

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)

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. ratio and With all the new features, the Raptor50 Titan has the best power-to-weight 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 TicToc, 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.

THUNDER TIGER CORP. www.thundertiger.com



MD530

Assembly Manual



No.3837-C

Specifications:

Fuselage Length (less rotor):	49.2" (1250mm)
Fuselage Width (less rotor):	9.6" (245mm)
Fuselage Height:	20.3" (515mm)
Full-Equipped Weight:	7.5 lbs (3400g)

Civil MD530 Scale Fiberglass Fuselage (TTR3837-C)

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 MD530. Inspect all parts for completeness and damage. Browse www.thundertiger.com for customer service if you encounter any problems.

INTRODUCTION



Congratulations on the purchase of our finest scale heli fuselage to date. Widely used in joy flight, site inspection, photo shoot and corporate transport, the popular civil MD530 now you can get from Thunder Tiger. Features factory pre-painted civil scheme of FRP fuselage with all necessary hardware and scale fittings. Only takes couple hours of enjoyable assembly time then you can experience this outstanding scale chopper in the 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 MD530 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, 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.

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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MD530

RECOMMENDED TOOLS & MATERIALS

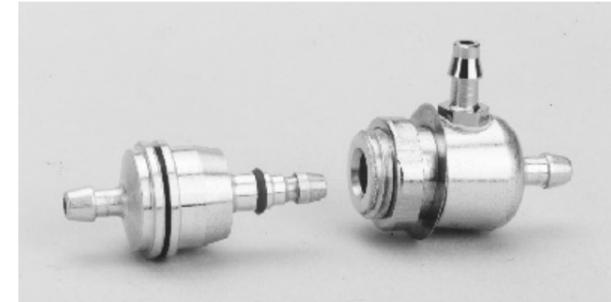
Adhesives:

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



You will need two types of adhesives for the civil MD530 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

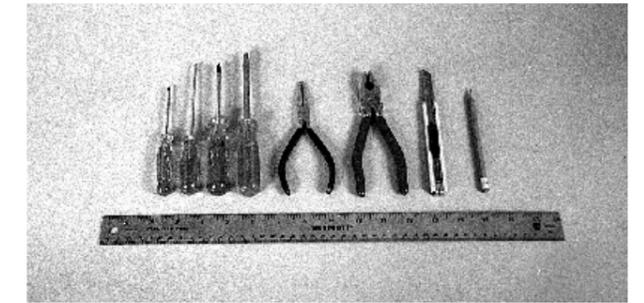


TTR1115 - Precision Fueler Valve

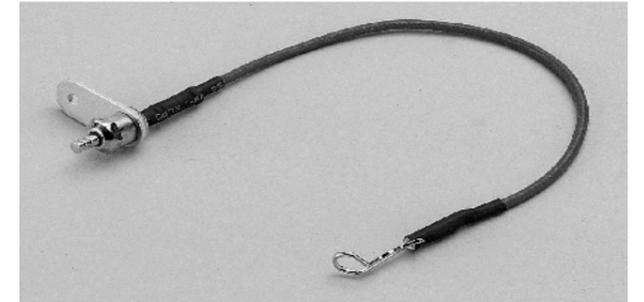
PRE-ASSEMBLY NOTES

Tools:

- Model Knife, 1/2" MASK Tape, Small & Medium Screwdrivers, Scissors, Long nose Pliers & Diagonal Cutting Pliers, Drill and Drill Bits (1/16", 5/64"), 150 Grid Sand Paper, Fine Felt Tip Pen & Soft Lead Pencil, Reamer



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. As you will notice, many household tools can be utilized during construction.



