Dia: – 20 mm ±0.5 mm Inner Dia: – 18 mm ±0.5 mm	Measuring Tape, Vernier Caliper	V1	V2	V3	V4				
3	Horizontal Landing Gear	Check if the Length is: 500mm±0.5mm Outer Dia: – 20 mm ±0.5 mm Inner Dia: – 18 mm ±0.5 mm	Measuring Tape, Vernier Caliper	H1		H2					

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Flight Controller Quality Inspection checklists

S. No	Name of the Checks	Quality Checkpoints	Equipment used	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
					SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.						
		Check for whether Product Label is available or Not						
2	Product Identification	Verify that the product label matches the specified model: "Flight Controller K++V2"						
3	Physical Inspection	Inspect the casing for Any visible damages, cracks, or irregularities						
		Ensure all the parts of the Product mentioned are available						
		Verify that all connectors, ports, and buttons are in good condition and properly aligned.						
4	Functional Testing	Power up the Flight Controller and ensure that it initializes correctly.	USB cable					

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Propulsion Part Quality Inspection Checklists

S. No	Name of the Checks	Quality Checkpoints	Equipment used	Measured Value / Remarks						QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				M 1	M 2	M 3	M 4	M 5	M 6	SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.											
		Check for whether Product Label is available or Not											
2	Product Identificati on	Verify that the product label matches the specified model: "Hobbywing X6 Plus"											
3	Physical Inspection	Inspect the motors for Any visible damages, cracks, or irregularities											
		Inspect the propellers for any visible cracks or irregularities											
4	Functional Testing	Ensure the motor is rotating freely	Battery, PWM Generator										
		Ensure Motor+Propellers produce thrust	Battery, PWM Generator										

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CAN Hub Quality Inspection Checklists

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.					
		Check for whether Product Label is available or Not					
2	Product Identification	Verify that the product label matches the specified model: "Jiyi CAN Hub"					
3	Physical Inspection	Inspect the casing for Any visible damages, cracks, or irregularities					
		Verify that all connectors, ports, and buttons are in good condition and properly aligned.					

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Obstacle Avoidance Radar (Front) Quality Checklist

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.					
		Check for whether Product Label is available or Not					
2	Product Identification	Verify that the product label matches the specified model: "Obstacle Avoidance Radar (Front)"					
3	Physical Inspection	Inspect the casing for Any visible damages, cracks, or irregularities					
		Verify that all connectors, ports, and buttons are in good condition and properly aligned.					

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Obstacle Avoidance Radar (Rear) Quality Checklist

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.					
		Check for whether Product Label is available or Not					
2	Product Identification	Verify that the product label matches the specified model: "Obstacle Avoidance Radar (Rear)"					
3	Physical Inspection	Inspect the casing for Any visible damages, cracks, or irregularities					
		Verify that all connectors, ports, and buttons are in good condition and properly aligned.					

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Terrain Following Radar Quality Checklist

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.					
		Check for whether Product Label is available or Not					
2	Product Identification	Verify that the product label matches the specified model: "Terrain Following Radar"					
3	Physical Inspection	Inspect the casing for Any visible damages, cracks, or irregularities					
		Verify that all connectors, ports, and buttons are in good condition and properly aligned.					

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Battery Inwarding Checklists

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks		QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
			B1	B2	SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.						
		Check for whether Product Label is available or Not						
2	Product Identification	Verify that the product label matches the specified model: "25200 mAh Battery"						
3	Physical Inspection	Inspect the Battery for Any visible damages, cracks, or irregularities						
		Inspect the Battery for R.No being there and being correct						
4	Functional Testing	Battery charging and Discharging						

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Pump Part Quality Inspection Checklists

S. No	Name of the Checks	Quality Checkpoints	Equipment used	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
					SAT	UNSAT		
1	Packaging	Verify that the packaging is intact and free from damage.						
		Check for whether Product Label is available or Not						
2	Product Identification	Verify that the product label matches the specified model: "Hobbywing 5L Pump"						
3	Physical Inspection	Inspect the Pump for Any visible damages, cracks, or irregularities						

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		Inspect the propellers for any visible cracks or irregularities						
4	Functional Testing	Ensure the motor is rotating freely	Battery, PWM Generator					
		Ensure Pump's water flow out processes are adequate	Battery, PWM Generator, Pipes					

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9.2 Assembly level quality

8.2.1 Acceptance Criteria

- All dimensional measurements must precisely adhere to the specified tolerances outlined in the manufacturing manual. No deviations are permissible.
- There must be no loose screws or improperly tightened components within the assembly.
- The completed assembly must be precisely level and free from any visible defects or imperfections.

9.2.1.1 Documentation and Reporting

- Maintain a comprehensive record of all completed inspections for future reference. This record should include the date of inspection, the name of the inspector, and a completed copy of the quality control checklist with all steps documented.
- Complete each inspection step outlined below. Mark "SAT" or "UNSAT" in the designated "QC Pass" section for each step after completion. Record any remarks or corrective actions taken in the "Measured Value / Remarks" section.

9.2.2. Airframe Assembly: Quality Control Inspection

9.2.2.1 Required Tools and Equipment

- Allen key set (appropriate sizes for installed screws)
- Spirit level
- Steel ruler (graduated in millimetres)
- Vernier calliper

9.2.2.2 Screw Tightening Inspection

Employ the appropriate size Allen key from the provided set to meticulously inspect the tightness of all screws within the landing gear assembly. Ensure each screw is firmly secured, adhering to the specified torque values and ensure application of Loctite.

