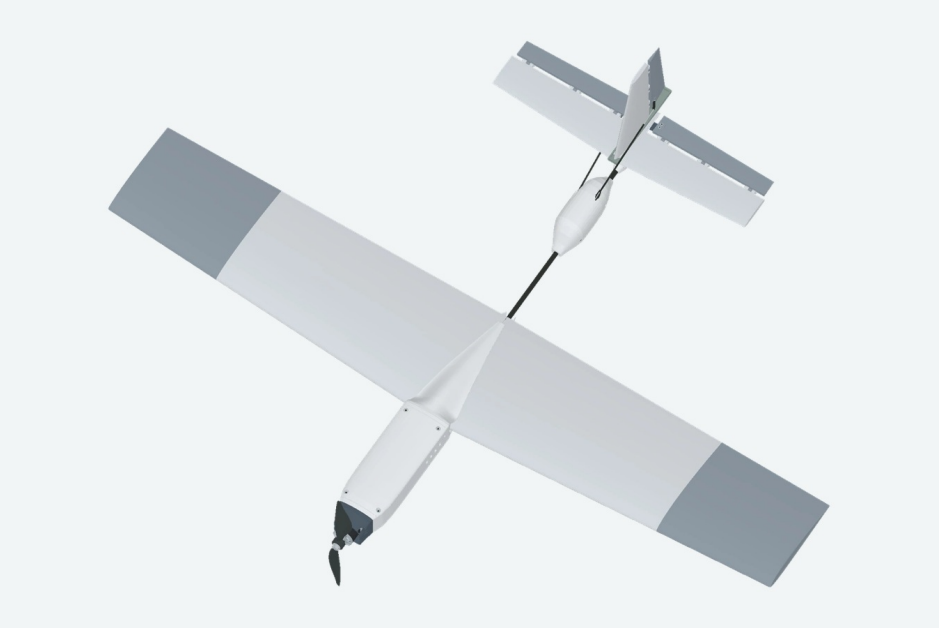
Raven-Scout RC

Build the NACA 2412 Scout with its rounded power pod, wing-root fairings and enclosed tail servos. The base wingspan is 1,000 mm before the tip caps.



Digital assembly for this revision

Open the online 3D assembly and wiring reference

In this guide

01 Overview

02 Print the revised parts on the P1S

03 Slice the inherited parts separately

04 Wing, fairings and boom

05 Nose and power pod

06 Enclosed tail controls

07 Radio and wiring

08 Ground checks

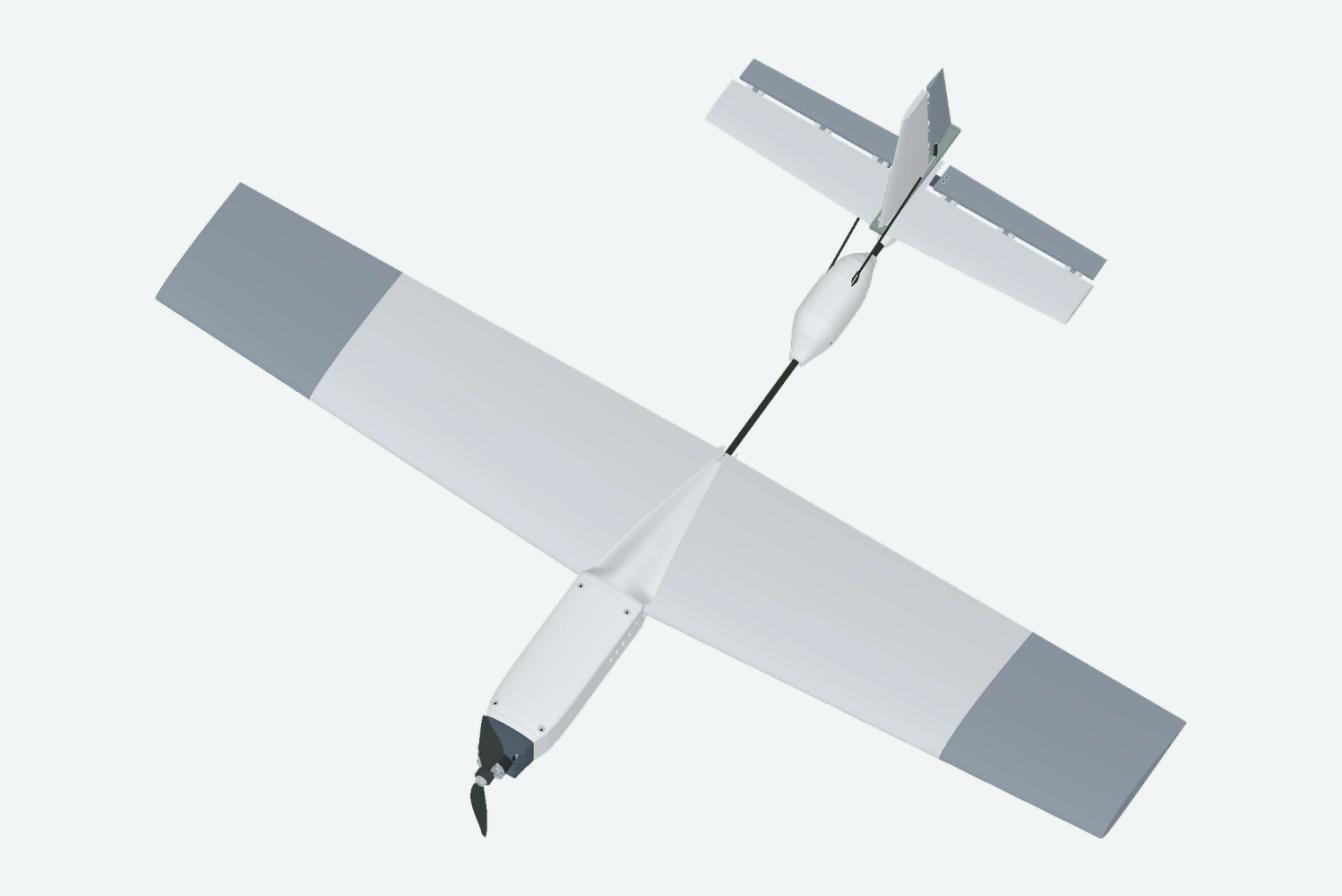
09 Print inventory

10 Bill of materials

Print setup

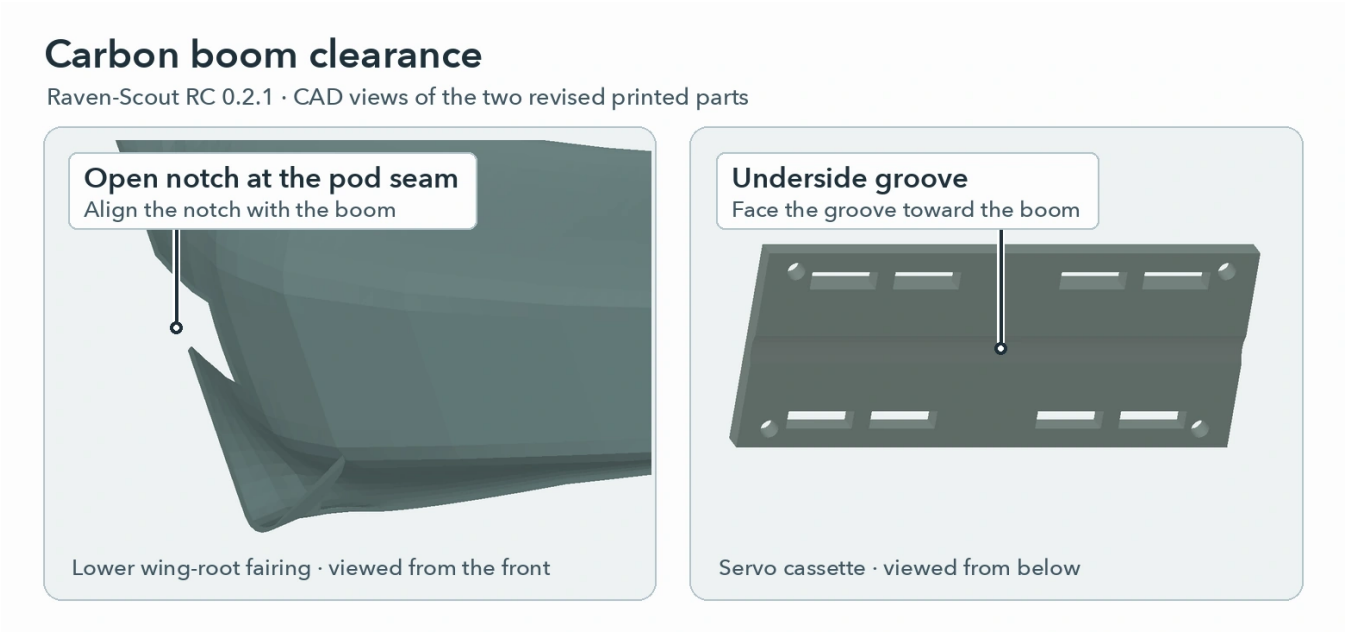
Bambu Lab P1S, 0.4 mm nozzle, 0.20 mm layers, Textured PEI. PLA Basic uses a 220 °C nozzle, 55 °C bed, two walls and a 5 mm brim. colorFabb LW-PLA uses a 240 °C nozzle, 60 °C bed, 0.50 flow, Arachne, one wall and an 8 mm brim.

