MEMO

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Warranty

This kit is guaranteed to be free from defects in material and workmanship at the date of purchase. It does not cover any damage caused by use or modification. The warranty does not extend beyond the product itself and is limited only to the original cost of the kit. By the act of building this user-assembled kit, the user accepts all resulting in liability for damage caused by the final product. If the buyer is not prepared to accept this liability, it can be returned new and unused to the place of purchase for a refund.

Notice: Adult Supervision Required

This is not a toy. Assembly and flying of this product requires adult supervision.

Read through this book completely and become familiar with the assembly and flight of this UH-1Y. Inspect all parts for completeness and damage. Browse www.thundertiger.com for customer service if you encounter any problems.

THUNDER TIGER CORP. www.thundertiger.com

INTRODUCTION



Congratulations on the purchase of our finest scale heli fuselage to date. This famous UH-1Y fits Thunder Tiger Raptor Titan 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 UH-1Y is just like a real thing, hovering this UH-1Y will definitely make you stand out at 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

This UH-1Y 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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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 UH-1Y, Epoxy and Instant (cyanoacrylate) adhesives. We recommend that you purchase both 5-minute and 30minute 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



No.1115 - Precision Valve

R/C System:

6 Channel Heli radio reg'd GYRO system reg'd

Helicopter:

Raptor 50 Titan Suggested

Tools:

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

Model Knife, 1/2" MASK Tape, Small & Medium crewdrivers, Scissors, Long nose Pliers, Drill and Drill Bits 1.5 ,2 ,3 mm(1/16", 5/64", 1/8"), 150~200 Grid Sand Paper, Rat Tail and half-round file, Fine Felt Tip Pen & Soft Lead Pencil, Reamer, Hex Wrenches.