9.2.2.3 Surface Level and Centre Frame Level Inspection

Utilize the spirit level to meticulously assess the surface level of both the landing gear assembly and the centre frame. Verify they are precisely flat within the acceptable tolerances designated in the manufacturing manual.

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9.2.2.4 Frame Centre Hub Dimensional Inspection

Employ the steel ruler to meticulously measure the length and height of the frame centre hub. Ensure all measurements precisely align with the specified tolerances outlined in the manufacturing manual:

- Length: 335mm ± 1mm
- Height: 76 mm ± 0.2 mm

9.2.2.5 Vertical Landing Gear Dimensional Inspection

Utilize the steel ruler to meticulously measure the height of the vertical landing gear. Verify the measurement precisely aligns with the designated specifications outlined in the manufacturing manual:

- Length: 420mm ± 1mm
- Outer diameter: Φ 20
- Inner diameter: Φ 18

9.2.2.6 Horizontal Landing Gear Dimensional Inspection

Employ both the steel ruler and vernier callipers for precise measurements:

Utilize the steel ruler to meticulously measure the length of the horizontal landing gear. Ensure the measurement falls precisely within the designated tolerance outlined in the manufacturing manual:

Length: 500mm ± 1mm

Employ the vernier callipers to meticulously measure the outer and inner diameters of the horizontal landing gear. Verify both measurements precisely align with the designated specifications outlined in the manufacturing manual:

Outer diameter: Φ 20

Inner diameter: Φ 18

9.2.2.7 Frame and Landing Gear Tightness Inspection

Utilize appropriate tools to meticulously verify that the assembled frame and landing gear are firmly tightened as per the manufacturing manual instructions. Ensure all connections are secure and free from any looseness.

9.2.3 Spray System Assembly: Quality Control Inspection

9.2.3.1 Required Tools and Equipment

- Allen key set (appropriate sizes for installed screws)
- Vernier callipers
- Measuring tapes
- Steel ruler

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- Spirit level

9.2.3.2 Screw Tightness Inspection

Employ Allen keys of appropriate sizes to meticulously inspect the tightness of every screw associated with the fluid system components. Ensure application of Loctite on the fasteners

Ensure all screws are firmly secured, adhering to the manufacturing manual.

9.2.3.3 Fluid Pipe and Tube Connection Inspection

Inspect all fluid pipe and tube connections for proper attachment and absence of looseness.

Gently tug on each connected pipe and tube to confirm secure attachment without any detectable movement.

9.2.3.4 Fluid Pipe and Tube Dimensional Inspection

Utilize vernier callipers or a combination of measuring tapes and steel rulers to meticulously measure the length and outer diameter of each fluid system pipe and tube.

Verify that all measurements precisely align with the designated specifications outlined in the Manufacturing Manual

Pipe 1:

- Length: 750mm ± 1mm
- Outer Diameter: Φ12

Pipe 2:

- Length: 3750mm ± 1mm
- Outer Diameter: Φ 8

9.2.3.5 Payload Tank Flatness Inspection

Utilize a spirit level to meticulously assess the flatness of the assembled payload tank surface.

Ensure the surface is precisely level within the acceptable tolerances.

9.2.3.6 Obstacle Avoidance Mount Inspection

Conduct a thorough inspection to confirm the Obstacle Avoidance Mount is securely fastened to the designated location on the payload tank, adhering to the assembly instructions outlined in the manufacturing manual. Ensure there are no loose fasteners or misalignments.

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9.2.3.7 Terrain Avoidance Mount Inspection

Conduct a thorough inspection to confirm the Terrain Avoidance Mount is securely fastened to the designated location on the payload tank, adhering to the assembly instructions outlined in the manufacturing manual. Ensure there are no loose fasteners or misalignments.

9.2.4 Propulsion Assembly: Quality Control Inspection

9.2.4.1 Required Tools and Equipment

- Multimeter
- Allen keys (appropriate sizes for installed screws)
- Spirit level

9.2.4.2 Soldering Check

Verify all soldered connections are free of visible defects (cracks, excessive solder build-up, incomplete joints). Gently tug on each wire at the XT60 connector to confirm secure attachment and absence of loose connections.

9.2.4.3 Soldering Continuity Check

Utilize a Multimeter to verify electrical continuity between the following:

- Power wire ground and ground wire of the XT60 connector.
- Signal wire ground and ground wire of the XT60 connector.

9.2.4.4 Screw Tightening Check

Employ Allen keys of appropriate sizes to meticulously inspect the tightness of all screws within the propulsion assembly. Ensure all screws are firmly secured according to the manufacturing manual.

9.2.4.5 Motor Tightness Check

Ensure all motors are securely fastened to their designated mounts, adhering to the tightening requirements outlined in the manufacturing manual. Verify no loose connections exist between the motors and their mounts.

9.2.4.6 Motor Level Check

Utilize a spirit level to assess the levelness of each motor relative to a flat surface. Ensure minimal deviation from level.

9.2.4.7 Nozzle Integrity Check

Visually inspect all nozzles to confirm proper mounting and absence of any cracks, deformations, or damage. Ensure all nozzles are securely fastened and free of any defects that could compromise performance.

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9.2.4.8 ESC Calibration

Ensure proper ESC calibration for optimal motor control and performance. If not calibrated perform ESC calibration as mentioned in the Manufacturing/Flight Manual.