01 Overview



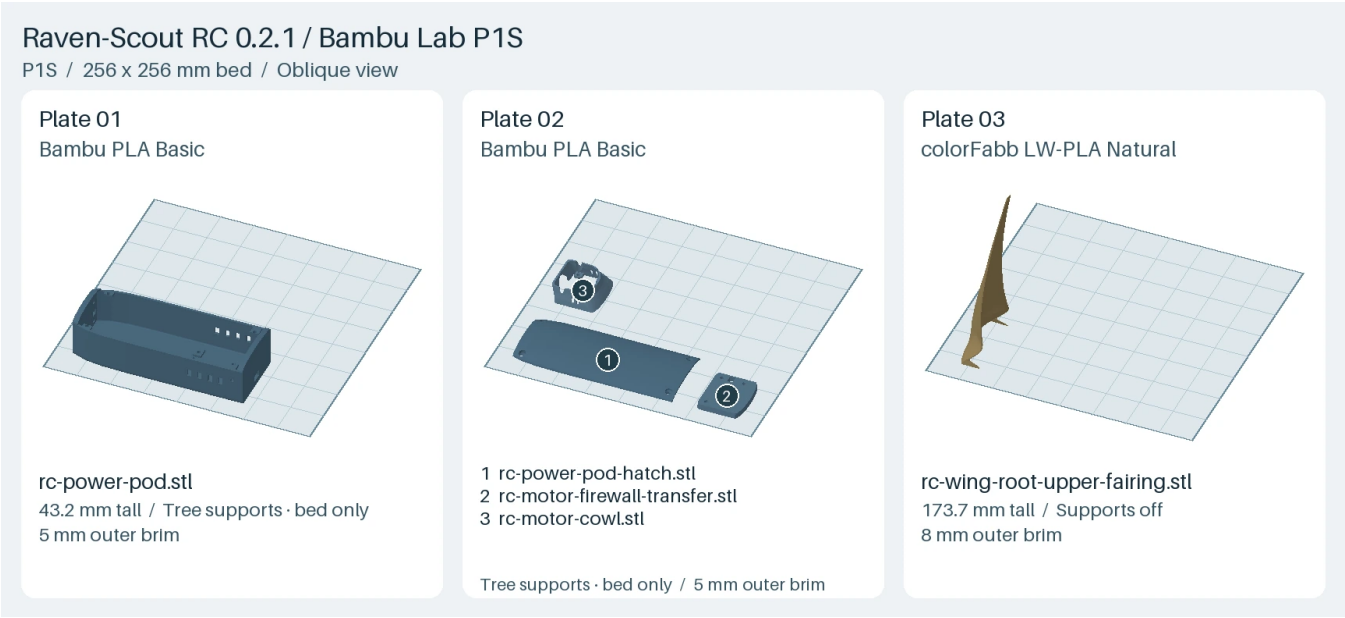
Raven-Scout RC 0.2.1 with the service covers fitted.

1. Match the parts and hardware to the 0.2.1 inventory. Use the revised lower wing-root fairing and servo cassette for this revision.
2. Print the lower wing-root fairing and servo cassette first. With the battery disconnected, dry-fit them on your nominal 6 mm boom. Check that the fairing seams close and the cassette seats fully on its mounts with the harness in place.
3. Use Separated or hide Service covers in the 3D reference to locate the battery, receiver, ESC and tail servos.
4. Remove the propeller and disconnect the battery for fitting and wiring.



The open notch in the lower wing-root fairing and the underside relief in the servo cassette clear the carbon boom.

02 Print the revised parts on the P1S



P1S plates 01-03. Nose pod, hatch, firewall, cowl and upper wing-root fairing.

1 Open the nine P1S projects for the 18 revised parts. Keep each plate’s saved material and layer settings.

2 Preview supports, brims and first-layer contact. Check that the lower wing-root fairing’s tree supports can be removed through the split seam. Inspect the printed seams, bores and mating surfaces before assembly.

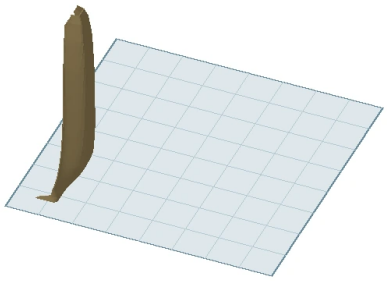
3 Use the 0.2.1 plate 04 project for the lower wing-root fairing and plate 06 for the servo cassette. Clear support material from the fairing notch before fitting the boom.

Raven-Scout RC 0.2.1 / Bambu Lab P1S

P1S / 256 x 256 mm bed / Oblique view

Plate 04

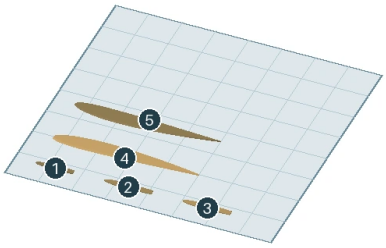
colorFabb LW-PLA Natural



rc-wing-root-lower-fairing.stl
195.7 mm tall / Tree supports · bed only
8 mm outer brim

Plate 05

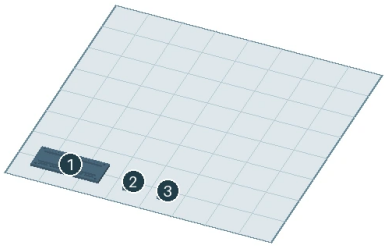
colorFabb LW-PLA Natural



1 rc-v2-fin-tip.stl
2 rc-v2-stabilizer-tip-left.stl
3 rc-v2-stabilizer-tip-right.stl
4 rc-wingtip-cap-left.stl
5 rc-wingtip-cap-right.stl
Supports off / 8 mm outer brim

Plate 06

Bambu PLA Basic



1 rc-v2-servo-cassette.stl
2 rc-v2-servo-clamp-front.stl
3 rc-v2-servo-clamp-aft.stl

Supports off / 5 mm outer brim

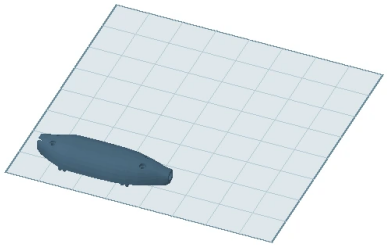
P1S plates 04-06. Lower wing-root fairing, wing and tail tip caps, servo cassette and clamps.

Raven-Scout RC 0.2.1 / Bambu Lab P1S

P1S / 256 x 256 mm bed / Oblique view

Plate 07

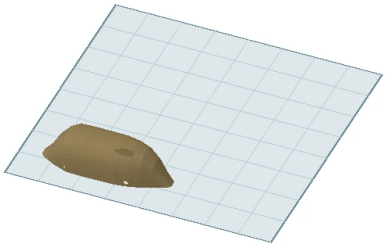
Bambu PLA Basic



rc-v2-servo-fairing-bottom.stl
22.3 mm tall / Tree supports · bed only
5 mm outer brim

Plate 08

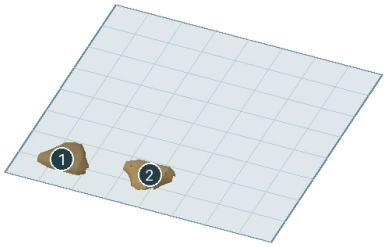
colorFabb LW-PLA Natural



rc-v2-servo-fairing-hatch.stl
34.0 mm tall / Tree supports · bed only
8 mm outer brim

Plate 09

colorFabb LW-PLA Natural

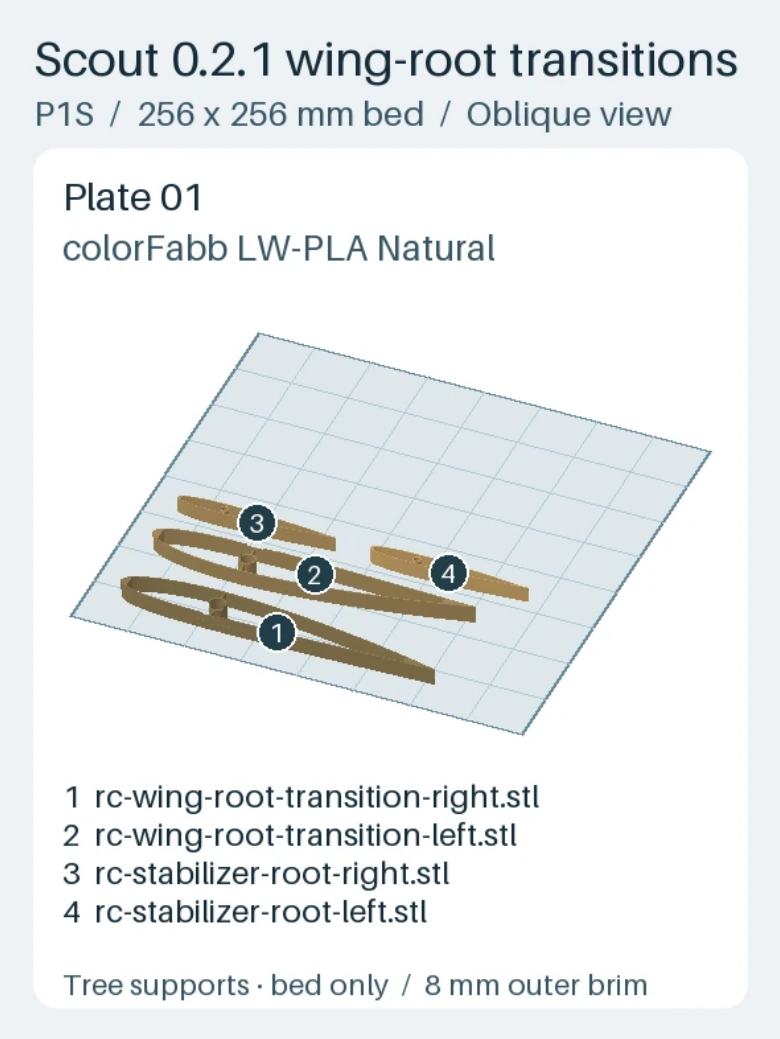


1 rc-v2-tail-saddle-left.stl
2 rc-v2-tail-saddle-right.stl

Tree supports · bed only / 8 mm outer brim

P1S plates 07-09. Lower servo fairing, servo hatch and tail saddle covers.