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



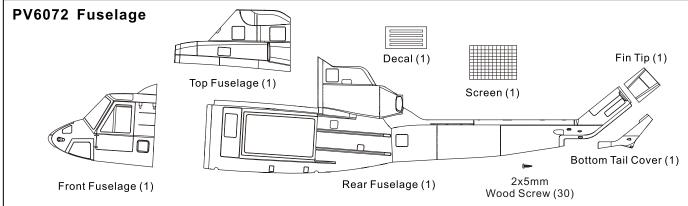
No.2980 4-cell 3600mAh Battery

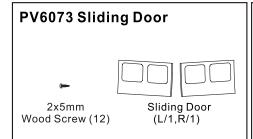


PARTS DRAWINGS

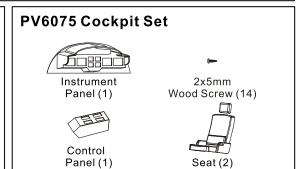


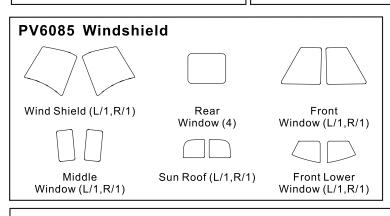


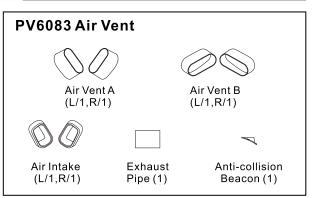


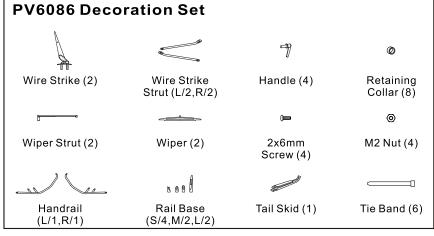


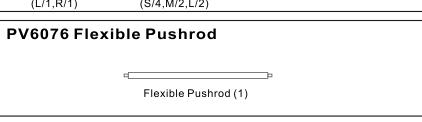




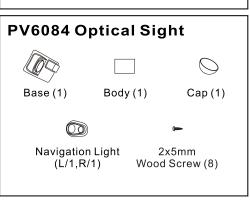




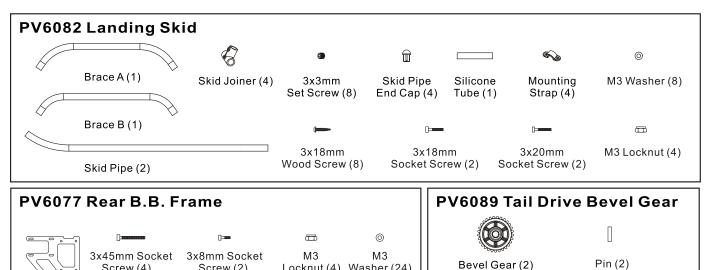


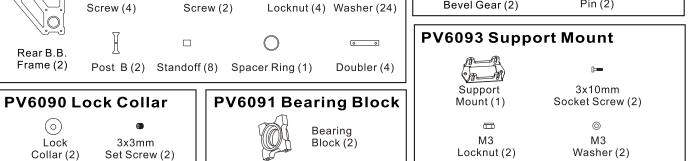


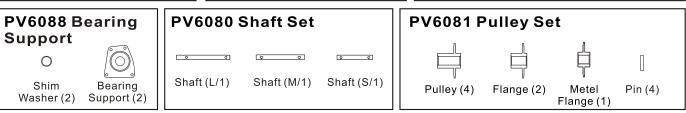


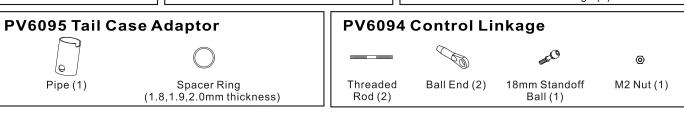


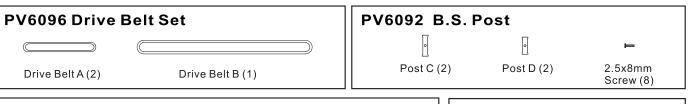
PARTS DRAWINGS

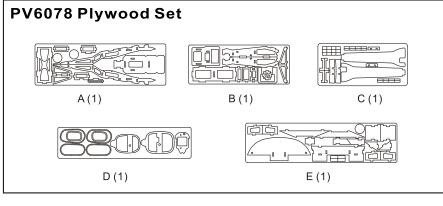


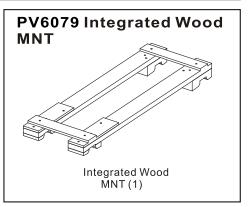








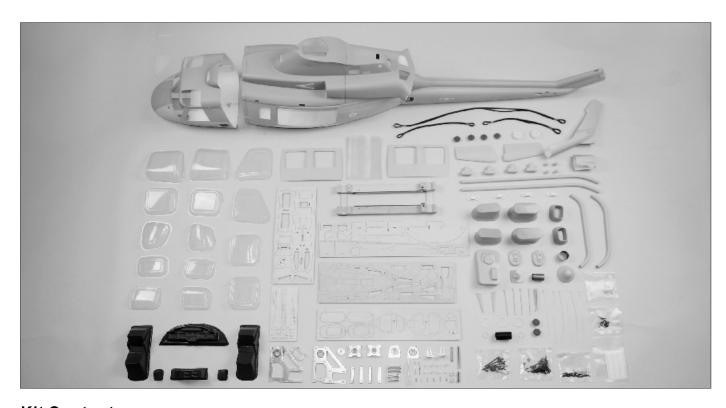












Kit Contents

Fuselage

Top Fuselage (1) Front Fuselage (1) Rear Fuselage (1) Bottom Tail Cover (1) Fin Tip (1) Screen (1) Decal (1) 2x5mm Wood Screw (30)

Slidind Door

2x5mm Wood Screw (12) Sliding Door (L/1,R/1)

Horizontal Tail

Horizontal Tail (L/1,R/1)

Cockpit Set

Instrument Panel (1) Control Panel (1) 2x5mm Wood Screw (14)

Flexible Pushrod

Flexible Pushrod (1)

Rear B.B. Frame

Rear B.B. Frame (2) 3X45mm Socket Screw (4) 3X8mm Socket Screw (2) M3 Locknut (4) M3 Washer (24) Post B (2) Standoff (8) Spacer Ring (1) Doubler (4)

Plywood Set

Integrated Wood MNT Integrated Wood MNT (1)

Shaft Set Shaft (L/1) Shaft (M/1) Shaft (S/1)

Pulley Set Pulley (4)

Flange (2) Metel Flange (1) Pin (4)

Landing Skid

Brace A (1) Brace B (1) Skid Pipe (2) Skid Joiner (4) 3X3mm Set Screw (8) Skid Pipe End Cap (4) Silicone Tube (1) Mounting Strap (4) M3 Washer (8) 3x8mm Wood Screw (8) 3X18mm Socket Screw (2) 3X20mm Socket Screw (2) M3 Locknut (4)

Air Vent

Air Vent A (L/1,R/1) Air Vent B (L/1,R/1) Air Intake (L/1,R/1) Exhaust Pipe (1)
Anti-collision Beacon (1) **Optical Sight** Base (1)

Body (1) Cap (1) Navigation Light (L/1,R/1) 2x5mm Wood Screw (8)

Windshield

Wind Shield (L/1,R/1) Middle Window (L/1,R/1) Rear Window (4) Sun Roof (L/1,R/1) Front Window (L/1,R/1) Front Lower Window (L/1,R/1)

Decoration Set

Wire Strike (2)
Wire Strike Strut (L/2,R/2) Handle (4) Retaining Collar (8) Wiper Strut (2) Wiper (2) Handrail (L/1,R/1) Rail Base (S/4,M/2,L/2) Tail Skid (1) Tie Band (6) M2 Nut (4) 2x6mm Screw (4)

Retaining Set

Body Retainer (L/1,R/1) M3 Washer (6) M3 Locknut (4) 3X8mm Socket Screw (2) 3X12mm Socket Screw (4) Post A (2)

Bearing Support Shim Washer (2) Bearing Support (2)

6

Tail Drive Bevel Gear

Bevel Gear (2) Pin (2)

Lock Collar Locker Collar (2) 3X3mm Set Screw (2)

Bearing Block Bearing Block (2)

B.S. Post

Post C (2) Post D (2) 2.5x8mm Screw (8)

Support Mount

Support Mount (1) 3X10mm Socket Screw (2) M3 Locknut (2) M3 Washer (2)

Control Linkage

Thread Rod (2) Ball End (2) 18mm Standoff Ball (1) M2 Nut (1)

Tail Case Adaptor

Pipe (1) Spacer Ring (1.8,1.9.2.0mm thickness)

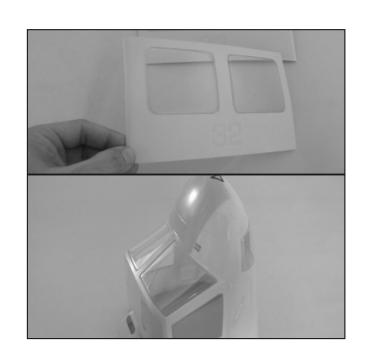
Drive Belt Set Drive Belt A (2) Drive Belt A (1)

1.Trim all windows and windshields along with the

cutting lines.