9.2.5 Avionics Assembly: Quality Control Inspection

9.2.5.1 Wire Alignments

Verify all wire cables are free of visible damage (cuts, frays, insulation breaches).

Ensure all wires are routed neatly and secured to prevent chafing or entanglement during operation.

9.2.5.2 GPS and Flight Controller Direction

Confirm proper orientation of both the GPS and Flight Controller units according to the manufacturer's instructions.

9.2.5.3 Electronic Component Alignment

Verify that all electronic components (Flight Controller, Obstacle Avoidance Sensors, Terrain Awareness Sensors, GPS, Power Management Unit, and CAN hub) are securely fastened in their designated locations with the correct orientation.

9.2.5.4 Arming Check

Power on the system and verify proper motor rotation direction upon entering armed mode. Ensure no unexpected motor movements occur.

9.2.5.5 Software Check

Utilize the appropriate software application to access and verify all relevant flight parameters are set according to the specific aircraft configuration.

9.2.5.6 Transmitter Evaluation

Systematically test all transmitter controls and flight modes to ensure proper functionality and signal reception.

9.2.5.7 Canopy Check

Verify the canopy is securely fastened using all designated screws and there are no gaps or loose fittings.

9.2.6 Wiring: Quality Control Inspection

9.2.6.1 Wire Alignments

Verify all wires are aligned correctly within their respective connectors after soldering. Ensure no stray strands or mismatched pins.

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9.2.6.2 Damage Inspection

Meticulously inspect all wires and connectors for any signs of damage, including cuts, frays, deformation, or corrosion.

9.2.6.3 Wire Fastenings

Confirm that all wires are securely fastened to the structure using designated zip ties or clamps to prevent chafing or entanglement.

9.2.6.4 Loose Connections

Perform a gentle pull test on all connectors to ensure firm connections between the harness and electronic components.

9.2.6.5 Wiring Diagram Comparison

Visually compare the completed wiring harness to the corresponding wiring diagram. Verify all connections are routed and terminated according to the designated layout.

9.2.6.6 Crimping/Soldering Check

Inspect all connectors (crimped or soldered) to ensure secure attachment to the wires. Look for proper crimp formations or adequate solder joints.

9.2.6.7 Power-Up Test

Connect the battery pack(s) to the wiring harness. Power on the system and verify all connected components receive power.

9.2.6.8 Functional Test

Conduct a functional test (refer to specific equipment instructions) to verify proper operation of all onboard electronic components.

9.2.7 Soldering Quality Control Inspection

- **Wire Alignment:** Verify all wires are aligned correctly within their respective connectors after soldering. Ensure no stray strands or mismatched pins.
- **Wire Insertion Check:** Ensure the stripped portion of each wire is fully inserted inside the connector, with no strands protruding outside.
- **Solder Joint Inspection:** Visually inspect all solder joints for any defects, such as leaks, unwanted links (solder bridges), or excessive protrusions.
- **Solder Coverage Check:** Verify that the solder material has settled properly, completely covering the stripped portion of the wire and the metallic contacts on the connector.
- **Pull Test:** Perform a pull test on all wires by gently shaking and pulling them with moderate force to confirm secure attachment to the connector.
- **Continuity Check:** Utilize a Multimeter to verify electrical continuity between the connector terminal and the corresponding wire tip. Ensure proper soldering with no short circuits.

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- **Damage Inspection:** Inspect the connector and wires for any signs of damage or burning caused by the soldering iron.
- **Insulation Check:** Verify that all solder joints are insulated safely. Ensure no exposed solder joints exist on the drone frame or wiring harness.

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Airframe Assembly Quality Visual Inspection checklists

S. No	Name of the Checks	Dimensions to be Checked	Quality Checkpoints	Tools Used	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
						SAT	UNSAT		
1	Screws Tightening Check	-	Ensure the screws are tightened properly	Allen keys					
		-	Check how Loctite is being applied						
2	Surface level and center frame level Check	-	Ensure the surface level of Assembly part and the center frame are flat	Spirit Level					
3	Frame Centre hub Measurement	Length: 335mm±1mm Height: 80 mm ±0.5 mm	Ensure the length and height of the frame is within tolerances	Steel Ruler					
	Vertical landing gear	Length: 420mm Tolerance: ±1 mm Outer Diameter: Φ 20 Inner Diameter: Φ 18	Ensure the height of the vertical landing gear	Steel Ruler					
	Horizontal landing gear	Length: 500mm Tolerance: ±1 mm Outer Diameter:Φ 20 Inner Diameter: Φ 18	Ensure the height of the horizontal landing gear is appropriate using inch tape	Steel Ruler and vernier caliper					

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4	Frame, PDB and Landing gear tightness Check		Ensure the assembled frame, PDB and landing gear are properly tightened						

Spray System Assembly Quality Visual Inspection checklists

S. No	Name of the Checks	Quality Checkpoints	Equipment used	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
					SAT	UNSAT		
1	Tightness of the screws Check	Check the tightening of the screws	Allen keys					
2	Connection of flow pipes and tubes	Ensure appropriate connection without looseness by slightly tugging out the tubes from the connectors						
3	Dimension of tubes check	Measure and verify that length of the tubes and diameter of tubes are as follows: Length: 750mm±1 mmOuter Diameter: Φ12 Length: 3750mm±1 mm Outer Diameter: Φ 8	Vernier caliper/ Measuring tapes/ Steel Ruler					
4	Check whether Tank is of right level	Ensure the flatness of the assembled tank	Spirit level					
5	Mounting of Obstacle	Check whether Obstacle						