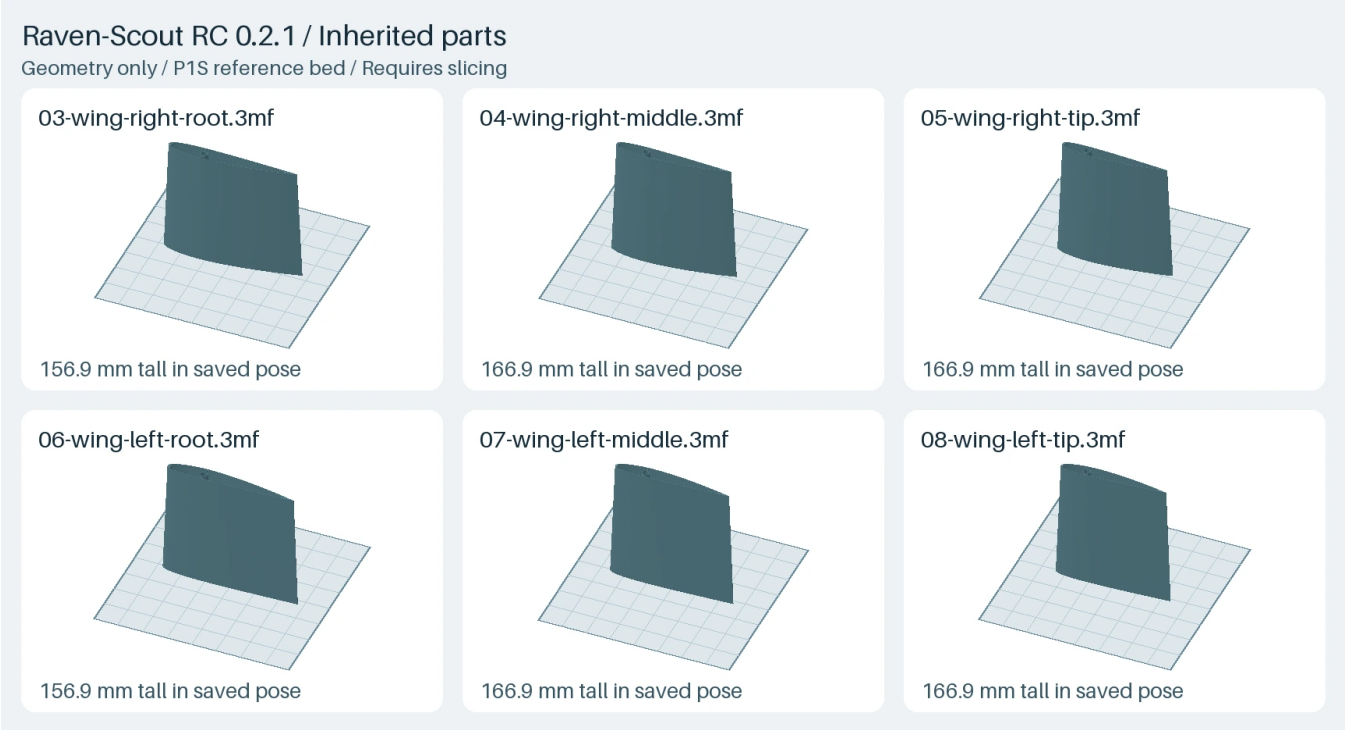
03 Slice the inherited parts separately



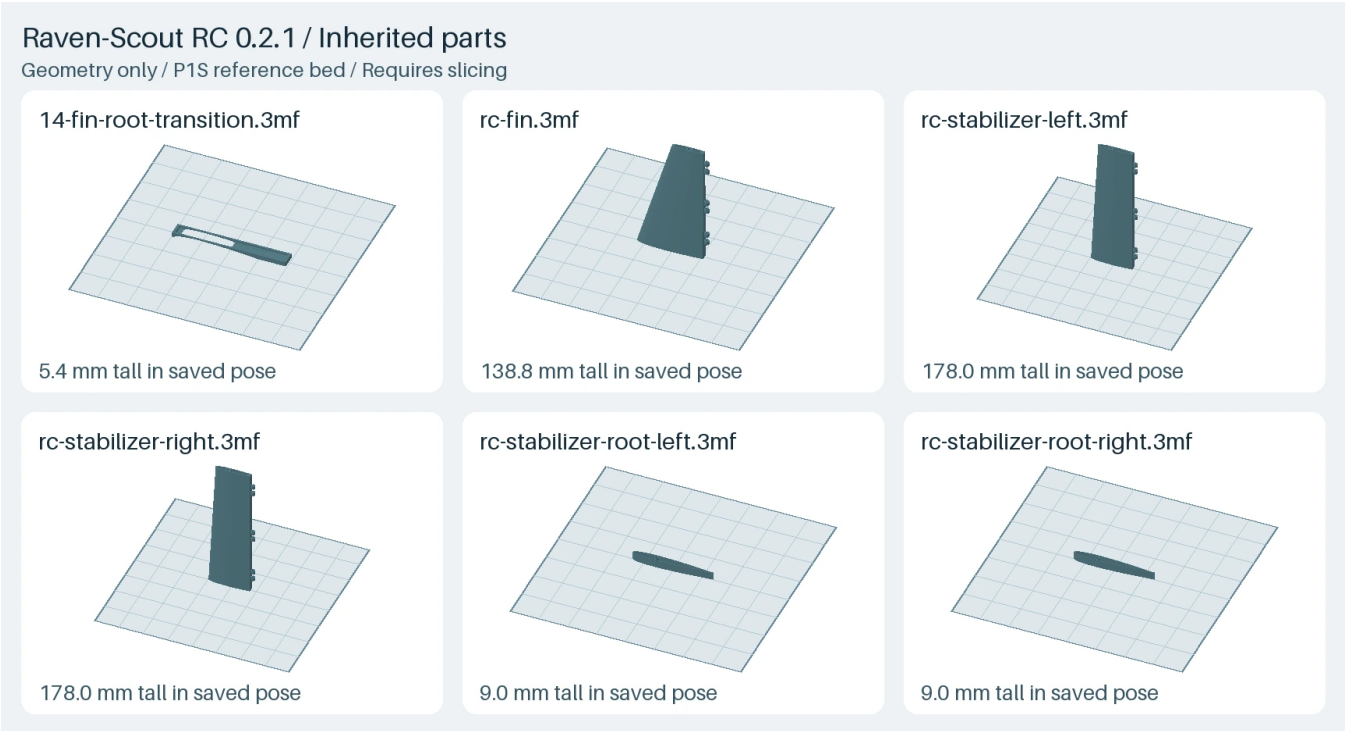
Kit edition 2 wing-roots-outboard P1S project. Both wing-root transitions sit on their uncut outboard faces. The stabilizer roots keep their original print poses.

1. Kit edition 2 places both wing-root transitions with the uncut outboard face on the bed. Keep the saved orientation.
2. Use the saved wing-roots-outboard P1S project for both wing-root transitions and both stabilizer roots, or use the individual 3MFs. For a kit edition 1 copy, rotate only the two wing-root transitions 180° around X and place their uncut outboard faces on the bed.
3. Keep the colorFabb LW-PLA profile and 8 mm outer brim. Use Tree (auto) supports with On build plate only. Leave auto-orient off when slicing.
4. The reference slice generated no support paths. In Preview, check the first layer and verify that the nominal 8 mm spar bores stay clear of the brim. Remove the brim and dry-fit the carbon tubes before bonding.
5. For other inherited parts, use the individual 3MF placements and set the material, supports and slicing settings for each part.

6 Match wing and tail parts by side and section. Preview clearance and first-layer contact before printing.



Inherited wing panels in their geometry-only 3MF orientations.

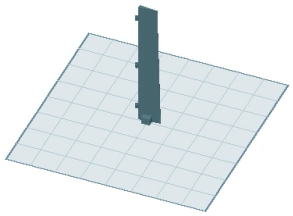


Inherited fin and stabilizer parts.