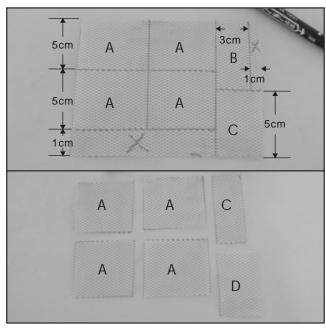


2.Use 200 grit sandpaper to sand the glue area to enhance the adhesion then apply epoxy at the glue area.

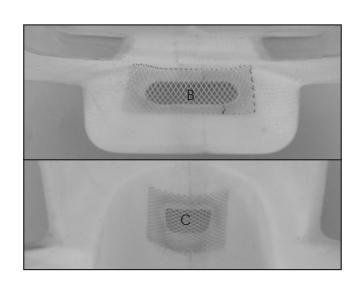




3. Glue all windows and windshields in place. Wipe away the excess epoxy and make sure they are well glued.

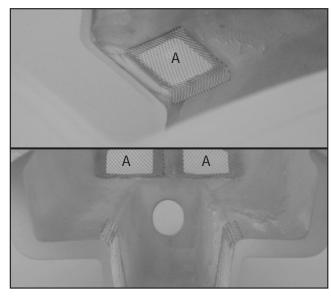


4.Locate a piece of screen, refer to the drawing and cut it into pieces.





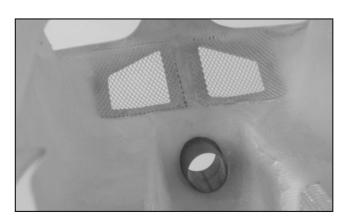




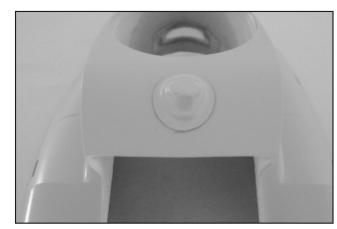
5. Glue the screen pieces in place as photos shown by using epoxy.



8.CA the navigation light in place as shown.



6.Locate the exhaust pipe and glue it in the top fuselage as shown. Leave about 20mm in length outside the top fuselage. Above photo is shown from inside of fuselage.



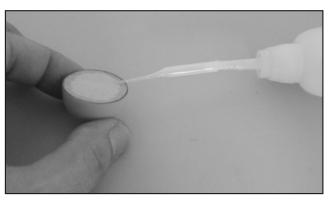
9.CA the Anti-collision Beacon part in place as shown.



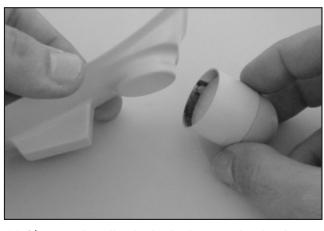
7.Locate the navigation light and Anti-collision Beacon parts. Trim to fit in place.



10.Locate the Optical Sight parts as shown.



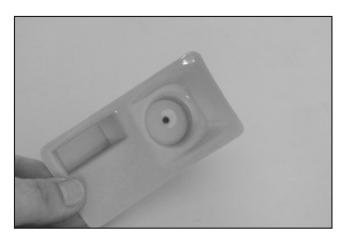
11. Take one disc and glue it in the Cap. Sand the surface and make sure the disc is flushed with the cap edge.



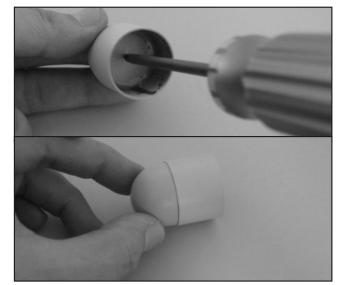
14. Glue another disc in the body, note the depth must accommodate to the Optical Sight Base.



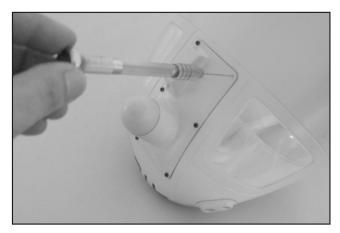
12. Same way to glue another disc in the body of Optical Sight and flushed with cap edge on one end.



15. Same way to drill a 1.5mm hole on the base then secure the Optical Sight body in place with 2x5mm wood screw.



13.Drill 1.5mm hole in the middle of disc inside the body, then secure the cap on the body with 2x5mm wood screw.

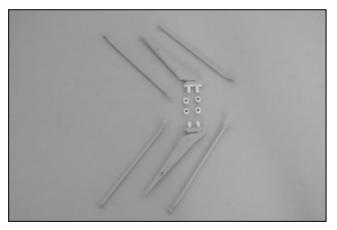


16.Trail fit the Base on the bottom front fuselage. Drill six 1.5mm holes then secure the base on the fuselage with six 2x5mm wood screws.

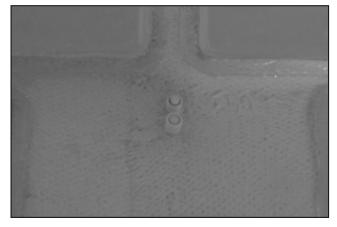
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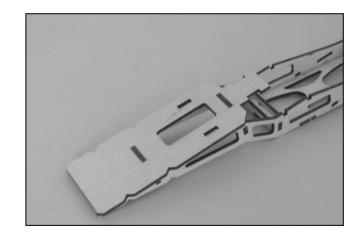




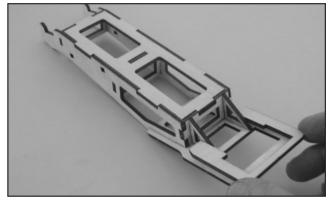
17.Locate the Wire Strike parts as shown.