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	Avoidance mount on the Payload tank	Avoidance Mount is fastened properly to the payload						
6	Mounting of Terrain Avoidance mount on the Payload tank	Check whether Terrain Avoidance Mount is fastened properly to the payload						

Propulsion Assembly Quality Inspection Checklists

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Soldering Check	Ensure proper soldering is done by slightly tugging out of the wire from XT60 connector					
		Ensure proper soldering by checking the continuity between power wire ground and signal wire ground					
2	Screws Tightening Check	Ensure the tightening of the screws					
	Tightness Check for Motors	Ensure the motors are properly tightened					
3	Tightness Check for frame and motor arms	Ensure the frame arm and motor arm are properly tightened					
4	Level Check for CC and CCW Motors	Ensure the flatness of the motors with respect to surface using spirit level					
5	Nozzle integrity Check	Ensure the nozzle are properly mounted					
6	ESC Calibration	Ensure that ESC are calibrated					

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Avionics Assembly Quality Inspection Checklists

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Wire Alignments	Ensure the wire cables do not have any damage and are aligned properly					
2	Direction of GPS and flight controller	Ensure the directions of GPS and FC are properly fixed					
3	Check the electronic components alignments	Ensure Flight Controller, Obstacle Avoidance Sensors, Terrain Awareness Sensors, GPS, Power Management Unit, and CAN hub are all fixed in the right location and are oriented properly					
4	Arming Check	Ensure the motors are rotating when armed and propeller rotation direction					
5	Software Check	Ensure all parameters are appropriately set in the software					
6	Evaluation of Transmitter	Ensure all the transmitter modes are working properly					
7	Canopy Check	Ensure the canopy is properly tightened with					

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		screws					

Wiring Quality Inspection Checklists

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Wire Alignments	Check whether the Wires are aligned properly to the connector's contacts after soldering.					
2	Damage Inspection	Check if any of the wires or connectors have been damaged, or deformed					
3	Wire Fastenings	Check whether the wires are fastened to the structure properly.					
4	Loose Connections	Check whether all connectors are firmly connected to their respective components by performing a simple pull test.					
5	Wiring Diagram Comparison	Check whether all onboard connections are in accordance with the Wiring Diagram.					
6	Crimping/Soldering Check	Check whether all connectors are crimped / soldered firmly to the wires.					
7	Power-up Test	Check whether all components are getting					

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		powered on after connecting the battery packs					
8	Functional Test	Check whether all components onboard are functioning properly on supplying power					

Soldering Quality Inspection Checklists

S. No	Name of the Checks	Quality Checkpoints	Measured Value / Remarks	QC Pass		TECHNICIAN NAME & SIGNATURE	QA NAME & SIGNATURE
				SAT	UNSAT		
1	Wire Alignments	Check if the Wires are aligned properly to the connector's contacts after soldering.					
2	Visual Inspection 1	Ensure that the stripped portion of the wire gets fully inserted inside the connector without any strands protruding outside					
3	Visual Inspection 2	Check whether the Solder Joint has any leakages, unwanted links or protrusions					
4	Visual Inspection 3	Check whether the Solder Material has settled properly covering the entire stripped portion of the wire and the metallic contacts on the Connector.					
5	Mechanical Inspection - Pull Test	Check if the wires are firmly attached by shaking and pulling them with reasonable force from the connector.					
6	Continuity Check	Check for continuity between the Connector terminal and the wire tips to ensure that the soldering is perfect with no short circuits					

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7	Inspection for Damages	Check whether the connector or wire has been damaged or burnt due to the heat from the Soldering Iron						
8	Insulation Check	Ensure that there are no exposed solder joints on the drone and that all solder joints have been insulated safely						

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9.3 Inward Inspection Procedure

9.3.1. Purpose

To ensure that all incoming parts and components for the agricultural drone meet the required quality standards and specifications before being accepted into inventory.

9.3.2. Responsibilities

- **QC Inspector:** Responsible for conducting the inspection according to this procedure.
- **Quality Engineer:** Responsible for reviewing and approving the QC results and ensuring compliance with the quality standards.

9.3.3. Required Tools and Equipment

- Vernier calipers
- Multimeter
- Visual inspection tools (e.g., magnifying glass)
- Allen keys (appropriate sizes for installed screws)
- Spirit level

9.3.4. General Inspection Process

1. **Visual Inspection**
    - Examine each part for visible defects such as cracks, dents, scratches, or other damages.
    - Ensure all components are clean and free from contaminants.
2. **Dimensional Inspection**
    - Measure critical dimensions using appropriate tools (vernier calipers, micrometer) to ensure they meet specified tolerances.
    - Verify dimensions against the technical drawings and specifications provided.
3. **Functional Inspection**
    - Test the functionality of components as applicable (e.g., continuity tests for electrical components, flow tests for pneumatic connectors).
    - Verify that moving parts operate smoothly and without obstruction.
4. **Documentation**
    - Record the inspection results for each component in the Inward QC Form.
    - Mark each part as Pass or Fail based on the inspection findings.

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- Note any discrepancies, deviations, or observations in the remarks section.

5. **Approval**
   - The Quality Engineer reviews and signs off on the completed QC forms.
   - Approved parts are accepted into inventory; failed parts are tagged and isolated for further review and disposition.