Raven-Scout RC 0.2.1 / Inherited parts

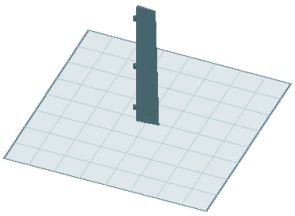
Geometry only / P1S reference bed / Requires slicing

rc-elevator-left.3mf



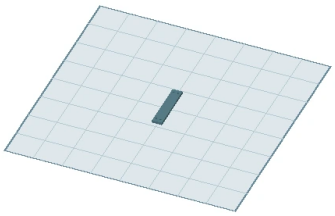
169.0 mm tall in saved pose

rc-elevator-right.3mf



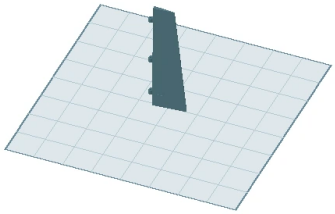
169.0 mm tall in saved pose

rc-elevator-coupler.3mf



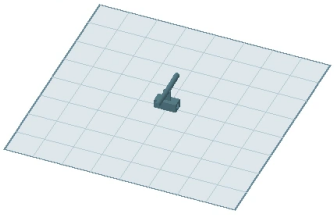
3.0 mm tall in saved pose

rc-rudder.3mf



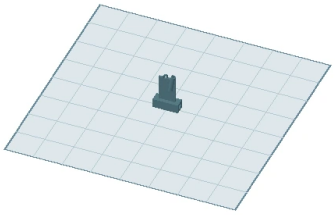
126.0 mm tall in saved pose

15-wing-boom-joiner.3mf



24.8 mm tall in saved pose

16-tail-boom-saddle.3mf



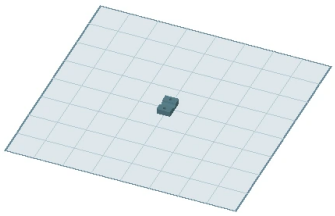
41.8 mm tall in saved pose

Inherited moving controls and boom fittings.

Raven-Scout RC 0.2.1 / Inherited parts

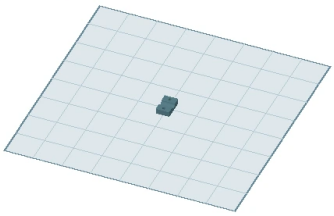
Geometry only / P1S reference bed / Requires slicing

rc-pod-boom-front-lower.3mf



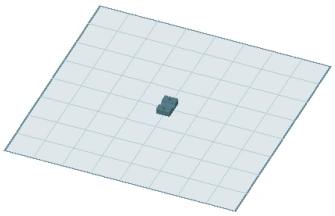
5.7 mm tall in saved pose

rc-pod-boom-front-upper.3mf



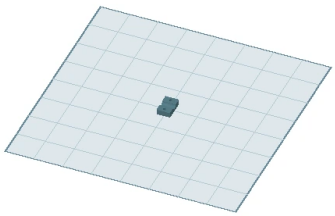
5.7 mm tall in saved pose

rc-pod-boom-aft-lower.3mf



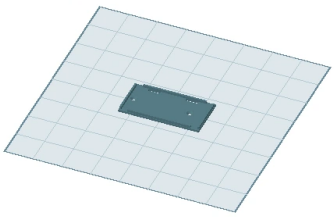
5.7 mm tall in saved pose

rc-pod-boom-aft-upper.3mf



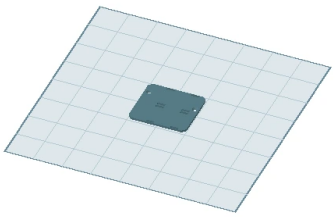
5.7 mm tall in saved pose

rc-battery-tray.3mf



5.2 mm tall in saved pose

rc-electronics-tray.3mf



2.4 mm tall in saved pose

Inherited cradle shells and equipment trays.

04 Wing, fairings and boom

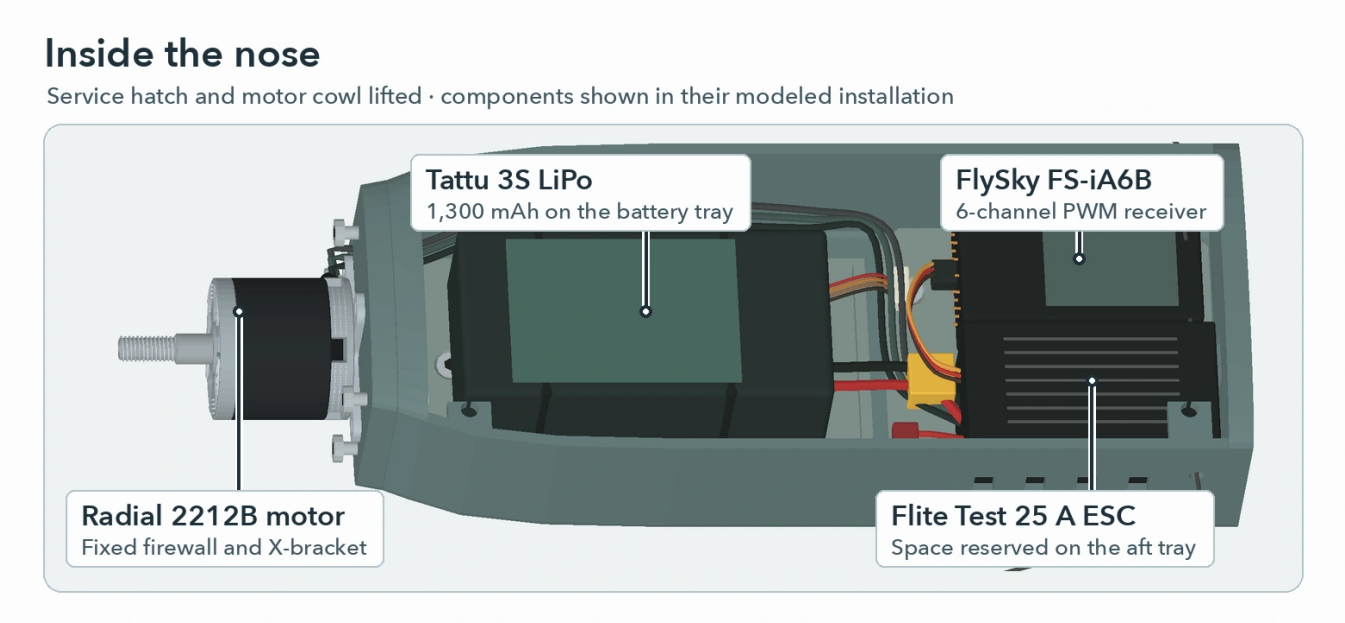
1 Check the spar openings against the carbon tubes. Dry-fit each side in order from center transition to root, middle and tip.

2 Seat the spar ends on the center joiner pins, then dry-fit the joiner on the bare boom. Keep the 0.2 mm center relief clear and check wing alignment and symmetry before bonding.

3 Seat the fairings around the root with the harness in its channel. Fit the lower fairing from below and check that the notch clears the boom without loading the spars or pinching the harness.

4 Dry-fit the matching tip caps. Use removable seam tabs for bench fitting. Test adhesive on the printed skin before bonding and keep it out of the wing passages.

05 Nose and power pod



Motor, Tattu 3S pack, FS-iA6B receiver and ESC envelope with the hatch and cowl lifted.

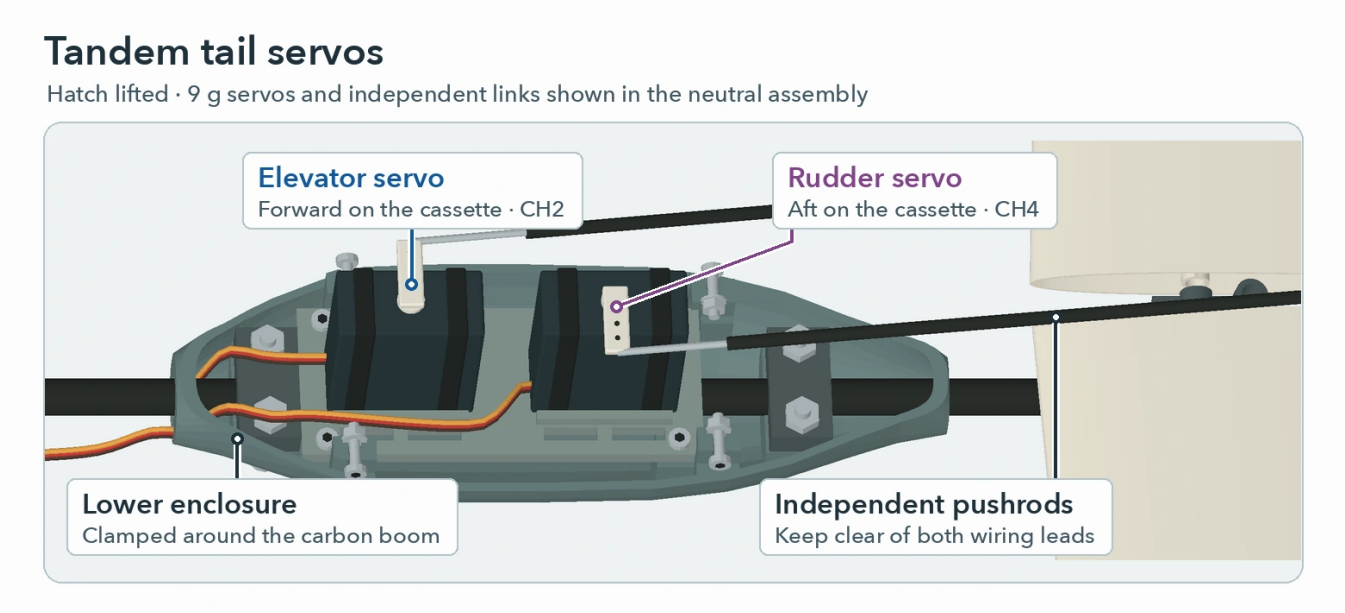
1 Dry-fit the front and aft cradles around the boom. Leave the tube undrilled. Check screw, nut and tool access and verify that the cradles hold without crushing the tube.

