

INTRODUCTION



Congratulations on the purchase of our finest scale heli fuselage to date. This famous A119 fits Thunder Tiger Raptor 50, the light fuselage comes factory pre-painted with all necessary hardware. It is very easy to assemble and only takes you few hours of enjoyable installation to put this scale body on your helicopter. This replica A119 is just like a real thing, hovering this 119 that will definitely make you stand out on the flying field.

PRE-ASSEMBLY NOTES

Before beginning the assembly read the instructions thoroughly to give an understanding of the sequence of steps and a general awareness of the recommended assembly procedures.

By following these instructions carefully and referring to the corresponding pictures, the assembly of your model will be both enjoyable and rewarding. The result will be a well built, easy to assemble scale model, which you will be proud to display.

This A119 is designed for intermediate to advanced pilots, and this manual assumes a basic knowledge of R/C model construction.

BEFORE YOUR ASSEMBLY

1. Before you start to assemble this fuselage on your helicopter, we suggest you to first fine tune your helicopter in the air.
2. Double-check all screws, then secure and Loctite all the loose screws.
3. The instruction manual is written for Raptor 50 Titan, if user should choose to install it on other branded helicopters, we would suggest you to study the manual thoroughly and see how it installed on a Raptor 50 Titan.

Before you begin, check the entire contents of your kit against the parts list and photos to make sure that no parts are missing or damaged. This will also help you to become familiar with each component of your model. If you find that any of the parts are either missing or damaged, please contact your local Thunder Tiger authorized distributors for replacements. Neither your dealer nor Thunder Tiger authorized distributor can accept kits for return if construction has begun.

Trial fit each part before gluing it in place. Make sure you are using the correct part and that it fits well before assembling.

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AGUSTA A119 Koala

PRE-ASSEMBLY NOTES

RECOMMENDED TOOLS & MATERIALS

Adhesives:

- Instant setting Cyanoacrylate adhesive (thin CA)
- Slow setting Cyanoacrylate adhesive (thick CA)
- 5 Minute Epoxy (fast) 20~30 Minute Epoxy (slow)



You will need two types of adhesives for the A119, Epoxy and Instant (cyanoacrylate) adhesives. We recommend that you purchase both 5-minute and 30-minute epoxy to cut down on assembly time, but you can get by with only 30-minute epoxy if time is not important. You will also need a small bottle of both "Thick" and "Thin" instant CA adhesive.

ITEMS YOU MAY NEED



No. AT6078
Remote Glow Plug Extension Wire



No. 1115 - Precision Fueler Valve

R/C System:

- 6 Channel Heli radio req'd
- GYRO system req'd

Helicopter:

Raptor 50 Titan Suggested

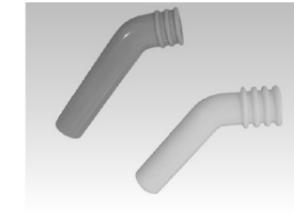
TTR4853 - Raptor 50 Titan

Tools:

- Model Knife, 1/2" MASK Tape, Small & Medium Screwdrivers, Scissors, Long nose Pliers, Drill and Drill Bits (1/16", 5/64", 1/8"), 150 Grid Sand Paper, Rat Tail and half- round file, Fine Felt Tip Pen & Soft Lead Pencil, Reamer, Hex Wrenches.



Model assembly can be much easier if the proper tools are used. Therefore, we have included in our checklist to the left, a complete listing of all the tools we used to assemble our prototype models.