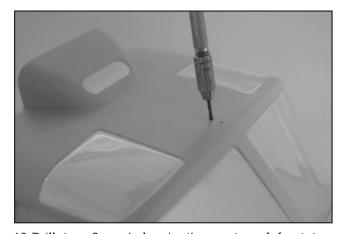
20.Install the wire strike in place, secure the wire strike with two collars as shown.



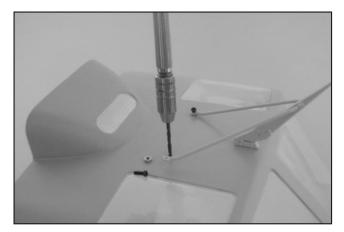
23. Glue the battery tray on the frame.



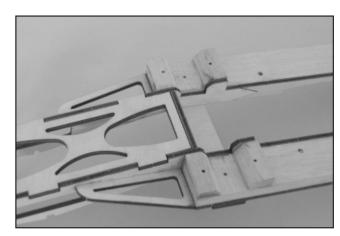
26.Upside down the Frame B and glue the servo tray on



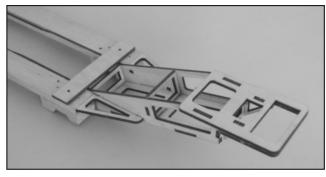
18.Drill two 2mm holes in the center of front top fuselage. Note the hole distance must meet to wire strike.



21.Install the wire strike struts, glue the strut on wire strike first then drill 2mm holes at the proper position. Secure the struts with 2x6mm screws and M2 nut.



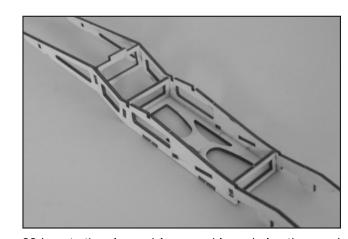
24.Epoxy the assembled frame A on the Integrated Wood Mount.



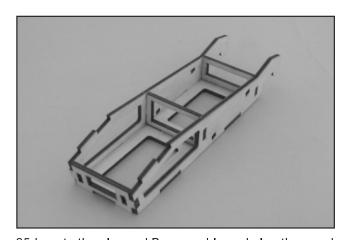
27. Epoxy the Frame B on the Integrated Wood Mount at the other side.



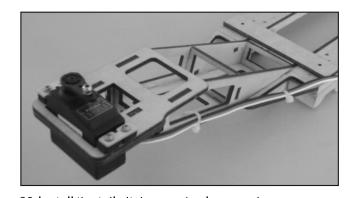
19.Do the same procedure at the front bottom fuselage.



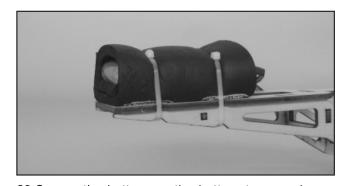
 $22. Locate \ the \ plywood \ A, \ assemble \ and \ glue \ the \ wood \ frame \ as \ shown.$



25.Locate the plywood B, assemble and glue the wood frame as shown.



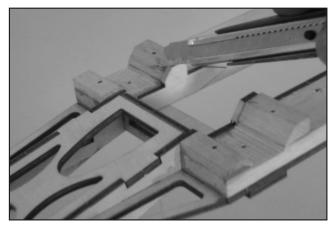
28.Install the tail pitch servo in place as shown.



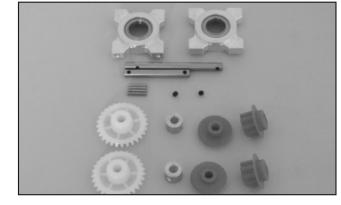
29. Secure the battery on the battery tray as shown. Use foam pad to wrap the battery then secured by nylon tie-bands. The receiver is still fixed on the servo frame of the mechanism.





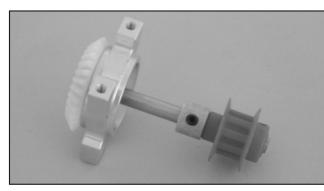


30. Trim the wood mount where to contact the fuselage.

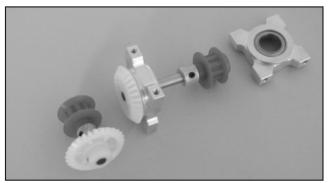


33.Locate all the transmission bevel gears, pulleys, shafts, pins, bearing blocks and stop collars as shown.

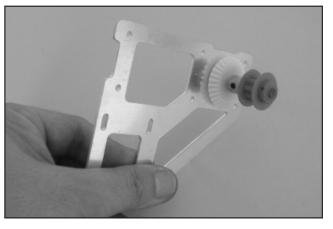




Insert a collar then a pulley. Insert the pin on pulley, make sure pulley and pulley flange join together then secure the collar with 3x3mm setscrew.



36. Same way to install the bevel gear and pulley on shaft(middle length).

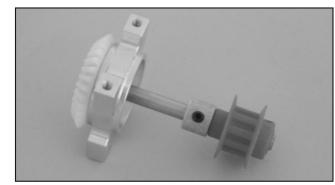


37.Install the gear/pulley on the Rear Bearing Frame.

