



ROTORWORKS MANUFACTURING LLC

TECHNICAL CAPABILITIES & QUALITY ASSURANCE

UAV PROPELLERS | COMPOSITE STRUCTURES | BUILD-TO-PRINT PRODUCTION

AS9100D-ALIGNED QMS

Third-party certification
targeted for FY2027

ENGINEERING POSITION

Product definition governs. Requirements, risk, configuration, inspection method and acceptance evidence are confirmed before commitment and controlled through final release.

TECHNICAL CAPABILITIES

PROPELLER SYSTEMS	Injection-molded small-UAV propellers beginning at approximately 3 in.; core-filled prepreg carbon-fiber systems from 10-60 in.; fixed, hinged, three and four blade configurations. Materials include glass and carbon fiber reinforced nylons, 5-40% Carbon Fiber reinforced polycarbonate and carbon/epoxy prepreg systems.
COMPOSITE STRUCTURES	In-house carbon fiber laminate plate, commonly 2-15 mm, CNC-routed into frames, arms, motor mounts, avionics decks, payload interfaces and structural panels.
INTEGRATED PRODUCTION	In-house tooling; injection and compression molding; controlled cure; CNC routing, trimming, drilling and machining; assembly, finishing, mass matching, balancing and inspection.
SCALABLE CAPACITY	Production may scale to tens of thousands of propellers per week and thousands of frames/components per week, subject to geometry, material, tooling configuration, process and program requirements.
DESIGN FOR MANUFACTURING - DFM	Collaborative DFM review before tooling release addresses geometry, draft, wall thickness, gate/ejection approach, material or laminate selection, load paths, trim and machining access, critical characteristics, inspection strategy, balance/mass matching and production volume targets. Build-to-print definition changes require customer or design authority approval before release.

TYPICAL TOLERANCE & ACCEPTANCE BASIS

CNC PROFILES & HOLES	Released drawing and geometric dimensioning and tolerancing; setup/first-off, in-process and final checks; actual results and equipment ID recorded.
MOLDED/COMPOSITE GEOMETRY	Drawing and process plan define thickness, profile, warpage, insert/feature location and surface/edge acceptance as applicable; material/lot evidence linked.
PROPELLER BALANCE & TRACK	Balance to customer product-specific criteria.
HUBS & ASSEMBLIES	Built to customer specification.

NUMERIC LIMITS RotorWorks does not apply one blanket tolerance across materially different propeller and composite families. Feature specific limits are confirmed during RFQ/contract review against process capability, gage range/resolution/accuracy, material behavior, geometry and criticality.



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EQUIPMENT | PROCESS CONTROL | OBJECTIVE EVIDENCE

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MANUFACTURING EQUIPMENT & PROCESS CAPABILITIES

INJECTION MOLDING

- Injection mold design and fabrication
- Horizontal hydraulic reciprocating-screw machines; varied clamp tonnage and shot capacity
- Fiber reinforced plastic injection molding (Carbon / Glass)
- Insert molding and over-molding
- 10,000+ Unit per month capacity

COMPOSITE MANUFACTURING

- Composite tooling design and fabrication
- Carbon Fiber plate and panel fabrication
- CNC profile cutting (Drone Frames)
- Prepreg cutting, kitting and layup
- Vacuum bagging
- Out-of-autoclave processing and cure
- Batch-oven cure and post-cure
- Compression molding (Props, Plate, Tubing)
- CNC routing, trimming, drilling and machining
- CNC molds, patterns, tooling and production jigs, trim and drill fixtures
- Surface preparation, sanding, coating, polishing and finishing

SUPPORTING MANUFACTURING

- Adaptive manufacturing and rapid prototyping
- Drone Assembly
- Dimensional inspection, quality assurance and material testing
- Production tooling and fixture fabrication
- Manufacturing process development and production support

AS9100D-ALIGNED OPERATING CONTROLS & OBJECTIVE EVIDENCE

CONTROL STAGE	OPERATING CONTROL	OBJECTIVE EVIDENCE	PRIMARY CLAUSES
Requirements & risk	Capture RFQ/PO, drawings, flow-downs and acceptance criteria; review capability, capacity, timing, critical items and risk.	Contract review, recorded risks, actions and resolved requirement conflicts.	6.1; 8.1.1; 8.2
Configuration & planning	Control released, model, drawing, BOM, specification, revision and effectivity; plan traveler, tooling, CNC programming and inspection gates.	Configuration status, approved change history, traveler and linked program and tool revisions.	7.5; 8.1.2; 8.3; 8.5.6
Source, receive & build	Use approved providers; verify certs, CoO, lot/batch, shelf life and status; record material, process, equipment and acceptance.	Receiving record, supplier and material certs, traceability chain and completed traveler.	8.1.4; 8.4; 8.5
Verify, release & improve	FAI/PPV, in-process and final verification; NCR/MRB/CAPA; authorized release; audit, KPI and supplier feedback.	AS9102 forms when invoked; inspection/test results, equipment IDs, NCR closure, CoC and release package.	7.1.5; 8.5.1.3; 8.6; 8.7; 9.1-9.3; 10.2-10.3

SUPPLIER QUALIFICATION & PROGRAM READINESS

PRIVATE QUALIFICATION PACKAGE Available after mutual NDA: QMS map; calibration; receiving/traceability; revision/traveler; change/configuration; FAI/in-process/final release; NCR/MRB/CAPA; and engineering reference aids. References: RWM-QMS-VIS-001-007 and RWM-QE-REF-008-010.

PROGRAM READINESS:

Active QMS; Lean Six Sigma; export control program (not ITAR registered); NDAA-aligned sourcing; applicable Berry Amendment and DFARS clauses.