2 Fasten the firewall through its carrier holes. Transfer the actual motor bracket pattern before drilling, and check screw engagement and winding clearance.

3 Place the battery and electronics in their trays. Fit the pack restraints and leave room for cooling, connector bends and disconnection. Seat the hatch and check that the screws sit flush and the leads stay clear.

4 Dry-fit the cowl with the propeller removed. Check the motor bell, shaft, hub and adapter for clearance, and protect the leads from rubbing.

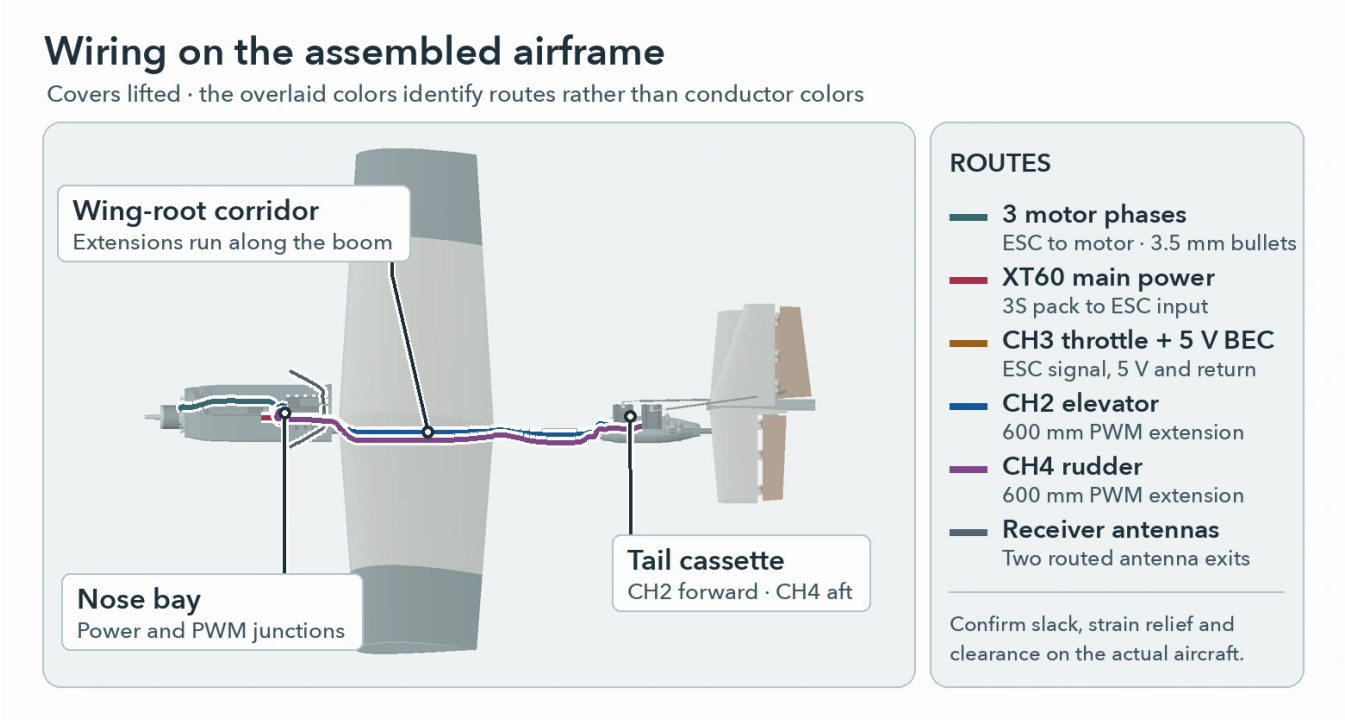
06 Enclosed tail controls



The forward elevator and aft rudder servos share a cassette. Each has its own lead and pushrod.

1. Slide the lower servo enclosure onto the bare boom before installing the tail saddle. Fit both clamp caps. Check that the relief under the cassette clears the boom and the cassette sits fully on its mounting pads. Then center and secure both servos.
2. Dry-fit both stabilizer roots, the outer stabilizers and the fin on their rods. Leave the 6 mm gap at the saddle. Measure where the rod ends sit flush before fitting the caps.
3. Measure the hinge stacks and keeper space before cutting and deburring the 9 nominal 2 × 17.5 mm steel pins. Fit positive keepers at both ends. For the 4 coupler fasteners, check the grip and clearance of M2 × 18 mm screws on your print before fastening.
4. Transfer the delivered horn patterns to their pads. Route the guided pushrods through the aft openings, fit the cover and connect the horns. Sweep each control and both together to check for binding.
5. To remove the cover, disconnect the battery, remove the cover screws and disconnect both pushrods at the tail. Withdraw the rods from the cover openings. Check that the front tab clears as the cover lifts. Stop if the shell binds.

07 Radio and wiring



CH2 and CH4 extensions run through the wing root and along the boom to the tail cassette. Colors identify routes.

1 With the battery disconnected, dry-fit the motor bullets through the 7 × 5 mm nose opening one at a time. Check the actual insulated connectors before fitting the cowl and firewall.

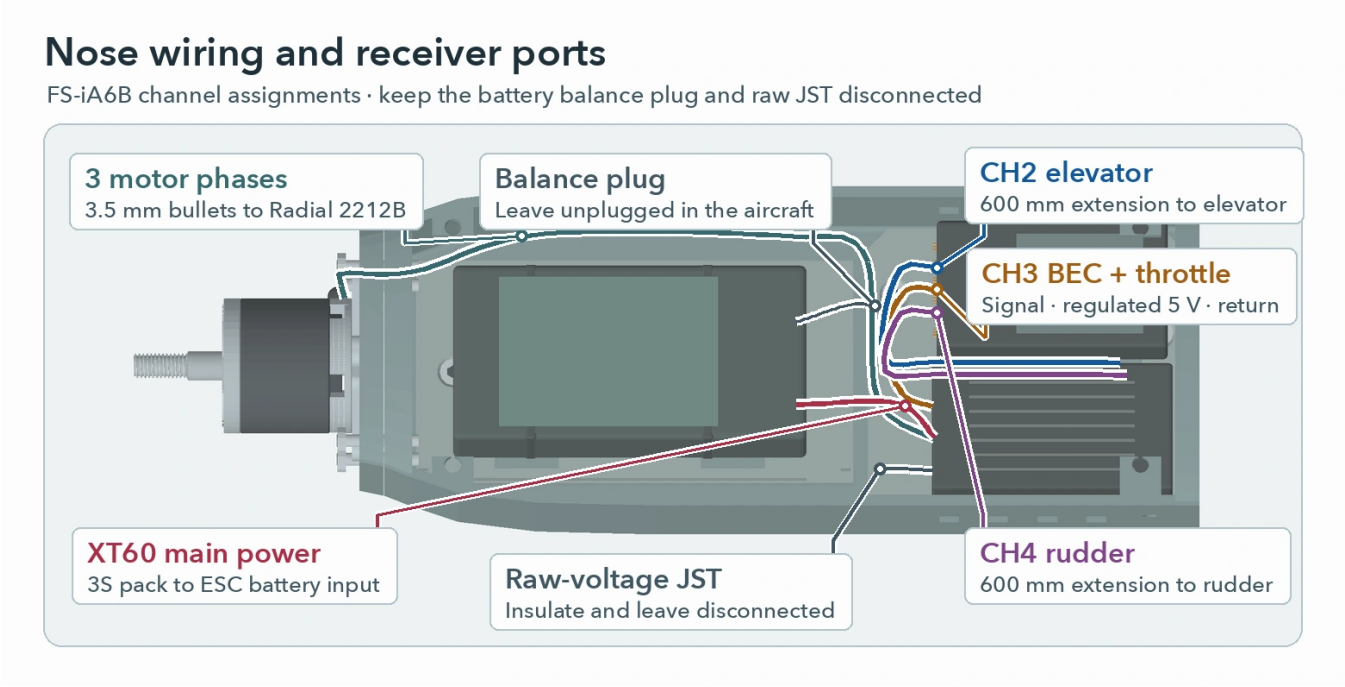
2 Before closing the fairings, try feeding the smaller receiver ends of both servo extensions noseward through the 10 × 6 mm aft pod opening. Check the actual servo leads through the 10 × 4.3 mm tail entry. Keep the extension junctions accessible outside the tail shell and secure the leads along the boom clear of clamps and pushrods. Stop if the connectors or harness cannot pass without force.

3 Match signal, positive and ground to the receiver markings. Leave the balance plug disconnected in the aircraft, insulate the red raw-battery JST and leave B/VCC free after binding.

4 Support the connectors, leave service slack and route the antennas as FlySky specifies. Check the wiring channel and antenna exits with all covers fitted.

Connection map

- 3S Tattu flight battery to FT 25 A ESC battery input. Keyed XT60 main leads.
- FT 25 A ESC motor outputs to Radial 2212B motor. Three 3.5 mm bullets.
- ESC throttle and regulated BEC lead to FS-iA6B CH3. Three-wire PWM signal, regulated 5 V and return.
- Elevator servo to FS-iA6B CH2. Independent 600 mm straight-through three-wire PWM extension.
- Rudder servo to FS-iA6B CH4. Independent 600 mm straight-through three-wire PWM extension.
- FlySky FS-i6X to FlySky FS-iA6B. AFHDS 2A, fixed-wing Mode 2.