9.3.5. Non-Conformance Handling

- Identification: Tag and isolate any parts that do not meet the quality standards.
- Documentation: Record non-conformances in the form.
- Disposition: Determine the disposition (e.g., rework, return to supplier, scrap) in consultation with the Quality Engineer.

9.3.6. Review and Continuous Improvement

- Periodically review the inspection process and criteria for effectiveness.
- Implement improvements based on feedback, trends in non-conformances, and technological advancements.

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AIRFRAME

S. No	PART NAME	CHECKPOINTS FOR QUALITY			QUANTITY	QC (PASS/FAIL)	REMARKS
		VISUAL	GEOMETRICAL	SPECIFICATIONS			
1	Centre Frame	Ensure no dent or crack on the surface	Length- 348 ±0.5mm	NA			
		Check the screw thrus or given or not	Length with Arm Holder: 368 ±0.5mm				
		Aspect Check for arm holder	Height- 76 ±0.5mm				
		Ensure the rubber bush in wire ports is attached	Width - 336 ±0.5mm				
			Length of PDB - 102 ±0.5mm				

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			FC Plate screw thru - 3				
			Cowling screw thru - 3				
			Arm screw thru - 3				
			Frame height - 80 ∓ 0.5				
			Frame bottom plate screw thru - 6				
			Tripod Mount screw - 29 ∓ 0.5				
			Tripod Distance of screws - 29 ∓ 0.5				
			Led provision distance - 29 ∓ 0.5				

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			Camera Provision Height - 24 ±0.5mm, Width - 18 ±0.5mm				
			Camera Provision Width - 18 ±0.5mm				
			Frame arm port inner diameter - 37 ±0.5mm				
			Height with Cowling - 133 ±0.5mm				
2	Cowling	Ensure no crack	Height - 61 ±0.5mm	NA			
		Ensure no dent on the surface	Length - 341±0.5mm				
		Check any other damages	Breadth - 336 ±0.5mm				

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		in Screw thru					
			Thickness - 2mm				

			Inner Length - 333 ±0.5mm				
			Inner diagonal length - 329 ±0.5mm				
			Cowling screw thru - 3mm				
3	Power Distribution Board	Check whether the 10 Female connectors are mounted correctly	Length - 81± 0.5mm	N A			
		Ensure no dent or crack on the surface	Breadth- 80± 0.5mm				
		Ensure the Screws are given	Height of Connectors - 16± 0.5mm				

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		Check the Female Connectors aspect by manually connecting it with male connector	Height with connector - 25± 0.5mm				
		Check the continuity with Multi-meter	Thickness - 2 ± 0.5mm				
4	PDB Bottom Plate	Ensure no damage or Crack in the plate	Length= 94 ± 0.5mm	N A			
		Ensure the Screws and the Bushes are given	Breadth - 44 ± 0.5mm				
			Height= 5 ± 0.5mm				
5	Wire with XT9 Male Connector	Ensure no dent or Crack on the surface	Length - 490 ±0.5mm	N A			
		For Aspect Check, Connect the Male connector with Dummy Female Connector	Wire Diameter(8AWG) - 6 ±0.5mm				
		Ensure no Kink and no exposure in wire surface	Length - 45 ± 0.5mm				

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6	Tripod Mount	Ensure no crack or dent on the surface	Height - 60 ± 0.5mm	N A			
		Aspect Check,by Connecting the Mount with Vertical landing gear	Breadth-48 ± 0.5mm				
		Ensure the screws and the screw thru are given	Outer Diameter-24 ± 0.5mm				
			Inner diameter-19 ± 0.5mm				
			Inclination- 70°				
			Length - 45 ± 0.5mm				

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7	Frame Arm	Ensure no dent or Crack on the surface	Length: 265 ±0.5mm	NA			
		Ensure all Screw thrus are given	Outer Diameter: 37 ±0.5mm				
		Ensure all screws are available	Diameter of Octa shape: ≈ 20mm				
		For Aspect Check, Connect Frame arm to centre frame	Inner Diameter: 35 ±0.5mm				
			Thickness: 1mm				

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			Dimension of Ports Frame arm-Centre frame 1st port: 20 ±0.5mm 2nd port: 35±0.5mm 3rd port: 70 ±0.5mm				
			Frame arm-Folding Boom Mount 1st port: 30 ±0.5mm 2nd port: 55±0.5mm				
8	Arm Tighter	Ensure no dent or Crack on the surface	Outer diameter - 55 ±0.5mm	NA			
		Ensure the thread is good	Inner diameter (facing centre frame)- 48 ±0.5mm				
		For Aspect check, Connect the arm tighter to the Centre frame	Thickness - 4 ±0.5mm				
			Inner diameter (facing frame arm) - 42 ±0.5mm				

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9	Frame Arm Rubber Washer	Ensure the rubber washer is not torn	Outer diameter - 46 ±0.5mm	NA			
		Check whether the rubber washer is fitting properly inside the Arm tighter and centre frame	Thickness - 5 ±0.5mm				
		Ensure that the rubber washer is not squeezed	Inner diameter - 36 ±0.5mm				
10	Frame Arm Metal Washer	Ensure no dent or Crack on the surface	Inner Diameter - 40 ±0.5mm	NA			
		Check whether the metal washer is fitting properly inside the Arm tighter and centre frame	Outer Diameter - 48 ±0.5mm				
			Thickness - 4 ±0.5mm				