TTR3803 - Remote Glow Adapter

R/C System:

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

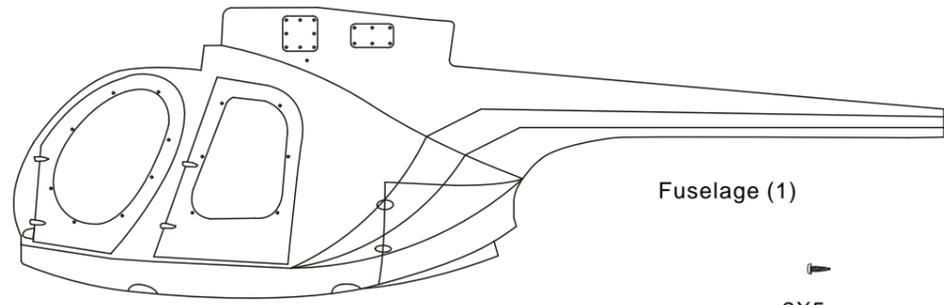
Helicopter:

- Raptor 50 Titan Suggested



TTR4853 - Raptor 50 Titan

PV6051 Fuselage

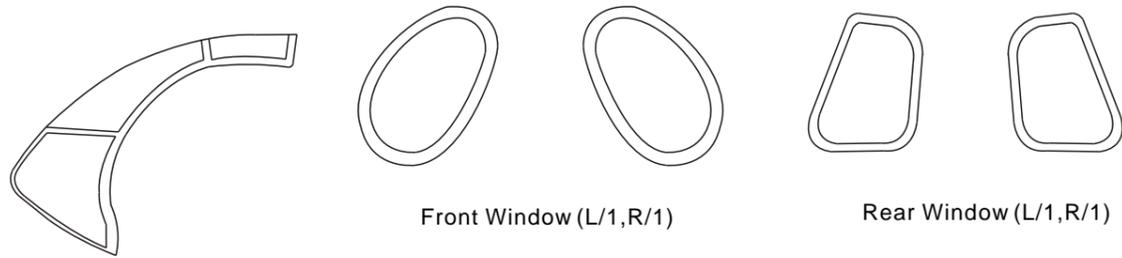


Fuselage (1)

2X5 mm Wood Screw (4)

- Plastic Tube (1)
- ⊏ Silicon Grommet (1)
- ⊏ Exhaust Vent (1)
- ⊙ Tail Boom Foam Retainer (1)
- ⊏ Silicon Grommet (2)
- ⊖ Silicon Strut Fairing (4)

PV6052 Windshield



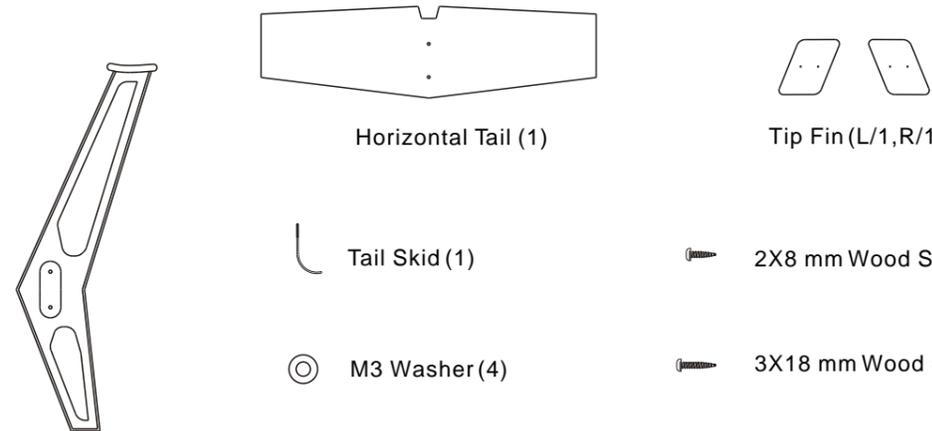
Front Window (L/1,R/1)

Rear Window (L/1,R/1)

Front Windshield (1)

- 2X5 mm Screw (16)
- ⊙ M2 Nut (16)
- 2X5 mm Wood Screw (28)