Power and PWM leads at their modeled connector positions.

08 Ground checks

1. With the propeller removed, bind the radio and program CH3 failsafe to the verified motor-off position. Check throttle cut and loss of signal separately. Verify motor rotation against the propeller markings. Confirm commanded up raises the elevator trailing edge and commanded right moves the rudder right as viewed from behind. Range-test the installed receiver and antennas with the covers fitted.
2. Move both servos together with the covers fitted. Check linkage clearance and measure the receiver rail and both servo voltages under load against their device limits.
3. Obtain documented current and temperature limits for the delivered motor before fitting the propeller for any powered test. With the battery disconnected, check propeller orientation, seating, retention and full sweep. Have an experienced reviewer assess a restrained power check and record voltage, current, temperatures, vibration and mount movement.
4. Before flight, verify the ESC’s 3S low-voltage behavior or establish a separate pack-voltage monitoring method against the battery maker’s discharge limits. The receiver reports its regulated 5 V supply, so use the flight pack voltage for this check.
5. Record all-up mass and balance with the flight battery installed. Establish a reviewed center-of-gravity range and control throws for this build before a flight trial.

Print inventory

Part	STL file	Qty	Material
Wing root transition right	rc-wing-root-transition-right.stl	1	LW-PLA
Wing root transition left	rc-wing-root-transition-left.stl	1	LW-PLA
Wing right root	03-wing-right-root.stl	1	LW-PLA
Wing right middle	04-wing-right-middle.stl	1	LW-PLA
Wing right tip	05-wing-right-tip.stl	1	LW-PLA
Wing left root	06-wing-left-root.stl	1	LW-PLA
Wing left middle	07-wing-left-middle.stl	1	LW-PLA
Wing left tip	08-wing-left-tip.stl	1	LW-PLA
Fin root transition	14-fin-root-transition.stl	1	PLA
Wing boom joiner	15-wing-boom-joiner.stl	1	PLA
Tail boom saddle	16-tail-boom-saddle.stl	1	PLA
Stabilizer root right	rc-stabilizer-root-right.stl	1	LW-PLA
Stabilizer root left	rc-stabilizer-root-left.stl	1	LW-PLA
Stabilizer right	rc-stabilizer-right.stl	1	LW-PLA
Stabilizer left	rc-stabilizer-left.stl	1	LW-PLA
Elevator right	rc-elevator-right.stl	1	LW-PLA
Elevator left	rc-elevator-left.stl	1	LW-PLA
Elevator coupler	rc-elevator-coupler.stl	1	PLA
Fin	rc-fin.stl	1	LW-PLA
Rudder	rc-rudder.stl	1	LW-PLA
Power pod	rc-power-pod.stl	1	PLA
Motor firewall transfer	rc-motor-firewall-transfer.stl	1	PLA
Power pod hatch	rc-power-pod-hatch.stl	1	PLA
Motor cowl	rc-motor-cowl.stl	1	PLA
Battery tray	rc-battery-tray.stl	1	PLA

Part	STL file	Qty	Material
Electronics tray	rc-electronics-tray.stl	1	PLA
Pod boom front upper	rc-pod-boom-front-upper.stl	1	PLA
Pod boom front lower	rc-pod-boom-front-lower.stl	1	PLA
Pod boom aft upper	rc-pod-boom-aft-upper.stl	1	PLA
Pod boom aft lower	rc-pod-boom-aft-lower.stl	1	PLA
Wing root upper fairing	rc-wing-root-upper-fairing.stl	1	LW-PLA
Wing root lower fairing	rc-wing-root-lower-fairing.stl	1	LW-PLA
Wingtip cap right	rc-wingtip-cap-right.stl	1	LW-PLA
Wingtip cap left	rc-wingtip-cap-left.stl	1	LW-PLA
Servo fairing bottom	rc-v2-servo-fairing-bottom.stl	1	PLA
Servo fairing hatch	rc-v2-servo-fairing-hatch.stl	1	LW-PLA
Servo cassette	rc-v2-servo-cassette.stl	1	PLA
Servo clamp front	rc-v2-servo-clamp-front.stl	1	PLA
Servo clamp aft	rc-v2-servo-clamp-aft.stl	1	PLA
Tail saddle left	rc-v2-tail-saddle-left.stl	1	LW-PLA
Tail saddle right	rc-v2-tail-saddle-right.stl	1	LW-PLA
Stabilizer tip left	rc-v2-stabilizer-tip-left.stl	1	LW-PLA
Stabilizer tip right	rc-v2-stabilizer-tip-right.stl	1	LW-PLA
Fin tip	rc-v2-fin-tip.stl	1	LW-PLA

Bill of materials

Propulsion

Item	Qty	Specification
Flite Test Radial 2212B 1050 kV v.2	1 motor	Nose-mounted tractor motor. Flite Test specifies 3-4S, 3.5 mm bullets and a Ø27.5 × 26.5 mm case without the shaft. Measure the delivered mount face, bolt pattern and screw depth before drilling. Check the motor variant if buying Power Pack B Radial v.2. Obtain the exact motor current and temperature limits before testing with a propeller. Order
Flite Test 25 A ESC with XT60 and 3.5 mm bullets	1 ESC	Drives the brushless motor and powers the receiver and both servos. Flite Test specifies 3-4S LiPo, BLHeli_S, 25 A continuous and a 5 V / 5 A BEC. Use the three-wire lead for regulated receiver power and insulate the unused red JST, which carries raw pack voltage. Confirm low-voltage behavior on the delivered ESC before relying on it. Power Pack B Radial v.2 lists the XT60/3.5 mm version. Order
HQ 9×4.5 Standard CCW propeller	1 propeller	Tractor propeller with a 9 in diameter, 4.5 in nominal pitch and standard CCW rotation. With the battery disconnected, confirm the delivered hub bore, adapter seating, thread engagement and complete sweep clearance. The standalone listing contains two. Power Pack B lists two 9×4.5 propellers without an exact propeller SKU. Part reference FT4018510201. Order
Matched propeller adapter and retainer	1 set	Seat and retain the commercial propeller. Match the supplied adapter, washer and positive retainer to the actual motor shaft and propeller hub. Motor listing states an M5 adapter thread. Confirm the actual parts, stack and retention before operating. Match the adapter, washer and retainer to the delivered motor and propeller hub. Check the adapter supplied with the motor and the delivered hub before buying separate hardware.
Tattu 1300 mAh 3S 45C XT60	1 pack	One standard 3S1P LiPo powers propulsion and the regulated radio rail. The pack is rated 11.1 V nominal and uses XT60 main and JST-XH family balance connectors. CAD uses the larger published 72 × 36 × 23 mm case envelope. Tattu's detailed table lists 35 mm nominal width. Measure and weigh the delivered pack and check strap and cable clearance. Part reference TAA13003S45X6. Order

Radio and controls

Item	Qty	Specification
FlySky FS-i6X Mode 2 aircraft transmitter	1 reusable transmitter	Send independent throttle, elevator and rudder commands. AFHDS 2A airplane setup, Mode 2. Confirm receiver binding, throttle cut, channel assignment and the documented ground check. No tail mix or aileron outputs in this layout. Part reference FS-i6X. The link selects the Mode 2 transmitter by itself. The FS-iA6B receiver is listed separately. Order / Reference
Energizer MAX AA alkaline transmitter cells	4 1.5 V AA cells	Power the ground transmitter. Use a matched fresh set of four 1.5 V AA cells in the transmitter's holder. Verify polarity and transmitter voltage before testing. Part reference E91. Order / Reference
FlySky FS-iA6B receiver	1 receiver	Deliver PWM to the ESC and both tail servos. AFHDS 2A, six PWM channels, 4.0-8.4 V supply, 47 × 26.2 × 15 mm case with dual 150 mm antenna leads. Allow lead exit and bind access and verify range in the final carbon/printed installation. Part reference FS-iA6B. Order / Reference
Flite Test 9G Analog Servo v.2	2 servos	Drive elevator and rudder independently. 4.8-6 V analog servos with 23.7 × 11.8 × 28 mm published dimensions. Verify ear spacing, output-axis position, arm and screw retention and unloaded and loaded movement. Power Pack B lists four 9 g servos. Install two of the exact v.2 model. Order
Servo arms, arm screws and body mounting hardware	2 servo hardware sets	Attach each servo and retain its output arm. Confirm the arms and screws match the delivered servo spline. Resolve the case's actual mounting hardware and test retention and removal access together with the separately listed straps. Choose the arm and mounting hardware after checking the delivered spline, screws and case.
Pololu 24 in / 600 mm twisted servo extension	2 extensions	One 600 mm three-wire 22 AWG extension per servo. The displayed routes are about 437 mm to the elevator servo and 471 mm to the rudder servo, before service slack. Dry-fit each JR receiver end through the aft pod opening and check the delivered servo plug through the tail entry. Confirm connector fit, bend clearance, restraint, polarity and voltage at both servos under simultaneous load. Part reference 2168. The distributor link is for Pololu #2168. Order / Reference