11	Motor Arm	Ensure no dent or Crack on the surface	Length: 333 ±0.5	NA			
		Check the Screw thrus are given	Outer Diameter: 30 ±0.5mm				

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		For Aspect check, Insert the motor arm to frame arm	Inner Diameter: 28 ±0.5mm				
			Thickness: 2 ±0.5mm				
12	Folding Boom Mount	Ensure no dent or Crack on the surface	Length - 117 ±0.5mm	NA			
		Check whether the mount washer is given or not	Width - 46 ±0.5mm				
		For Aspect check, Insert the mount in the frame arm	Height - 52 ±0.5mm				
		For Thread Aspect check, Connect the Boom in the Mount(In given thread)	Inner Diameter(Frame arm): 37 ±0.5mm				
		Check for Bush Availability	Outer Diameter(Frame arm) - 46±0.5				
			Inner Diameter(Motor arm) - 30 ±0.5mm				
			Motor Arm connection port inner diameter - 5 ±0.5mm				

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			Motor Arm connection port thickness - 8 ±0.5mm				
13	Folding Large Nut(Boom)	Ensure no dent or Crack on the surface	Height - 52 ±0.5mm	NA			
		Check the Boom washer is given or not	Outer diameter(to mount) - 50 ±0.5mm				
		For aspect check, connect the boom to the Folding boom mount	inner diameter (to mount) - 42 ±0.5mm				
			Outer diameter (Motor Arm) - 44 ±0.5mm				
			Inner Diameter (Motor Arm) - 36 ±0.5mm				
			Thickness - 4 ±0.5mm				

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14	Vertical Landing Gear	Ensure no dent or Crack on the surface	Length-420 ± 0.5mm	NA			
		For Aspect Check, Connect the vertical landing gear to the Tripod Mount and to the Horizontal Landing Gear Mount	Outer Diameter-20Φ ± 0.5mm				
		Check Whether the Tank clamp is given or Not	Inner Diameter - 18 Φ ± 0.5mm				
		Ensure the screw thrus are given	Thickness - 1 ± 0.5mm				
15	Tank fixing clamps (in vertical landing gear)	Ensure no dent or Crack on the surface	Outer diameter=26 ± 0.5mm	NA			
		Check whether the Screws are given	Inner diameter=20 ± 0.5mm				

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		For Aspect Check, insert it to the vertical landing gear	Height=34 ± 0.5mm				
16	Horizontal Landing Gear	Ensure no dent or Crack on the surface	Length - 500 ± 0.5mm	NA			
		Check Whether the Landing gear Tee-connector is given	Outer Diameter- 20 Φ ± 0.5mm				
		Check Whether the Rubber bush is given or Not	Inner Diameter- 18 Φ ± 0.5mm				
		Ensure the screw thrus are given	Thickness - 1 ± 0.5mm				
17	Tee-Connector (Horizontal Landing Gear)	Ensure no dent or Crack on the surface	Height -53 ± 0.5mm	NA			
		Check whether the Screws are given	Width - 36 ± 0.5mm				
		For Aspect Check, Connect it to the horizontal Landing gear	Outer Diameter - 26 ± 0.5mm				

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			Inner Diameter - 20 ± 0.5mm				
			Thickness - 3 ± 0.5mm				
18	Foot Shelf Horizontal Landing gear Rubber	Ensure no Tear and deformation	Length - 70 ± 0.5mm	NA			
		Ensure no dent on the surface	Outer Diameter - 32 ± 0.5mm				
			Inner Diameter - 20 ± 0.5mm				
			Depth- 67 ± 0.5mm				
			Thickness- 6 ± 0.5mm				
			Length - 70 ± 0.5mm				

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19	FC Plate	Ensure the screw thrus are given	Length-123 ± 0.5mm	NA	1		
		Ensure no crack	Breadth - 72 ± 0.5mm				
		Ensure the FC plate is flat without uneven surface	Thickness-2 ± 0.5mm				
		Ensure no scratch					
20	LED Glass	Ensure no Crack and any other damages	Length - 25 ± 0.5mm	NA	1		
			Width - 32 ± 0.5mm				
			Thickness - 4 ± 0.5mm				
21	M3*8 Allen Screw	Ensure that there is no Crack or damages	Length: 8 ±0.5mm	NA	106		

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		Ensure the threads are good	Diameter: 3 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - 5 ±0.5mm				
			Allen port - 2.5 ±0.5mm				
22	M3*10 (PBD Board)	Ensure that there is no Crack or damages	Length - 10 ±0.5mm	NA	4		
		Ensure the threads are good	Diameter - 3 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - `5 ±0.5mm				
			Allen port - 2.5 ±0.5mm				
23	M5*50 with lock nuts (Folding boom)	Ensure that there is no Crack or damages	Length: 50 ±0.5mm	NA	6		

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		Ensure the threads are good	Diameter: 5 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - 8 ±0.5mm				
			Allen port - 4 ±0.5mm				
24	M4*12 (Tank clamp and tripod mount)	Ensure that there is no Crack or damages	Length: 12 ±0.5mm	NA	16		
		Ensure the threads are good	Diameter: 4 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - 6 ±0.5mm				
			Allen port - 2.5 ±0.5mm				