No. 1114, No. 1114-Y
Exhaust Diverter, 10MM



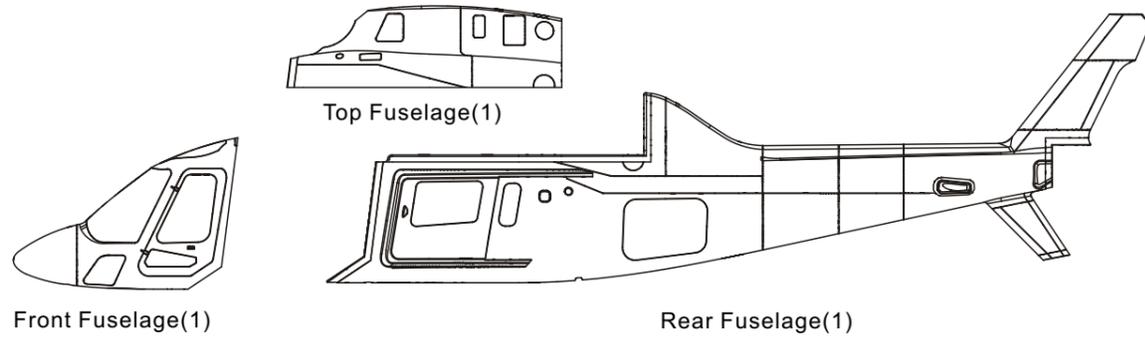
No. 2980
4-cell 3600mAh Battery



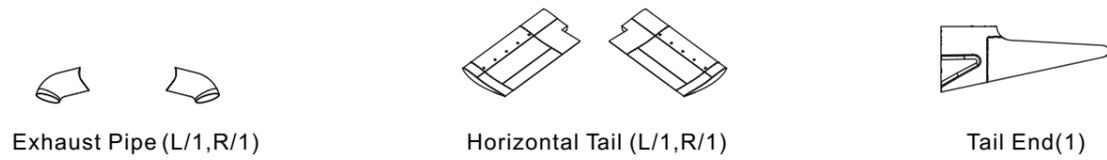
PARTS DRAWINGS



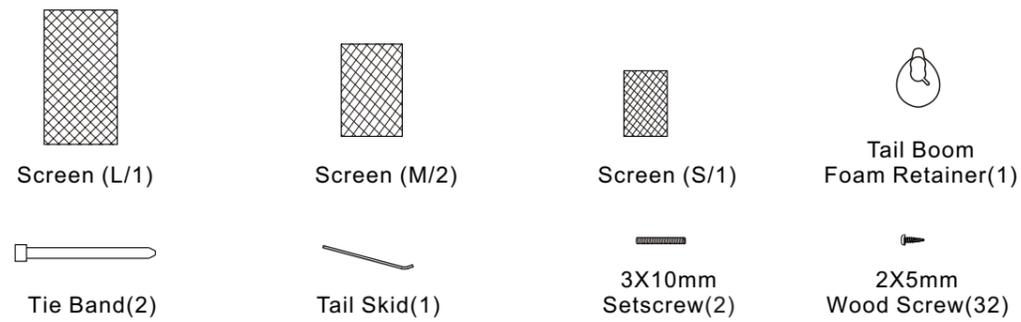
PV6057 Fuselage



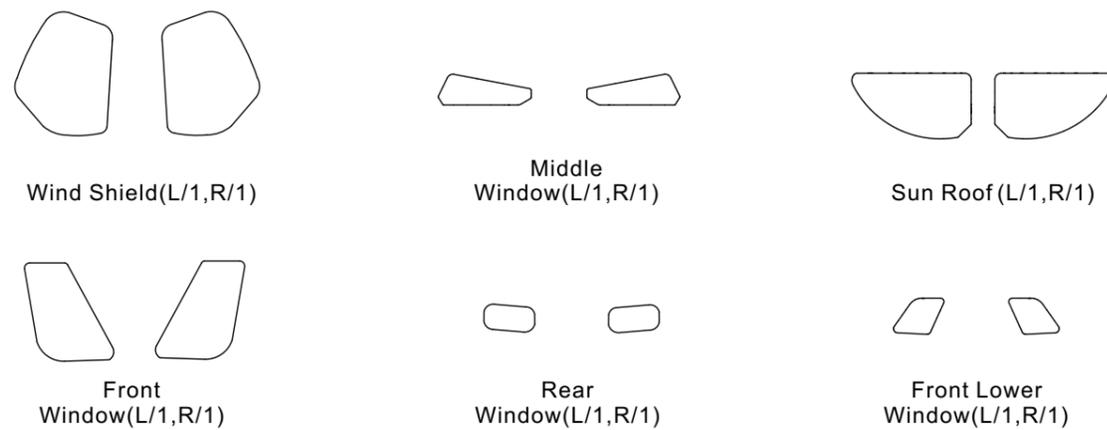
PV6058 Horizontal Tail



PV6059 Hardware



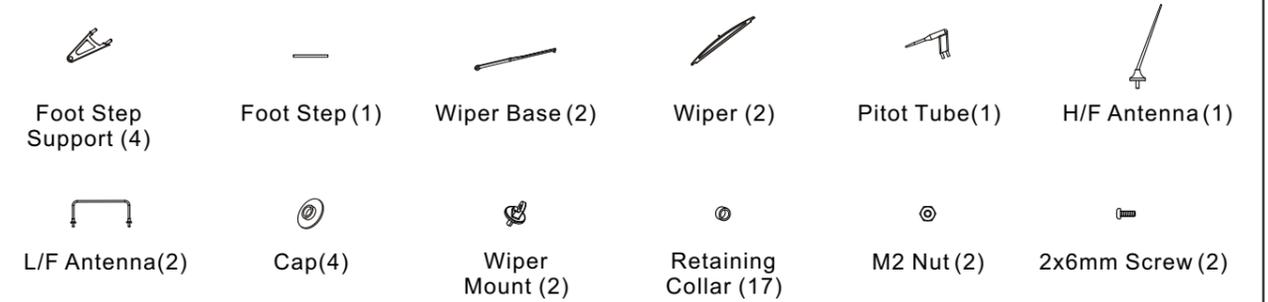
PV6060 Windshield



AGUSTA A19 Koala

PARTS DRAWINGS

PV6061 Decoration Set



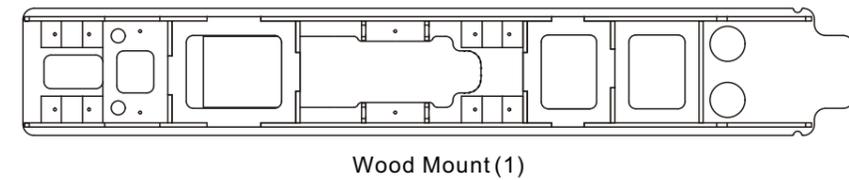
PV6062 Retaining Set



PV6063 Landing Skid



PV6064 Integrated Wood MNT



PV6065 Decal



Decal(1)