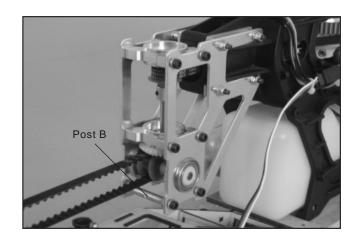


40.Locate the Rear Support Mount as shown.





35.Next install the bearing block, note the orientation.



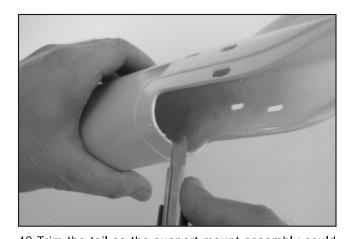
38.Install rear frame on the Titan with furnished the aluminum doublers, standoff. Do not secure at this moment. You will need four 3x45mm socket screws, eight standoffs, eight M3 washers, four M3 locknuts

and two doublers.

39.Install the long belt, bearing block, bevel gears and pulley as shown. You will need twelve 3x8mm socket screws, twelve M3 washers. Apply Loctite is necessary for this step. Try to move backward of the frame when securing the rear frame so the short belt has good. tension. Test driven the belt and make sure the gear works smoothly.



41. Secure the AL. support mount on the plywood as shown with two 3x10mm socket screws, washers and locknuts.



42. Trim the tail so the support mount assembly could fit inside perfectly.



31. Secure the mechanism on the Integrated Wood

Mount with two 3x18mm, two 3x20mm socket screws,

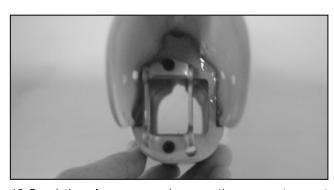
four M3 locknuts and four M3 washers. Note the

3x20mm socket screws are at the rear.

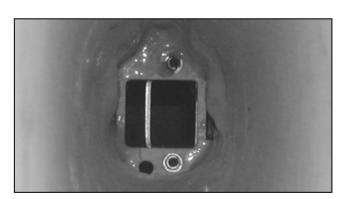
32. Remove the tail boom and old belt. Install the new short belt as shown.

12

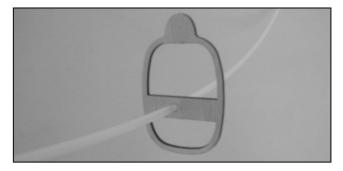




43. Sand the glue area and epoxy the support mount assembly in place as shown.



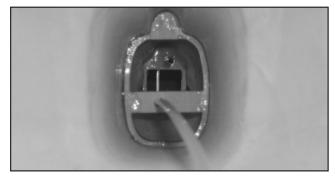
44. Apply enough epoxy to the support from the other side. You may use a stick to apply epoxy on the glue area



45. Locate the guide tube then thread the tube through the bulkhead as shown.



46. Thread the guide tube to the other bulkhead as shown and leave 35mm in length off the bulkhead.



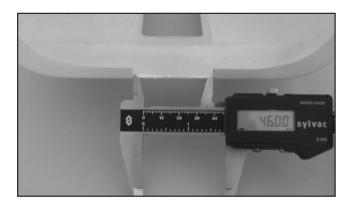
47. Epoxy the bulkhead in place where the bulkhead just tie fit in the tail fuselage. Apply enough epoxy and let dry for next step.



48. Same way to install the other tail bulkhead in place. The tube is only 35mm in length off the bulkhead.



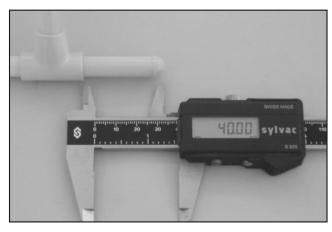
49.Install the flexible tail pitch pushrod. Thread the straight threaded rod into the tube and ball end as shown.



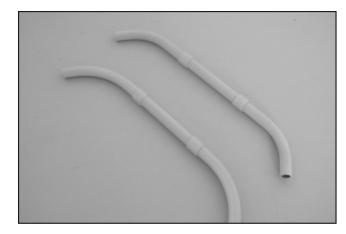
50. Trim an opening at the fuselage flange in length of 46mm.



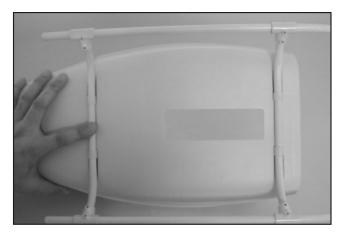
51.Locate a silicone tube then cut to four pieces as photo shown.



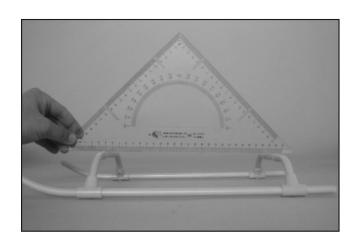
 $54.\mbox{The distance}$ from joiner to the end cap of skid pipe is $40\mbox{mm}$.



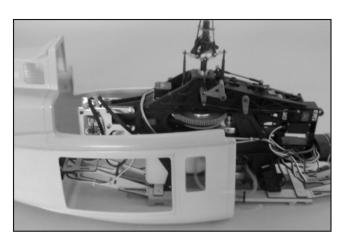
52. Thread the tube onto the braces as shown.