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25	M3*10 (T-Connector)	Ensure that there is no Crack or damages	Length: 10 ±0.5mm	NA			
		Ensure the threads are good	Diameter: 3 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - 5 ±0.5mm				
			Allen port - 2.5 ±0.5mm				
26	M3*20 (Horizontal landing gear)	Ensure that there is no Crack or damages	Length: 20 ±0.5mm	NA			
		Ensure the threads are good	Diameter: 3 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - 5 ±0.5mm				
			Allen port - 2.5 ±0.5mm				
27	M3*5 (PDB Board)	Ensure that there is no Crack or damages	Length: 5 ±0.5mm	NA			

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		Ensure the threads are good	Diameter: 3 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - 5 ±0.5mm				
			Allen port - 2.5 ±0.5mm				
28	M6*8 (6s connector cable)	Ensure that there is no Crack or damages	Length: 8 ±0.5mm	NA			
		Ensure the threads are good	Diameter: 6 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - 10 ±0.5mm				
			Allen port - 4 ±0.5mm				

Name & Signature with Date	Name & Signature with Date
Inspected by	**Quality engineer**

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SPRAY

S. no	PART NAME	CHECKPOINTS FOR QUALITY			QUANTITY	QC (PASS/FAIL)	REMARKS
		VISUAL	GEOMETRICAL	SPECIFICATIONS			
1	Fluid Tank 10L, Inlet & Outlet filter	Ensure every screws thrus are given with spacer	Height (with cap and outlet filter)-262 ±1mm	NA			
		Check the inlet cap and Filter is given or not and Ensure the cap is fitting correctly	Height (Without cap and outlet filter) - 240 ±1mm				
		Check the outlet cap is given with filter	Length- 450 ±1mm				
		Check whether the filter having two rubber washers or not	Width- 335 ±1mm				

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		Ensure the battery plate inserting slot and lock is given	Inner Diameter of the tank inlet -102 ±1mm				
		Check the Velcro Strap is given within the tank	Tank cap Inner diameter - 111 ±1mm				
			Tank cap Outer diameter - 120 ±1mm				
			Tank cap Thickness - 6 ±0.5mm				
			Space fort Battery plate Length - 290 ±1mm				
			Space fort Battery plate Width - 190 ±1mm				

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2	Tank screw(M5*45) & washer	Ensure no damage on the screw and screw thread	Length - 45 ±1mm	NA			
		Ensure the given rubber washer is without damage	Diameter - 5 ±1mm				
		For Aspect check, Insert Tank screws in the Tank and Connect it with Tank clamp	Head diameter -10 ±1mm				
			Allen Port - 4 ±1mm				

3	Battery Plate & Velcro	Ensure no dent or Crack on the surface	Battery Plate Length- 275 ±0.5mm	NA			
		Test the Battery plate by locking it with tank	Battery Plate Width - 180 ±0.5mm				

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		Ensure the given velcro is good	Battery Plate Thickness - 2 ±0.5mm				
			Velcro Length - 410 ±0.5mm				
			Velcro Width - 20 ±0.5mm				
4	12*8 Pneumatic T-connector	Ensure no damage or Crack on the surface	Diameter - 12 mm	NA			
		For Aspect Check, Connect the pneumatic connector to the respective tube	Diameter - 8 mm				
		Test the Pneumatic connector by Flowing the water through it	Length - 53 ±0.5mm				
			Width - 37 ±0.5mm				
5	8*6 Pneumatic T-connector	Ensure no damage or Crack on the surface	Diameter - 8 mm	NA			
		For Aspect Check, Connect the pneumatic connector to the respective tube	Diameter - 6 mm				

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		Test the Pneumatic connector by Flowing the water through it	Length - 45±0.5mm				
			Width - 30 ±0.5mm				
6	10mm L Pneumatic connector	Ensure no damage or Crack on the surface	Length - 36 ±0.5mm	NA			
		For Aspect Check, Connect the pneumatic connector to the respective tube	Width - 36 ±0.5mm				
		Test the Pneumatic connector by Flowing the water through it	Diameter - 10mm				
			Inner Diameter(metal) - 10mm				
			Outer diameter(metal) - 12mm ±0.5mm				

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7	6mm Tube	Ensure no Kink or tear on the tube	Length- 3200mm	NA			
		Test the tube by Flowing Water through it	Outer Diameter- Φ 6 ± 0.5 mm				
		For Aspect Check, Connect the tube to the respective pneumatic connector	Inner Diameter - 4 ± 0.5 mm				
			Thickness - 1 ± 0.5 mm				
8	12mm Tube	Ensure no Kink or tear on the tube	Length- 350mm	NA			
		Test the tube by Flowing Water through it	Outer Diameter- Φ 12 ± 0.5 mm				
		For Aspect Check, Connect the tube to the respective pneumatic connector	Inner Diameter - 8 ± 0.5 mm				
			Thickness - 2 ± 0.5 mm				
9	8mm Tube	Ensure no Kink or tear on the tube	Length-- 500mm	NA			
		Test the tube by Flowing Water through it	Outer Diameter- Φ 8 ± 0.5 mm				