Item	Qty	Specification
DU-BRO Mini-NY guided pushrod kit	2 guided linkages	Connect each servo to its tail control horn. 20 in long, 0.047 in diameter wire blanks with sleeves, threaded couplers and Mini Nylon Kwik-Links. Determine actual installed lengths and support locations. Confirm clevis/horn fit, retained closure and no buckling or binding. One #113 pack contains two wires, two sleeves and the four linkage ends. Part reference 113. The link selects #113, the two-linkage pack. Order / Reference
DU-BRO 1/2A nylon control horns	2 horns	Attach the elevator and rudder pushrods to the moving surfaces. One horn and nut plate per surface, using two included 2-56 × 3/8 in screws per horn. Transfer the measured hole pattern to the reinforced pad after checking the selected clevis and hinge alignment. Part reference 107. Order
2 mm smooth stainless hinge pin stock	9 pin cuts	Pin three hinges on each elevator half and three on the rudder. Cut from nominal 2 mm 316/316L stainless rod. The CAD hinge stack is 14.5 mm and the provisional pin cut is 17.5 mm. Verify the keeper requirements on a measured print before cutting, then deburr and check free movement. One 1 ft rod provides stock for all nine cuts. Part reference 1335T22. Order McMaster part 1335T22. Confirm delivery on the product page. Order / Reference
Positive hinge pin end retention	9 keeper sets	Prevent axial migration of each pin. Select and qualify the exact end retention after checking the printed hinge stack and clearance. A friction fit by itself is insufficient. Verify positive retention and clearance on the measured hinge stack.
M2 elevator coupler hardware	4 fastener sets	Join both elevator halves to the center coupler. Check an M2 × 18 mm cap screw against the 14.2 mm CAD grip stack and your printed parts. Use matching M2 × 0.4 nuts and washers, two sets per side. Verify the 3.8 mm head clears, and measure grip, retained thread engagement and free travel past the fin. Part reference SSC-M2-18-A2 (screw). Verify the actual grip, head clearance and nut engagement. Select and source the matching nuts and washers after checking the measured fit. Order M2 × 18 mm screws / Reference

Fasteners, retention and consumables

Item	Qty	Specification
Motor-to-firewall attachment hardware	1 hardware set	Transfer motor loads through the fixed motor base to the firewall. Match fastener diameter, spacing, screw length and engagement to the actual motor and reviewed plate. Verify screw ends clear the windings and the mount retains the motor under vibration. Measure the actual motor bracket and firewall before choosing the screws.
M3 motor cowl and firewall carrier hardware	4 bolt, washer and locknut sets	Four through-bolts pass the cowl seats and transfer firewall. Use matching washers and locknuts. Measure the grip stack and verify tool access and retention with the propeller removed. Choose bolt length after measuring the cowl and firewall grip stack. Reference
M3 front and rear pod cradle hardware	4 bolt, washer and locknut sets	Close the two split cradles on the source boom. Two M3 × 0.5 through-bolts per cradle, flat washers and DU-BRO 2101 M3 locknuts. Select length from the measured stack. Check cradle contact and retention without drilling or crushing the carbon tube. Select any conforming shim after dry fit. Choose bolt length and any shim after dry-fitting the cradles to the delivered tube. The link is for the DU-BRO #2101 locknuts. Select bolts and washers after measuring the cradles. Order DU-BRO #2101 locknuts / Reference
M3 flat-head battery tray fasteners	2 fastener sets	Attach the battery tray with flush heads beneath the battery. Select M3 × 0.5 countersunk fasteners after measuring the actual seat and grip. Verify the head seats flush without abrading the battery and clears the retaining straps. Choose screw length after measuring the actual seat and grip. Reference
M3 flat-head electronics tray fasteners	2 fastener sets	Attach the removable electronics tray to the pod. Select two M3 × 0.5 countersunk fasteners after measuring the tray seats and stack. Verify the heads seat flush and the installed ends clear the ESC, receiver and wiring. Choose screw length after measuring the actual seat and grip. Reference
M3 flat-head nose hatch hardware	4 fastener sets	Four countersunk M3 through screws with matching locknuts. Confirm the delivered head fits the recessed crown and measure grip before selecting length. Choose screw length after checking the delivered head and recess. Reference

Item	Qty	Specification
M3 tail enclosure boom clamp hardware	4 fastener sets	Four M3 through-fastener sets retain the two separate clamp caps under the servo enclosure. Choose lengths from the measured stack and check clearance, compression and boom retention. Choose screw length after measuring the enclosure clamp stack. Reference
8 mm-class removable servo straps	4 straps	Retain the two tandem servo cases in the removable cassette. Measure strap thickness and verify room for the arms and leads under the hatch. Check strap thickness, plug access and full arm travel with the cover fitted.
Padded battery strap and positive stop	2 removable straps plus end pads	Restrain the battery at the reviewed position through handling and expected loads. Use straps up to 12 mm wide and select the length from the actual pack and tray. Qualify end pads, positive stop and strap anchors. Keep the pack accessible for disconnection. Size the straps and qualify the stop and pads on the delivered pack.
ESC and receiver retainers, insulation and strain relief	1 retention set	Hold electronics and route wiring clear of the propeller, joints and moving linkages. Retain the ESC and receiver separately with 8 mm-class removable ties and fitted insulating padding. Secure lead junctions, insulate the unused raw-voltage JST and preserve ESC airflow and receiver antenna clearance. Size the ties, pads and insulation on the delivered ESC, receiver and leads.
Bob Smith Industries Slow-Cure 30 Minute Epoxy	1 resin and hardener set	Test the epoxy on representative joints before using it on the airframe. Use samples of the actual filament, carbon finish and firewall stock. Follow the maker's cure and protective equipment instructions. Keep epoxy away from hinges, fastener access and the motor. Part reference BSI-205. Order / Reference
Servo cassette and hatch screws	8 × M2 × 8 mm screws and matching nuts	Four cassette and four hatch fasteners. Match the measured grip, pocket, tool access and positive retention. Confirm clearance to the linkage sweep. Part reference SSCF-M2-8-A4 (screw). Verify grip, retention and linkage clearance. Select the matching nuts after checking the pocket and grip. Order M2 × 8 mm screws / Reference
Tail saddle shell fasteners	2 × M2 × 12 mm screws and matching nuts	Verify delivered screw heads, washers, accessible grip and positive retention. Keep both saddle covers clear of the boom, spar and moving tail. Part reference SSCF-M2-12-A4 (screw). Verify the head, washer stack and clearance. Select the matching nuts and washers after checking grip and access. Order M2 × 12 mm screws / Reference

Item	Qty	Specification
Removable seam tabs and fit shims	1 bench supply set	Coupon-test low-profile removable tape on the actual LW-PLA. Use exterior seam tabs to dry-fit the wing fairings and tip caps. Qualify any pad or adhesive and all retained seams before operation. Coupon-test removable tape and verify the delivered shim thickness.

Ground and test equipment

Item	Qty	Specification
SkyRC B6ACneo AC/DC balance charger	1 reusable charger set	Balance-charge the disconnected 3S flight battery using the region-correct 100-240 V AC cord and both the main and balance connections. The charger package lists the AC cord as its only cable. Check direct XT60 and JST-XH balance reach. Obtain a compatible charge lead or balance adapter separately if needed. Follow both manuals for standard LiPo Balance CHG, polarity, cell count and charge limits. Part reference SK-100200. The linked SK-100200-02 is the US plug version. Order / Reference
Dynamite LiPo charge protection bag	1 reusable bag	Contain the disconnected pack during supervised charging. Use on a noncombustible surface and follow the battery maker's charging and storage instructions. Check lead exit and keep the charging setup attended. Part reference DYN1405. Dynamite lists DYN1405 as discontinued. Verify retailer availability before ordering. Order / Reference
Power, geometry and mass measurement equipment	1 reusable measurement set	Measure installation and loaded operation before any flight trial. Use a suitable inline DC power meter with matching XT60 connections, a multimeter, temperature probe, calipers, gram scale, balance fixture and control-travel gauge. Check the meter and lead ratings for the full test range. Choose rated meters and fixtures for the planned checks.
Restrained test fixture and protective equipment	1 reusable safety set	Keep the assembled aircraft restrained during reviewed propulsion checks. Use a stable fixture, suitable eye protection and clear separation from the propeller sweep. Use the adhesive maker's gloves and eye protection for bonding. Begin all radio checks with the propeller removed. Choose and qualify a stable restrained fixture and appropriate eye protection.