PARTS CHECK LIST



Kit Contents

Fuselage

Top Fuselage(1)
Front Fuselage(1)
Rear Fuselage(1)

Horizontal Tail

Exhaust Pipe (L/1,R/1)
Horizontal Tail (L/1,R/1)
Tail End(1)

Retaining Set

Post(2)
Body Retainer (L/1,R/1)
3x8mm Socket Screw (6)
M3 Locknut (4)
M3 Washer(10)

Windshield

Wind Shield(L/1,R/1)
Middle Window(L/1,R/1)
Sun Roof(L/1,R/1)
Front Window(L/1,R/1)
Rear Window(L/1,R/1)
Front Lower Window(L/1,R/1)

Decoration Set

Foot Step Support (4)
Foot Step (1)
Wiper Base (2)
Wiper (2)
Pitot Tube(1)
H/F Antenna (1)
L/F Antenna(2)
Cap(4)
Wiper Mount (2)
Retaining Collar (17)
M2 Nut (2)
2x6mm Screw (2)

Hardware

Screen (L/1)
Screen (M/2)
Screen (S/1)
Tail Boom Foam Retainer(1)
Tie Band(2)
Tail Skid(1)
3X10mm Setscrew(2)
2X5mm Wood Screw(32)

Landing Skid

Brace A(1)
Brace B (1)
Skid Pipe (2)
3x3mm Set Screw (8)
3x18mm Wood Screw (8)
3x18mm Socket Screw (4)
M3 Locknut (4)
M3 Washer(8)
POM Washer (4)
Skid Pipe End Cap (4)
Skid Joiner (4)
Mounting Strap (4)
Silicon Tube (1)

Integrated Wood MNT

Wood Mount (1)

Decal

Decal(1)



1. Make sure the Raptor is tested and adjusted before you install in the fuselage. Once done the testing and adjusting your Raptor, remove the canopy, landing skid, tail fins, boom supports and tail rotor assembly.



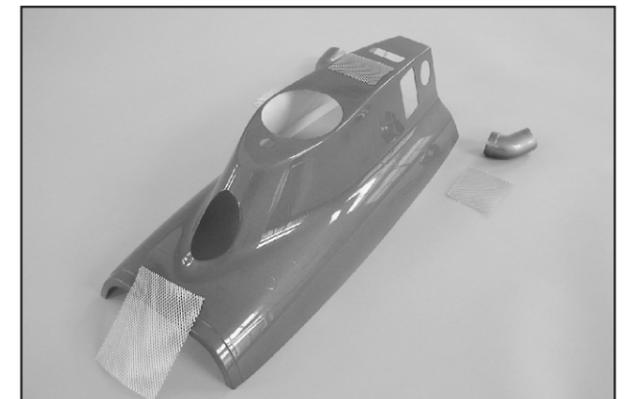
2. Trim all windows and windshields by using curve scissors.



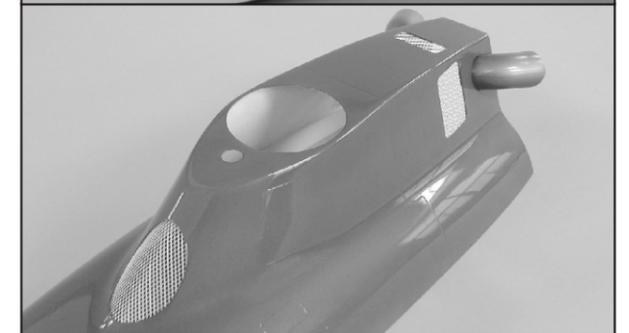
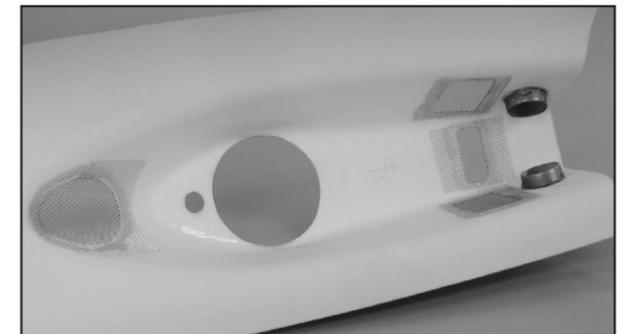
3. Sand the glue area of all windows and windshield as well as at the fuselage inside. This is to increase adhesion.