PV6053 Tail Set



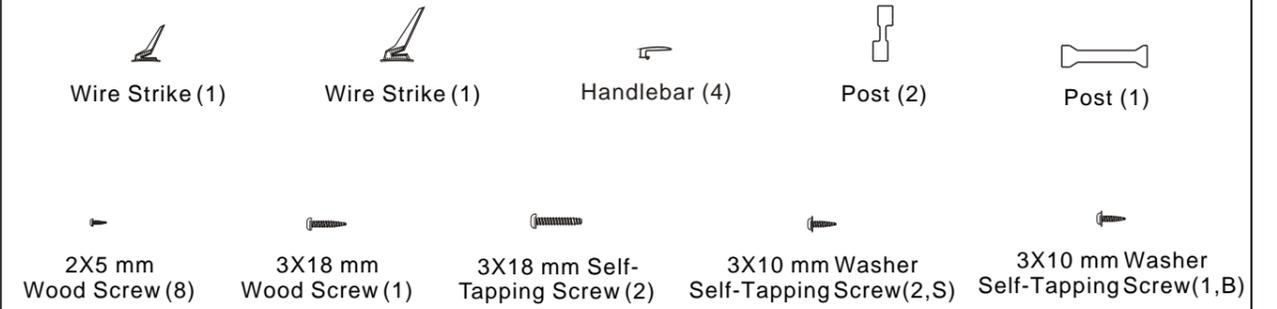
Horizontal Tail (1)

Tip Fin (L/1,R/1)

Vertical Fin (1)

- ⊏ Tail Skid (1)
- ⊙ M3 Washer (4)
- ⊏ M3 Locknut (2)
- 2X8 mm Wood Screw (4)
- 3X18 mm Wood Screw (2)
- 3X40 mm Socket Screw (2)

PV6054 Body Retainer



Wire Strike (1)

Wire Strike (1)

Handlebar (4)

Post (2)

Post (1)

2X5 mm Wood Screw (8)

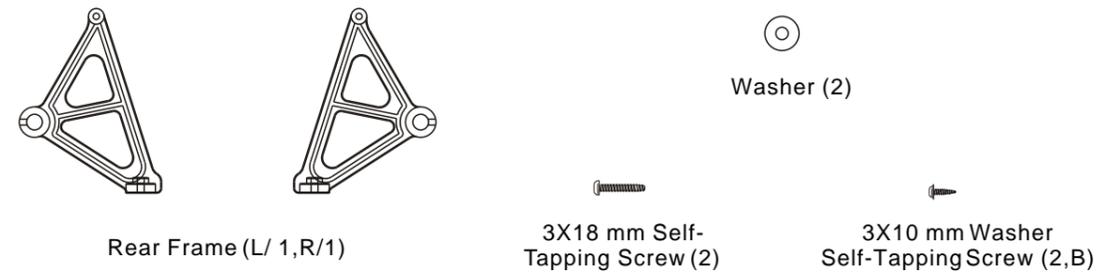
3X18 mm Wood Screw (1)

3X18 mm Self-Tapping Screw (2)

3X10 mm Washer Self-Tapping Screw (2,S)

3X10 mm Washer Self-Tapping Screw (1,B)