55. Trial fit the landing skid assembly on the bottom fuselage. Adjust it if necessary.



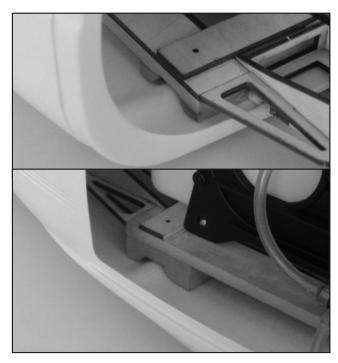
53.Install the landing skid as shown, adjust the distance between two braces at about 270mm. Do not secure at this moment.



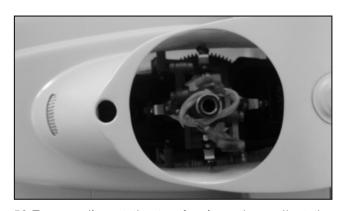
56. Carefully slide the mechanism into the fuselage and trial fit in the place.. You will have to remove the main rotor head before doing this step.







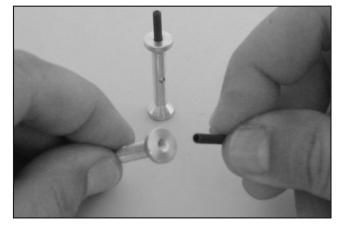
57. Make sure the integrated wood mount sit on the "hill" of fuselage.



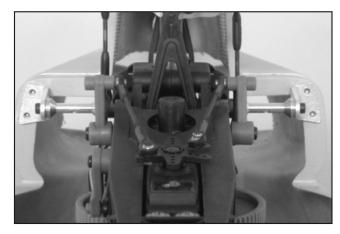
58. Temporarily put the top fuselage then adjust the rotor shaft is right in the center if you see from the top.



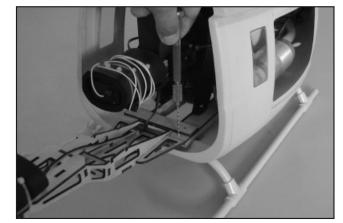
59.Drill a 10mm hole for diverter out of the bottom fuselage.



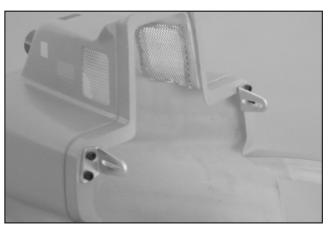
60. Remove the old post and thread old setscrew in the new post.



61.Install the new posts on the mechanism. Next secure the body retainer with 3x12mm socket screw then make marks on top fuselage. Adjust the retainer just contact the fuselage then make marks at the retainer mounting holes.



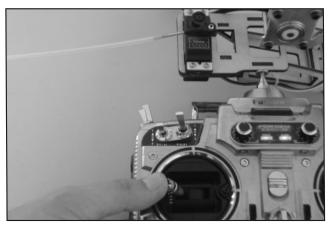
62. Use the mounting hole as drill guide to drill the fuselage with 2mm drill bit. Next enlarge to 3mm holes on the fuselage.



63.Remove the retainer and drill 3mm holes on the marks you did on the fuselage then secure the retainer as shown.



66. Secure the mechanism on fuselage with 3x18mm wood screws.



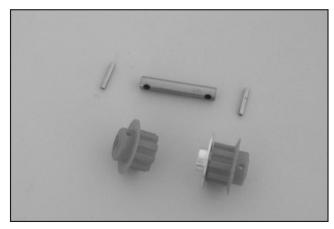
64. Snap on the ball end on the ball and make sure the direction is correct as shown.



67. Secure the retainer on post and make sure fuselage is not binding.

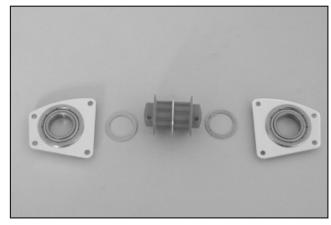


65.Install the mechanism in the fuselage again, thread the belt through the fuselage and the pushrod through the guide tube.



68.Locate the rest pulley parts includes two pulley, one AL. flange, two pins and the short shaft.





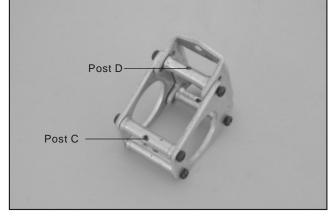
69.Install the dual pulleys as shown. Locate the Bearing Support and shim washers.



72. Use needle pliers to place the post D in place.



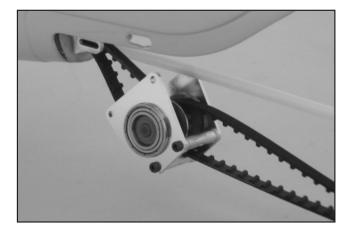
73. Drill the slot holes on the fuselage. Secure the screws from the side fuselage as shown. Remember to pull the bearing support backward to make sure the long belt has good tension. Loctite is required for the screws.



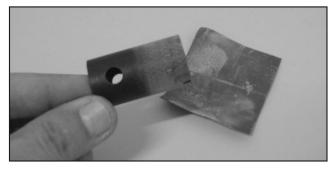
70. The photo shows the structure and how to assemble the post the bearing support. (The photo shown without bearing).



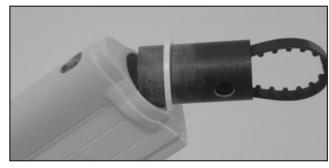
74. You can also use a screw driver to check the long belt from the vent if it has good tension.



71. Attach the belt then install the duel pulleys in the bearing support then secure all screws. Lotite is necessary for this step.