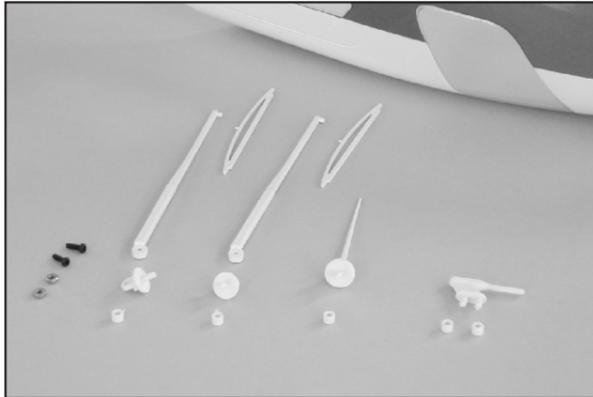
4. Epoxy all the windows and windshield to the front fuselage in place.



5. Locate the upper fuselage, screens and exhaust pipes as shown.



6. Sand the glue area then epoxy the screens and pipes in place as shown.



7. Locate the scale fittings as shown includes wiper, wiper base, wiper mount, pitot tube, retaining collar, 2x6mm screw and M2 nuts.



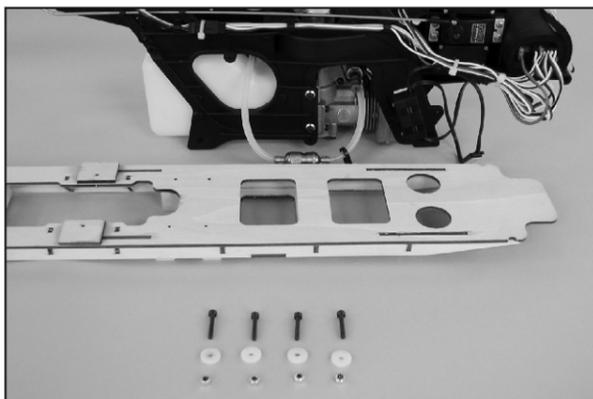
10. Secure the mechanism on the wood mount firmly.



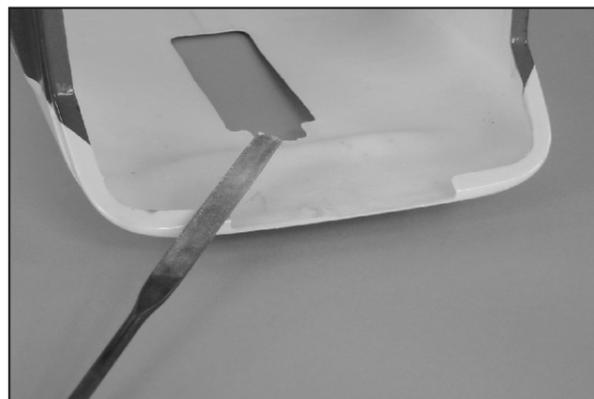
8. Refer to the photo and drill 2mm holes for all scale fittings. Install wiper, antenna and pitot tube then use the collar to secure these scale fittings in place. Secure the collar with CA. You may need to add Loctite for the M2 nut to keep from loose and keep wiper contact to windshield.



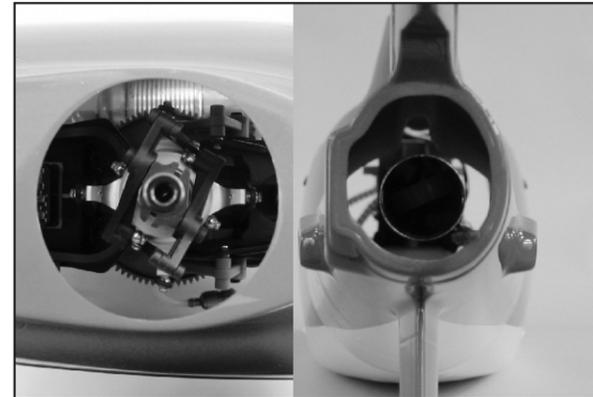
11. Place the Raptor into the fuselage, make marks on fuselage flange when the wood mount and tail boom are centered.



9. Locate the integrated wood mount and the mounting screws 3x18mm socket screws, POM washers and M3 locknuts.



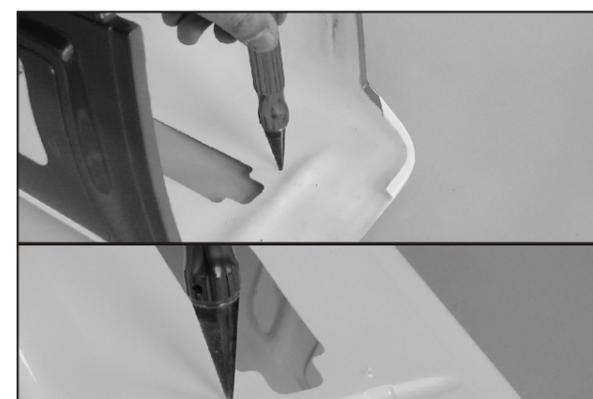
12. Remove the flange of fuselage so the wood mount can sit in the fuselage perfectly.