PV6022 Rear Frame Set



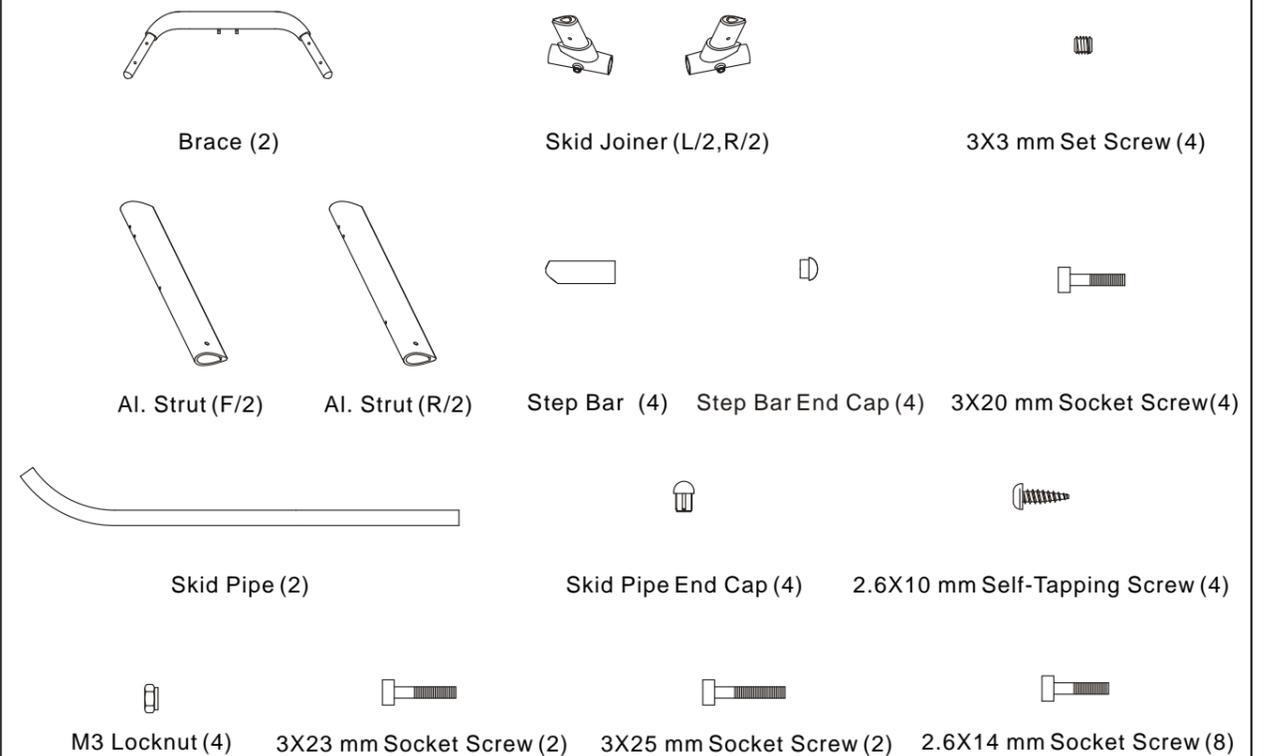
Rear Frame (L/ 1,R/1)

Washer (2)

3X18 mm Self-Tapping Screw (2)

3X10 mm Washer Self-Tapping Screw (2,B)

PV6055 Landing Skid



Brace (2)

Skid Joiner (L/2,R/2)

3X3 mm Set Screw (4)

Al. Strut (F/2)

Al. Strut (R/2)

Step Bar (4)

Step Bar End Cap (4)

3X20 mm Socket Screw (4)

Skid Pipe (2)

Skid Pipe End Cap (4)