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		For Aspect Check, Connect the tube to the respective pneumatic connector	Inner Diameter - 6 ± 0.5 mm				
			Thickness - 1 ± 0.5 mm				
10	10mm Tube	Ensure no Kink or tear on the tube	Length - 180 ±1mm	NA			
		Test the tube by Flowing Water through it	Outer Diameter- Φ 10 ± 0.5 mm				
		For Aspect Check, Connect the tube to the respective pneumatic connector	Inner Diameter - 6 ± 0.5 mm				
			Thickness - 2 ±0.5mm				
11	Hexagonal clamp	Ensure no Dent or Crack on the surface	Inner Diameter -37 ± 0.5mm	NA			
		Check whether the screws are given or not	Outer Diameter - 40 ± 0.5mm				
		For Aspect Check,Insert the respective pneumatic tube(6mm or 8mm) in the clamp holder and connect the clamp in Frame arm	Thickness - 2 ± 0.5mm				

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12	Circular clamp	Ensure no Dent or Crack on the surface	Inner Diameter=30 ± 0.5mm	NA			
		Check whether the screws are given or not	Outer Diameter - 33 ± 0.5mm				
		For Aspect Check,Insert the respective pneumatic tube(6mm or 8mm) in the clamp holder and connect the clam in Motor arm	Thickness - 2 ± 0.5mm				
		Ensure no Dent or Crack on the surface					
13	6mm Tube circle clamp holder	Ensure no Dent or Crack on the surface	Inner Diameter=20 ± 0.5mm	NA			
		Check whether the screws are given or not	Outer Diameter - 24 ± 0.5mm				
		For Aspect Check,Insert the 6mm tube in the clamp holder and connect the clam in vertical landing gear	Thickness - 2 ± 0.5mm				
14	M3*10 mm Allen Screws (Hexagonal, Big Circle &	Ensure that there is no Crack or damages	Length - 10 ±0.5mm	NA			

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	Small Circle clamps)	Ensure the threads are good	Diameter - 3 ±0.5mm				
		Ensure there is no worn out	Head outer diameter - `5 ±0.5mm				
			Allen port - 2.5 ±0.5mm				
15	5L Pressure Pump	Ensure no Dent or Crack on the surface	Length - 128 ±0.5mm	Operating voltage: 12-14S			
		Ensure that there is no damage in pump inlet and outlet port	Width - 90 ±0.5mm				
		Ensure no kink and exposure in the pump wire	Height - 66 ±0.5mm				
		Conduct Pre-Test, To check the pump working condition	Pump Inlet outer diameter - 10 ±0.5mm				
		Check whether the washers are given or not	Pump Outlet Outer diameter - 10 ±0.5mm				
16	M4*10 mm screw &	Ensure that there is no Crack or damages	Length - 10 ±0.5mm	NA			

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	washer(Pump motor)	Ensure the threads are good	Diameter - 4 ±0.5mm				

		Ensure there is no worn out	Head outer diameter - `6 ±0.5mm				
		Ensure that the washer fits to the Pump	Allen port - 2.5 ±0.5mm				
			Pump washer Inner diameter - 4 ±0.5mm				
			Pump washer height - 8 ±0.5mm				

Name & Signature with Date	**Name & Signature with Date**
Inspected by	**Quality engineer**

PROPULSION

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S. no	PART NAME	CHECKPOINTS FOR QUALITY			QUANTITY	QC (PASS/FAIL)	REMARKS
		VISUAL	GEOMETRICAL	SPECIFICATION			
1	**X6 Motor CW**	Ensure no Crack or damages on the surface	Length - 134 ±0.5mm	kv rating: 180kv			
		Ensure the screws are given	Height - 60 ±0.5mm	Orientation - Clock WIse (CW)			
		Ensure no Kink or exposure in the Signal cable and Motor wire	Width - 70 ±0.5mm				
			Motor Arm mount inner diameter - 30 ±0.5mm				
2	**X6 Motor CCW**	Ensure no Crack or damage	Length - 134 ±0.5mm	kv rating: 180kv			

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		s on the surface					
		Ensure the screws are given	Height - 60 ±0.5mm	Orientation - Counter Clock WIse (CCW)			
		Ensure no Kink or exposure in the Signal cable and Motor wire	Width - 70 ±0.5mm				
			Motor Arm mount inner diameter - 30 ±0.5mm				
3	**XT -60 Male Connectors with cap**	Ensure no damage	Breadth - 16mm	NA			
		For Aspect Check, Connect the Male connector with Dummy Female Connector	Length - 24mm				

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		Ensure connecting pins are not burnout					
		Ensure the Cap perfectly fits to the connector					
4	**Nylon Sleeve**	Ensure the Nylon sleeve is not torn	Length - 1.2m	NA			
		Ensure there is no any other damages in the sleeve					
5	**Single Flat Nozzles**	Ensure the Nozzle is completely inserted in the rubber mount	Length - 231 ±1mm	Nozzle spray type - Fl **Nozzle Bottom Plate** Er the Er cle			

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				at fan			
		Ensure There is no damage in the rubber mount & nozzle	Body outer diameter - 16 ±0.5mm				
		Check whether the nozzle filter and a rubber bush for it is given	Nozzle Tube Outer diameter - 6 ±0.5mm				

		For aspect check, try mounting it in the motor bottom side	Thickness - 8 ± 0.5mm				

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			Screw thru dia - 3 ± 0.5mm				
7	**M3*12mm Allen Screws (Nozzle)**	Ensure that there is no Crack or damages	Length - 12 ±0.5mm	NA			
		Ensure the threads are good	Diameter - 3 ±0.5mm				
		Ensure there is no worn out	Head diameter - 5 ±0.5mm				
			Allen Port - 2.5 mm				

Name & Signature with Date	Name & Signature with Date
Inspected by	**Quality engineer**

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