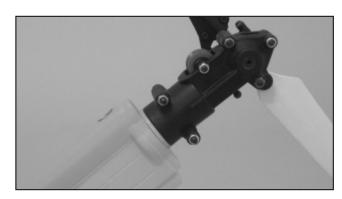
75. Sand the tail case adaptor so it can enhance the adhesion.



76. Thread the belt through the adaptor. Also install the spacer ring in place but do not glue at this moment.



77. There are three spacer rings in the kit, we use 2mm in thickness.



78. Install the tail case in place as photo shown.



79. Exam the belt tension from the bottom. Change or add the spacer ring if the belt is too tight or too soft.



80. Once satisfied with the tension, you may apply enough epoxy to fix the adaptor in place through the big slot hole. Note do not apply any glue on the belt.



81. Glue two formers together first. Next sand the glue area then epoxy the former in place as shown.



82.Locate the bottom tail cover the tail skid, epoxy the skid in place as shown.

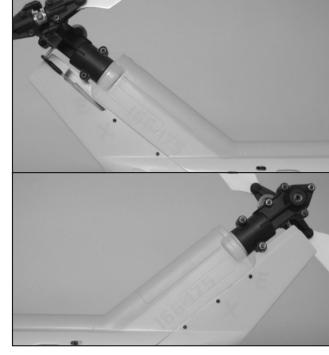


83. Thread the ball end onto the threaded rod.

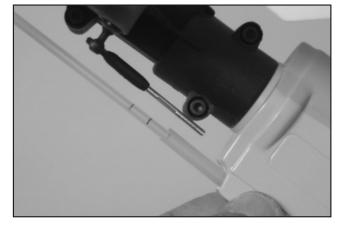




84.Install the 18mm standoff ball on the tail pitch control lever and secure it with M2 nut.



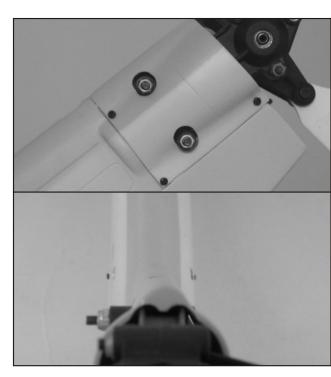
87.Drill 1.5mm holes and Install the bottom tail cover with nine 2x5mm wood screws, 5 pieces at left side and 4 pieces at right side.



85.Measure the flexible pushrod, consider the control throw of the control lever and at least about 6mm threaded rod inside the pushrod then carefully cut away guide tube first then the pushrod. Note the pushrod and guide tube might not at the same length, do not hurt the inside pushrod.



86.Thread the threaded rod inside the pushrod the snap onto the ball as shown. Make sure the servo movement is smooth.



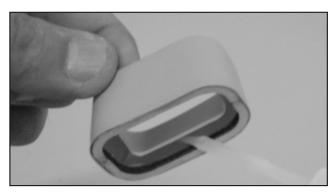
88.Drill 8mm holes for exploding the screw on the fin tip, then install the Fin Tip as shown with five 2x5mm wood screws. 3 pieces at left and 2 pieces at right. Make sure the fin tip well positioned as you can see from the top.



89.Locate the Air Inlet and reinforced frame.



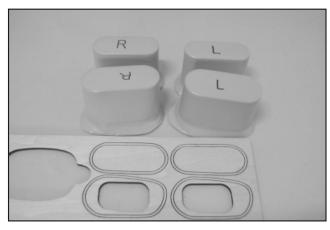
90. Trim the inlet with curve scissors.



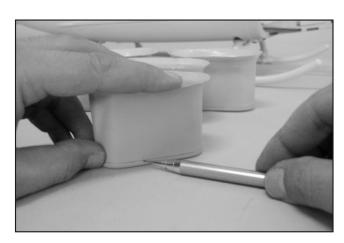
91.Glue the reinforced frame inside the Air Inlet. Note the frame must be flush with the opening.



92. Epoxy the Air Inlet assembly to the fuselage. Do the same on the other side.



93.Locate the Air Vents, note the vents are different in left and right, inner and outer.



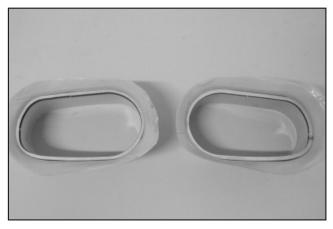
94. Carefully use hobby knife to trim the vents.



95.Before you glue the reinforced frame, make sure the left and right again as photo shown.



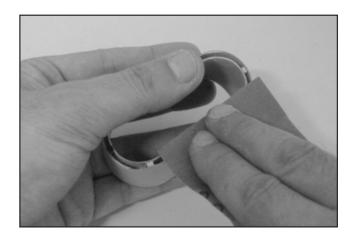




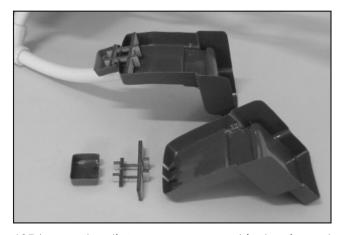
96. Trial fit the frame in the outer vents at the mold lines.



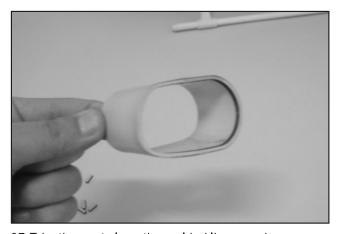
99. Glue the frame in place and make sure it is flush with the opening.