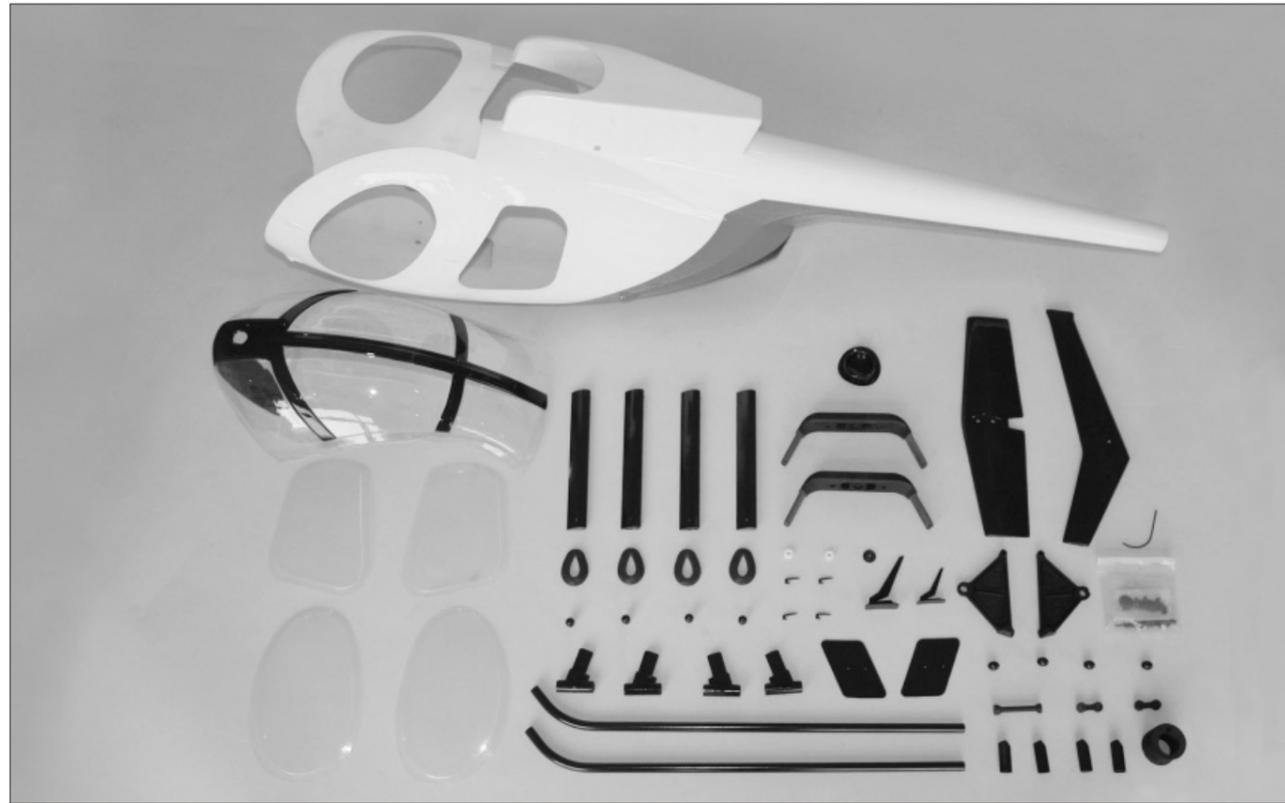
2.6X10 mm Self-Tapping Screw (4)

M3 Locknut (4)

3X23 mm Socket Screw (2)

3X25 mm Socket Screw (2)

2.6X14 mm Socket Screw (8)



Kit Contents

Fuselage

- Fuselage(1)
- Plastic Tube(1)
- Tail Boom Foam Retainer(1)
- Silicon Grommet(3)
- Exhaust(1)
- Silicon Strut Fairing(4)

Windshield

- Left Front Window(1)
- Right Front Window(1)
- Left Rear Window(1)
- Right Rear Window(1)
- Front Windshield(1)

Tail

- Horizontal Tail(1)
- Left Tip Fin(1)
- Right Tip Fin(1)
- Tail Skid(1)
- Vertical Fin(1)

Body Retainer

- Wire Strike(2)
- Handlebar(4)
- Post(3)

Landing Skid

- Brace(2)
- Al.Strut(F/2)
- Al.Strut(R/2)
- Skid Joiner(L/2)
- Skid Joiner(R/2)
- Step Bar(4)
- Skid Pipe(2)
- Skid Pipe End Cap(4)
- Step Bar End Cap(4)