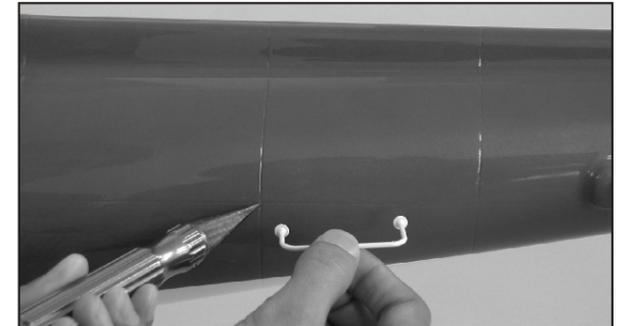
13. Trial fit the upper fuselage to make sure the shaft is in the center and the tail boom is also centered. If not then trim the flange again and adjust the wood mount accordingly.



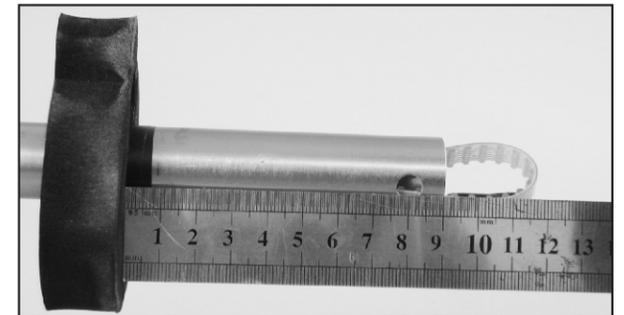
14. Use a piece of wire then apply tiny of paint at the end of wire to make marks. Note: do not touch the helicopter or fuselage as the mount is at the correct position.



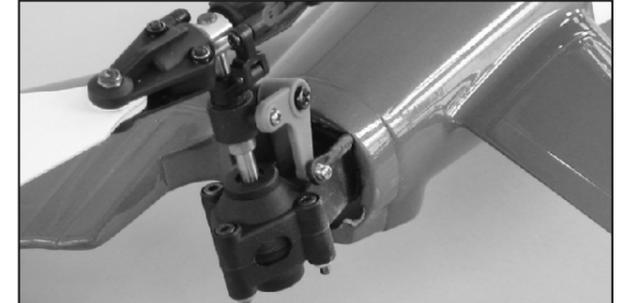
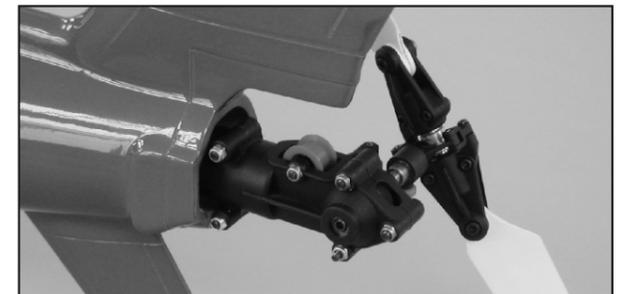
15. Remove the Raptor from fuselage. Use Reamer to drill about 2mm holes at marks.



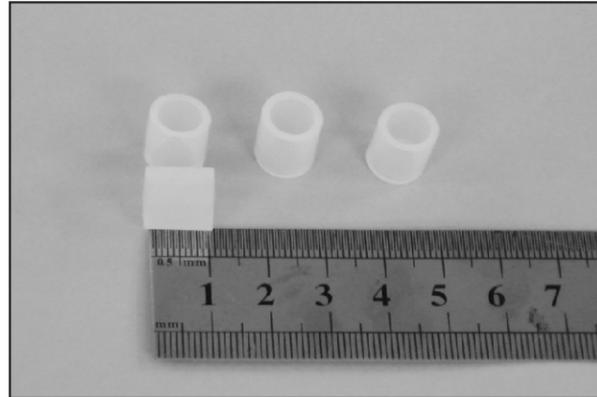
16. Drill 2mm (5/64") holes for L/F antennas at the position as photos shown. One hole will be at the cross molded line. Install the antenna and use the retaining ring to secure the antenna in place. Apply CA on thering to prevent it from loose.



17. Tape the tail boom as shown then secure the foam retainer in place with CA instant glue measured 9cm (3.5") from the tail end. Make sure the foam retainer is right up. The rudder linkage rod can push in through the die-cut. Make sure the rod can move freely.