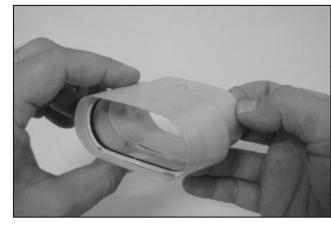
102. Sand two opening and make sure they are level at the opening.



105.Locate the pilot seat parts, assemble the plywood parts first then join the seat as shown .



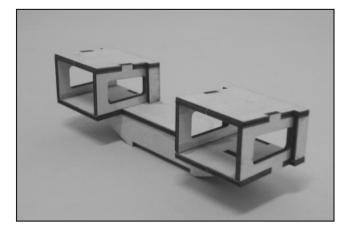
97. Trim the vent along the molded lines as shown.



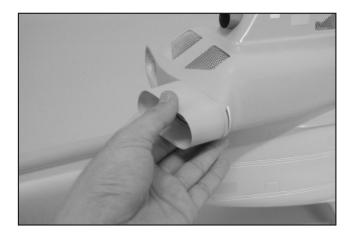
100. Glue the other reinforced frame in the outer vent, note the distance to the edge is about the length of plywood spacer as you can see in the next photo. Trial fit the inner vent in the outer vent.



103.Use marker to paint the spacer in dark for scale looking.



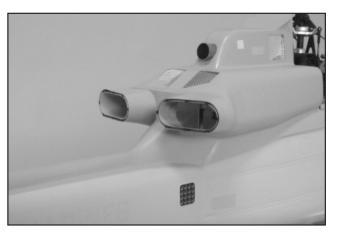
106.Locate the plywood sheet E and assemble the wood structure for the cockpit.



98. Trial fit to the fuselage make sure you can glue on later.



101.Locate the spacer from the plywood sheet C and glue them averagely between inner vent and outer vent.



104. Epoxy vents on to the fuselage as shown.



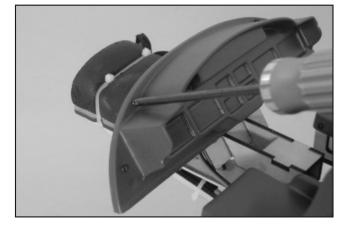
107. The rest parts assembly illustration as shown.







108. Assemble the instrument panel wood structure.



111. Secure the instrument panel in place with four 2x5mm wood screws.



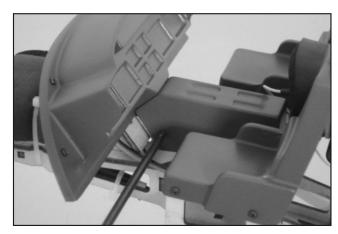
114. Apply decals on the front window as photo shown.



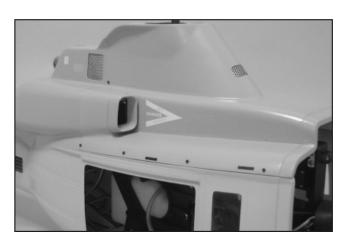
117.Drill 2mm holes on all doublers.



109. Secure the seat in place with four 2x5mm wood screws. Do the same way on the other seat.



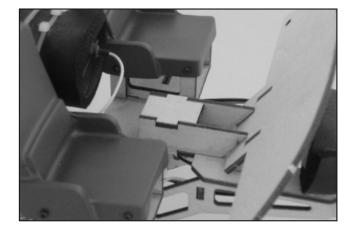
112.Next glue the control panel in the center and secure with two 2x5 wood screws.



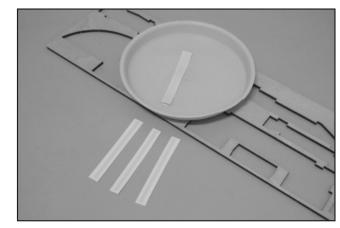
115. You may use mask tape or scotch tape to secure the top fuselage temporarily in place then drill 1.5mm pilot holes. Secure the top fuselage with ten 2x5mm wood screws.



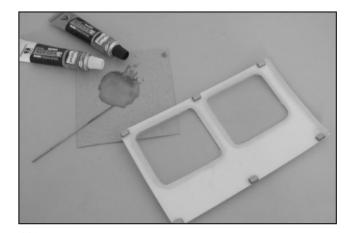
118.Use the hole on sliding door as the guide to drill 1.5mm pilot holes on the fuselage. Suggest to do an "open" door as photo shown, it will be easier to access the fuselage to maintain the mechanism also get a better cooling in flight. Secure the door with six 2x5mm wood screws.



110. Glue the whole cockpit wood structures in place as photo shown. Includes seats, instrument panel and center control panel.



113.Locate the decal, please put in the warm water for seconds before using.



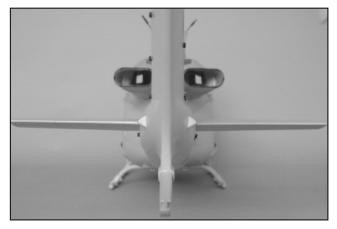
116.Locate the plywood doublers and sliding doors. Epoxy the doublers in place as photo shown. Sand the glue area before gluing.



119. You may do the same "open "door on the other side or do it a "close" door. Trial fit the front fuselage in place and drill six 1.5mm pilot holes. Secure the front fuselage with 2x5mm wood screws.







120.Sand the glue area of the horizontal tail then epoxy the two halves in place.



121.Re-install the rotor head in place, make sure all rods are connected properly.



Test Fligh

- 1. When hovering the UH-1Y, try to keep rotor speed at approximately 1600 $\sim\!1700$ 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.



26







27

- ► Metal Swashplate
- ► Hardened Main Sahft
- ► 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.