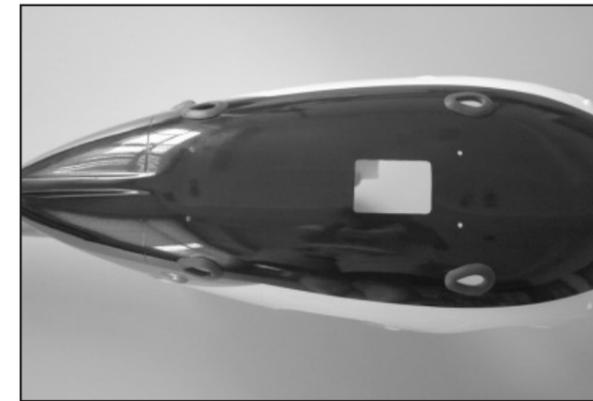
Rear Frame

- Rear Frame(L/1)
- Rear Frame(R/1)
- Washer(2)

Screw

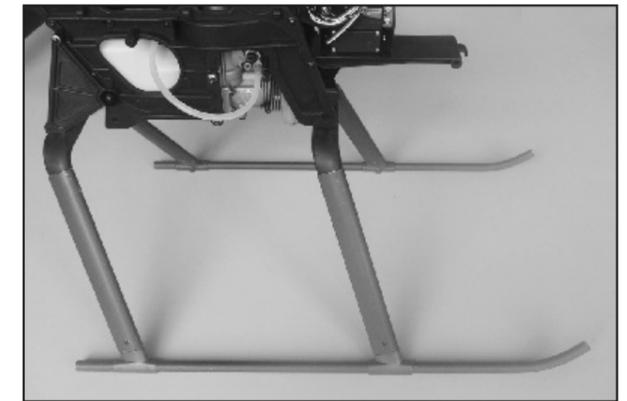
- M2 Nut(16)
- M3 Washer(4)
- M3 Locknut(6)
- 2X5mm Screw(16)
- 2X5mm Wood Screw(40)
- 2X8mm Wood Screw(4)
- 3X18mm Wood Screw(3)
- 3X3mm Set Screw(4)
- 2.6X10mm Self-Tapping Screw(4)
- 3X18mm Self-Tapping Screw (4)
- 2.6X14mm Socket Screw(8)
- 3X20mm Socket Screw(4)
- 3X23mm Socket Screw(2)
- 3X25mm Socket Screw(2)
- 3X40mm Socket Screw(2)
- 3X10mm Washer Self-Tapping Screw(3,B)
- 3X10mm Washer Self-Tapping Screw(2,S)

ASSEMBLY



1. Locate the molded marks for landing strut, screw holes and engine cooling openings at the bottom of the fuselage. Note these marks are only for reference of Raptors, shall you install it on other branded helicopters then you will have to find out the correct opening position for landing strut before you drill or trim the fuselage.

Enlarge the strut hole for about 2~3mm wider as the Silicon Fairing will be installed in the hole. Do not glue the Silicon Fairing at this step. It is very important to make sure that silicon fairing is loosened in the hole instead of tight.



3. Assemble the Landing Skid as shown. Temporarily install the Brace under the side frame. Adjust the Landing Skid as shown and make sure it sits on the table firmly. Secure the Joiner & Skid Pipe with the furnished 3x3mm Set Screw. Do not over-tighten the setscrews; just make sure the skid pipe will not rotate. Then secure the Joiner and the Aluminum Strut with 2.6x10mm Self-Tapping Screw. Next press the end cap on skid pipe.