Airframe stock and filament

Item	Qty	Specification
Pultruded carbon wing spar tube	2 × 490 mm cuts from one tube	Measure, deburr and dry-fit at each corrected root transition. The 490 mm modeled lengths are derived from the retained 1 m geometry and its 10 mm root transitions. Part reference CF-TUBE-8MM-6MM-1000MM. Order
Pultruded carbon tail boom	1 × 560 mm cut	Measure OD and wall. Check clamp rotation, slip and local crushing without compromising the tube. Part reference CF-TUBE-6MM-4MM-1000MM. Order
Pultruded carbon stabilizer rod	1 × 380 mm cut from shared stock	Check alignment across the fixed stabilizer, root transitions and saddle. Part reference Carbon Fiber Rod 3mm x 1000mm. Order
Pultruded carbon fin rod	1 × 160 mm cut from shared stock	Dry-fit the fin rod and verify it seats within the saddle and fixed fin. Part reference Carbon Fiber Rod 3mm x 1000mm. This cut uses the same 1 m rod stock as the stabilizer. Order
colorFabb LW-PLA Natural, 1.75 mm	1 spool	Use for the parts listed as LW-PLA. Qualify foaming flow, seam adhesion, stiffness and the exact printer process on coupons. Part reference 030011. The link selects 1.75 mm Natural in the 750 g spool. Order / Reference
Bambu PLA Basic Black, 1.75 mm	1 spool	Use for the parts listed as PLA. Review heat and structural suitability at the firewall, pod, clamps, coupler and hinges before operation. Part reference 10101 color code. The link selects Black (10101), 1 kg with spool. Order / Reference

Printed parts · LW-PLA

Item	Qty	Specification
Wing root transition right	1	LW-PLA. 179.9 × 21.7 × 10.0 mm in the supplied print pose. STL filename rc-wing-root-transition-right.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing root transition left	1	LW-PLA. 179.9 × 21.7 × 10.0 mm in the supplied print pose. STL filename rc-wing-root-transition-left.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing right root	1	LW-PLA. 179.1 × 21.6 × 156.9 mm in the supplied print pose. STL filename 03-wing-right-root.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing right middle	1	LW-PLA. 166.6 × 20.0 × 166.9 mm in the supplied print pose. STL filename 04-wing-right-middle.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing right tip	1	LW-PLA. 153.3 × 18.5 × 166.9 mm in the supplied print pose. STL filename 05-wing-right-tip.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing left root	1	LW-PLA. 179.1 × 21.6 × 156.9 mm in the supplied print pose. STL filename 06-wing-left-root.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing left middle	1	LW-PLA. 166.6 × 20.0 × 166.9 mm in the supplied print pose. STL filename 07-wing-left-middle.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing left tip	1	LW-PLA. 153.3 × 18.5 × 166.9 mm in the supplied print pose. STL filename 08-wing-left-tip.stl. Inherited part. Geometry export is supplied for a separate slice review.
Stabilizer root right	1	LW-PLA. 89.8 × 8.1 × 9.0 mm in the supplied print pose. STL filename rc-stabilizer-root-right.stl. Inherited part. Geometry export is supplied for a separate slice review.
Stabilizer root left	1	LW-PLA. 89.8 × 8.1 × 9.0 mm in the supplied print pose. STL filename rc-stabilizer-root-left.stl. Inherited part. Geometry export is supplied for a separate slice review.
Stabilizer right	1	LW-PLA. 60.9 × 8.0 × 178.0 mm in the supplied print pose. STL filename rc-stabilizer-right.stl. Inherited part. Geometry export is supplied for a separate slice review.
Stabilizer left	1	LW-PLA. 60.9 × 8.0 × 178.0 mm in the supplied print pose. STL filename rc-stabilizer-left.stl. Inherited part. Geometry export is supplied for a separate slice review.

Item	Qty	Specification
Elevator right	1	LW-PLA. 33.1 × 11.6 × 169.0 mm in the supplied print pose. STL filename rc-elevator-right.stl. Inherited part. Geometry export is supplied for a separate slice review.
Elevator left	1	LW-PLA. 33.1 × 11.6 × 169.0 mm in the supplied print pose. STL filename rc-elevator-left.stl. Inherited part. Geometry export is supplied for a separate slice review.
Fin	1	LW-PLA. 81.2 × 10.7 × 138.8 mm in the supplied print pose. STL filename rc-fin.stl. Inherited part. Geometry export is supplied for a separate slice review.
Rudder	1	LW-PLA. 42.3 × 6.7 × 126.0 mm in the supplied print pose. STL filename rc-rudder.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing root upper fairing	1	LW-PLA. 36.9 × 66.0 × 173.7 mm in the supplied print pose. STL filename rc-wing-root-upper-fairing.stl. Covered by the nine-plate P1S fit review.
Wing root lower fairing	1	LW-PLA. 39.5 × 66.0 × 195.7 mm in the supplied print pose. STL filename rc-wing-root-lower-fairing.stl. Use the updated lower fairing on P1S plate 04. Clear the supports from the boom notch before dry fitting.
Wingtip cap right	1	LW-PLA. 140.0 × 17.0 × 1.2 mm in the supplied print pose. STL filename rc-wingtip-cap-right.stl. Covered by the nine-plate P1S fit review.
Wingtip cap left	1	LW-PLA. 140.0 × 17.0 × 1.2 mm in the supplied print pose. STL filename rc-wingtip-cap-left.stl. Covered by the nine-plate P1S fit review.
Servo fairing hatch	1	LW-PLA. 123.7 × 42.0 × 34.0 mm in the supplied print pose. STL filename rc-v2-servo-fairing-hatch.stl. Covered by the nine-plate P1S fit review.
Tail saddle left	1	LW-PLA. 46.0 × 37.5 × 9.2 mm in the supplied print pose. STL filename rc-v2-tail-saddle-left.stl. Covered by the nine-plate P1S fit review.
Tail saddle right	1	LW-PLA. 46.0 × 37.5 × 9.2 mm in the supplied print pose. STL filename rc-v2-tail-saddle-right.stl. Covered by the nine-plate P1S fit review.
Stabilizer tip left	1	LW-PLA. 46.1 × 6.8 × 0.8 mm in the supplied print pose. STL filename rc-v2-stabilizer-tip-left.stl. Covered by the nine-plate P1S fit review.

Item	Qty	Specification
Stabilizer tip right	1	LW-PLA. 46.1 × 6.8 × 0.8 mm in the supplied print pose. STL filename rc-v2-stabilizer-tip-right.stl. Covered by the nine-plate P1S fit review.
Fin tip	1	LW-PLA. 36.1 × 5.8 × 0.8 mm in the supplied print pose. STL filename rc-v2-fin-tip.stl. Covered by the nine-plate P1S fit review.

Printed parts · PLA

Item	Qty	Specification
Fin root transition	1	PLA. 126.0 × 15.2 × 5.4 mm in the supplied print pose. STL filename 14-fin-root-transition.stl. Inherited part. Geometry export is supplied for a separate slice review.
Wing boom joiner	1	PLA. 24.0 × 54.2 × 24.8 mm in the supplied print pose. STL filename 15-wing-boom-joiner.stl. Inherited part. Geometry export is supplied for a separate slice review.
Tail boom saddle	1	PLA. 28.0 × 11.0 × 41.8 mm in the supplied print pose. STL filename 16-tail-boom-saddle.stl. Inherited part. Geometry export is supplied for a separate slice review.
Elevator coupler	1	PLA. 11.0 × 55.0 × 3.0 mm in the supplied print pose. STL filename rc-elevator-coupler.stl. Inherited part. Geometry export is supplied for a separate slice review.
Power pod	1	PLA. 166.0 × 66.0 × 43.2 mm in the supplied print pose. STL filename rc-power-pod.stl. Covered by the nine-plate P1S fit review.
Motor firewall transfer	1	PLA. 42.0 × 50.0 × 4.9 mm in the supplied print pose. STL filename rc-motor-firewall-transfer.stl. Covered by the nine-plate P1S fit review.
Power pod hatch	1	PLA. 154.8 × 65.8 × 8.3 mm in the supplied print pose. STL filename rc-power-pod-hatch.stl. Covered by the nine-plate P1S fit review.
Motor cowl	1	PLA. 45.5 × 48.0 × 15.8 mm in the supplied print pose. STL filename rc-motor-cowl.stl. Covered by the nine-plate P1S fit review.
Battery tray	1	PLA. 89.0 × 46.0 × 5.2 mm in the supplied print pose. STL filename rc-battery-tray.stl. Inherited part. Geometry export is supplied for a separate slice review.
Electronics tray	1	PLA. 64.0 × 59.0 × 2.4 mm in the supplied print pose. STL filename rc-electronics-tray.stl. Inherited part. Geometry export is supplied for a separate slice review.
Pod boom front upper	1	PLA. 15.0 × 24.0 × 5.8 mm in the supplied print pose. STL filename rc-pod-boom-front-upper.stl. Inherited part. Geometry export is supplied for a separate slice review.
Pod boom front lower	1	PLA. 15.0 × 24.0 × 5.8 mm in the supplied print pose. STL filename rc-pod-boom-front-lower.stl. Inherited part. Geometry export is supplied for a separate slice review.

Item	Qty	Specification
Pod boom aft upper	1	PLA. 15.0 × 24.0 × 5.8 mm in the supplied print pose. STL filename rc-pod-boom-aft-upper.stl. Inherited part. Geometry export is supplied for a separate slice review.
Pod boom aft lower	1	PLA. 15.0 × 24.0 × 5.8 mm in the supplied print pose. STL filename rc-pod-boom-aft-lower.stl. Inherited part. Geometry export is supplied for a separate slice review.
Servo fairing bottom	1	PLA. 125.0 × 41.1 × 22.4 mm in the supplied print pose. STL filename rc-v2-servo-fairing-bottom.stl. Covered by the nine-plate P1S fit review.
Servo cassette	1	PLA. 65.0 × 26.5 × 4.8 mm in the supplied print pose. STL filename rc-v2-servo-cassette.stl. Use the updated cassette on P1S plate 06. Check that the underside relief clears the boom and the cassette seats fully.
Servo clamp front	1	PLA. 10.0 × 20.0 × 5.0 mm in the supplied print pose. STL filename rc-v2-servo-clamp-front.stl. Covered by the nine-plate P1S fit review.
Servo clamp aft	1	PLA. 10.0 × 20.0 × 5.0 mm in the supplied print pose. STL filename rc-v2-servo-clamp-aft.stl. Covered by the nine-plate P1S fit review.