18. Insert the tail boom into the fuselage, you will need to push in so you can install the tail rotor case. Next move the tail rotor case in but the sponge is still tightly fit in the fuselage tail. Check the pushrod movement is freely without binding, adjust or trim the fiberglass if necessary. It is not necessary to glue sponge in the fuselage in case you had to remove the heli from the fuselage.



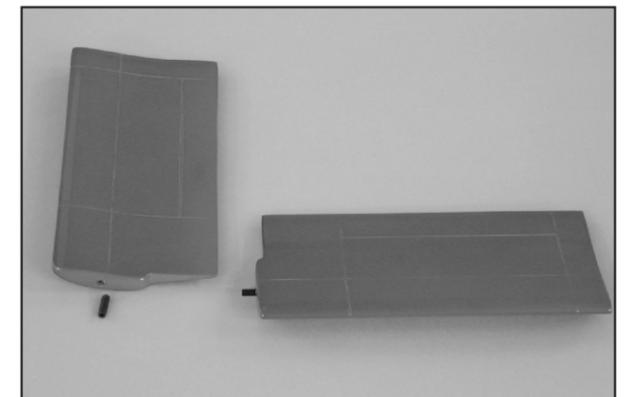
19. Locate silicone tube then cut it in four pieces in length of 10mm (3/8")



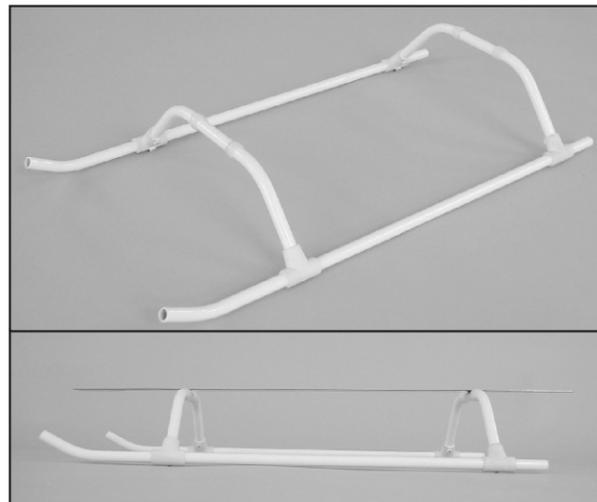
22. Attach the landing skid in place then secure with mounting strap with 3x18mm wood screws.



25. Install the retainer and secure with three 3x8mm socket screws and two M3 locknuts and washers.



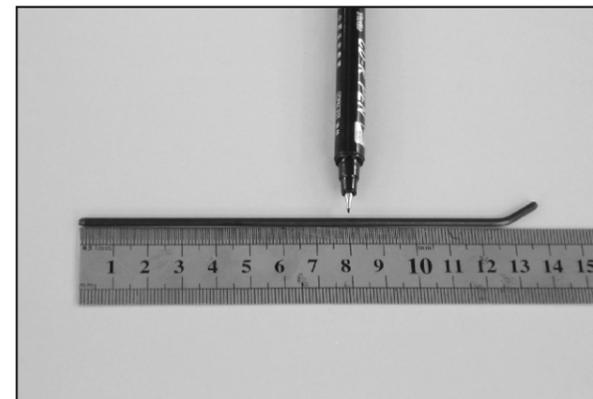
28. Locate 3x10mm setscrews, apply a tiny epoxy on the hole then install the setscrew in the hole on the horizontal tail.



20. Temporarily assemble the landing skid as shown. Remember thread the silicone tube on brace. Note the rear brace is higher than front brace as shown.



23. Remove the post but leave the set screw as shown.



26. Make marks at about 8cm (3-1/8") from the straight end.



29. Drill 3mm hole on the fuselage which is accommodated to the setscrew on horizontal tail.



21. Before securing the setscrew on the joiners, trial fit the landing skid to the fuselage and make sure the brace fit to the molded area. Install the end caps and secured with CA instant glue.



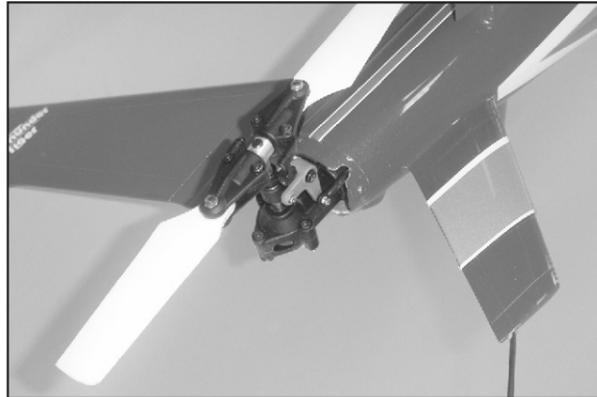
24. Install the new post which comes with A119 kit. Next locate the body retainer, adjust the retainer on the flange of fuselage then temporarily secure the retainer on post with 3x8mm socket screw. Next make mark then remove the retainer and drill 3mm holes where you marked.



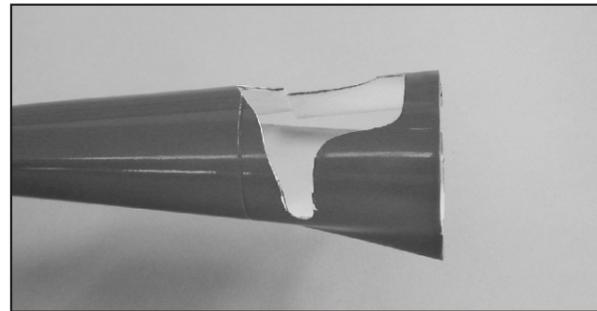
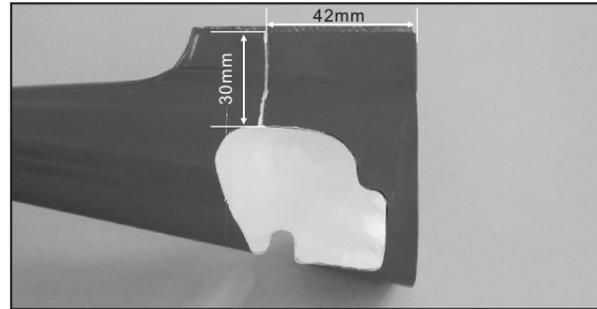
27. To install the tail skid in place, first drill 2mm (5/64") hole at the bottom fin then epoxy the tail skid to the mark you drew as shown.



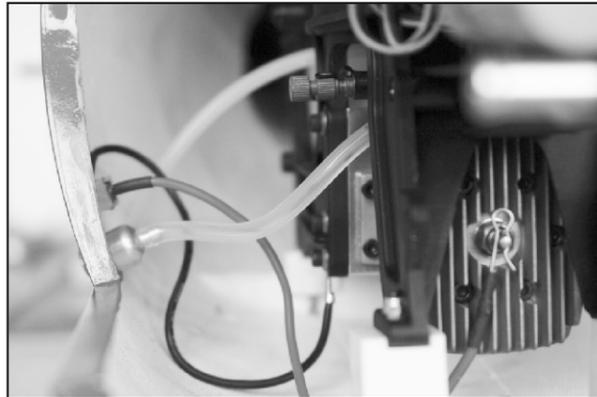
30. Epoxy the horizontal tail in place on the fuselage. Make sure the two tails are in line with each other and perpendicular to the vertical tail as shown.



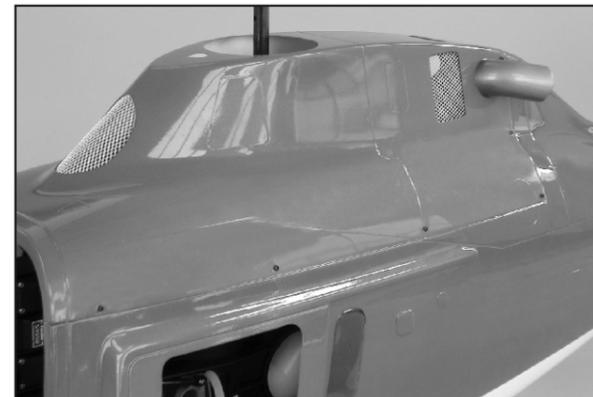
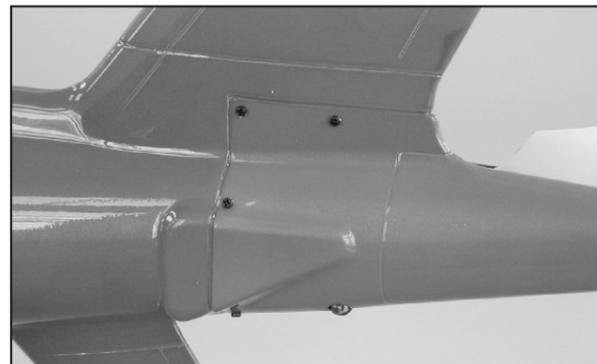
31. Trim the tail fuselage as shown to make sure the tail pitch control rod is work smoothly.



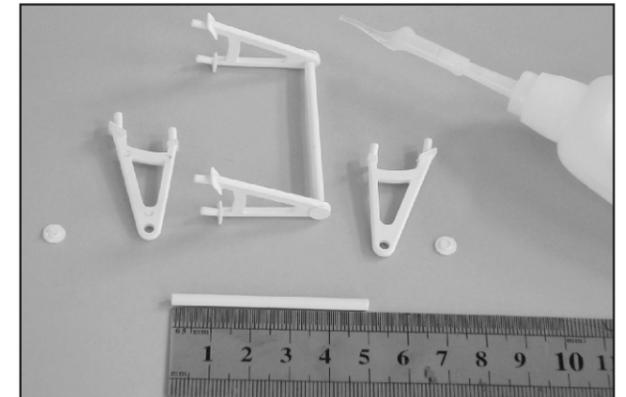
34. Use the template drawing as shown in page 13, then trim the tail end as shown.



32. You may need to install the remote glow plug extension wire (No. AT6078) for easy igniting as well as the precision fueler valve (No. 1115) for easy fueling.



36. Use the same way to install the top fuselage with 12 pieces of 2x5mm wood screws.



38. Cut the foot step in length of 50mm (1-7/8"). Assemble the whole foot step as shown, note the orientation of the step support and remember to glue the end cap with CA instant glue



37. Trail fit the front fuselage to the rear fuselage. Decide ten mounting holes then make marks on the fuselage. Drill 1.5mm (1/16") pilot holes. Secure the front fuselage in place with ten 2x5mm wood screws.



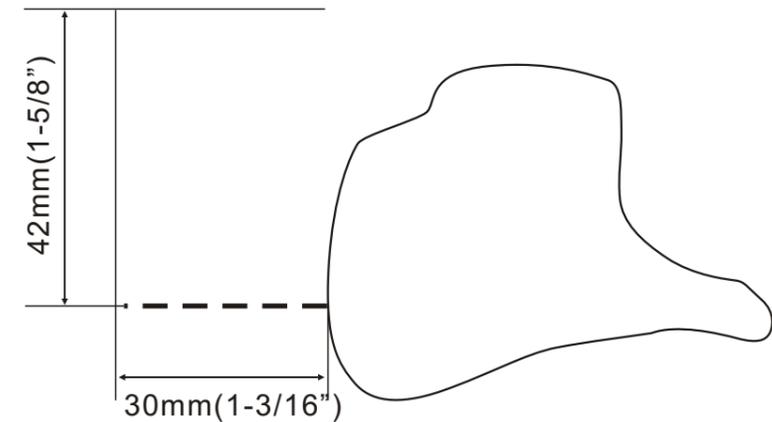
39. Make marks on fuselage where foot step assembly going to install. Drill 2mm (5/64") holes at the marks then secure the foot step assembly with the collar. Apply tiny CA on the collar to prevent it from loose. Apply black strip on the landing skid and foot step as shown.



33. Install a diverter (No. 1114 or 1114-Y) and drill an exit hole at the bottom of the fuselage as shown. You may extend the diverter to fuselage exhaust pipe to obtain a more scale-like look.



35. You may wisely to use mask tape to tape it in place then make marks. Drill 1.5mm (1/16") pilot holes on each mark then secure the tail in place with eight 2x5mm wood screws.





Test Flight

1. When hovering the A119, try to keep rotor speed at approximately 1600~1700 RPM.
2. Check the helicopter and fuselage to see if any screw loosened after each flight.
3. Trim the elevator when switch on the Idle for speed flight if necessary.

40. Refer to the box label and apply the decal. Above is the bottom tail fuselage which you can see how to apply the two golden strips. Route the antenna to the tail and drill 2mm(5/64") hole at the center bottom fuselage then tape it along the tail.



Titan RAPTOR

50 Size 3D Heli

Specifications

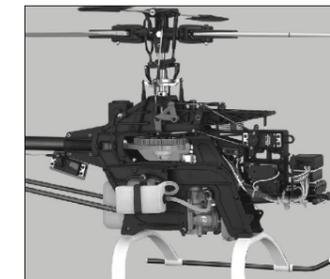
Full Length of Fuselage	48.03" (1220mm)
Full Width of Fuselage	5.51" (140mm)
Total Height	15.74" (400mm)
Main Rotor Dia	52.95" (1345mm)
Tail Rotor Dia	9.29" (236mm)
Gear Ratio	8.5:1:4.56
Full Equipped Weight	6.6 lbs (3000g)



No.4853

Features:

- ▶ Metal Swashplate
- ▶ Hardened Main Shaft
- ▶ Metal Rear Servo Tray
- ▶ Pitch Push-Pull Lever System
- ▶ Elevator Push-Pull Lever system
- ▶ Longer Tail Boom
- ▶ Longer Tail Push Rod
- ▶ 686XL Tail Drive Belt
- ▶ SUS Flybar
- ▶ SUS Linkage Rod
- ▶ Heavy Duty Clutch Bell
- ▶ New Style Body Decal



Combined with all the features of Raptor50 V2, the new Raptor50 Titan adds more new features - longer tail boom to fit 620mm blade, push-pull system for collective pitch control & elevator control, rear mounted tail rotor servo tray, hardened main shaft, stainless flybar and linkage rod etc.

With all the new features, the Raptor50 Titan has the best power-to-weight ratio and most accurate control system of any 50 class helicopter in the market. For 3-D pilots, Raptor50 Titan will make you enjoy executing crisp maneuvers like – Climbing Tic-Toc, Chaos, Death Spirals and any radical maneuver that pilots can dream of. Beginners and advanced 3-D fliers will be impressed with this new Raptor family member—Raptor 50 Titan.