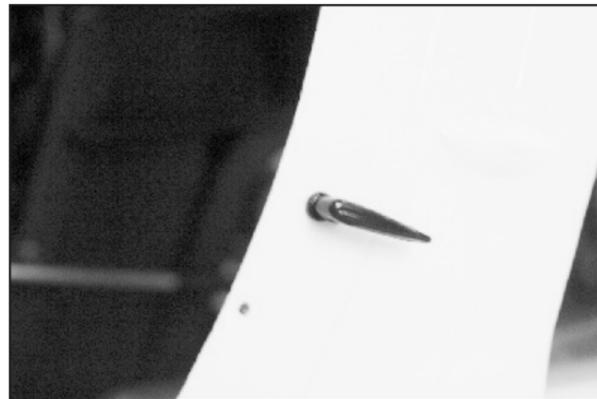
2. Put the scale fuselage aside for a moment and get your heli prepared. For Raptor owners, please remove the Landing Skid, Tail Fins, Boom Supports and Tail Rotor Assembly. Locate the Extended Rear Frames, which are specially designed for this MD fuselage. Secure the Extended Rear Frame in place with the screws and washers. (3x18mm self tapping screw for the top; 3x10mm washer self-tapping screw and big flat washer for the bottom).



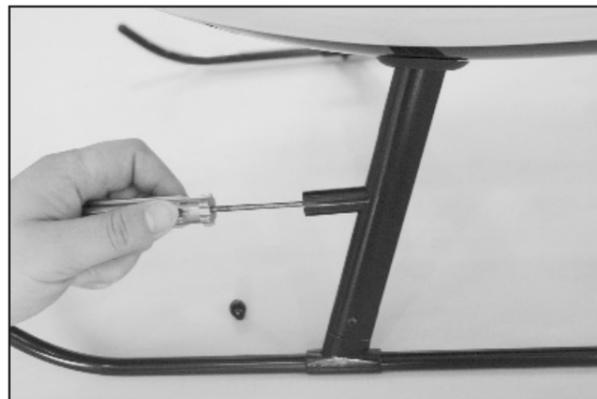
4. Remove the landing skid assembly from Heli. Remove the brace from the aluminum strut. Do not remove the strut and skid pipe as they are already adjusted and secured. Place the brace in place and install the strut and skid pipe onto the brace. You may apply Vaseline on Silicon Fairing to increase the lubrication for easier installation.



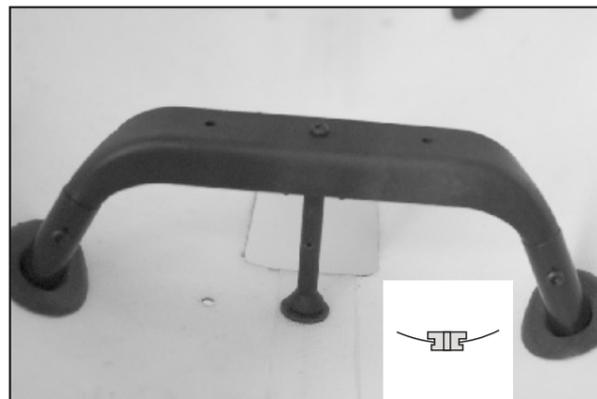
5. Secure the Aluminum Strut and Brace with 2.6x14mm Socket Screw. Hint: Install the left Aluminum Strut Assembly and Brace first. Pull the brace out and secure the socket screws then push it back and pull the right side out then install the right aluminum strut assembly.



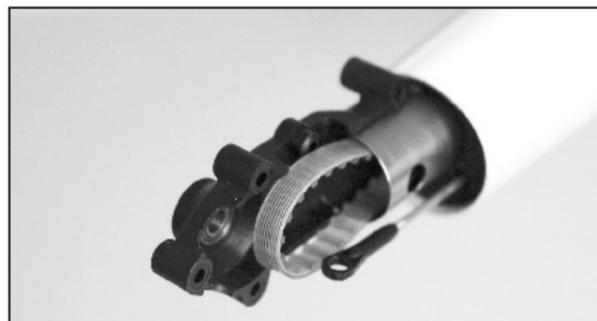
7. Drill two holes for handlebar one is 5/64" (2mm) and the other is 1/16" (1.5mm). Secure the handlebar in place with 2x5mm wood screw.



8. Secure step bar on the strut with 3x20mm socket screw. Apply Loctite and do not over-tighten the screw. Next press on the step bar end cap in place.



6. Install the lower post which is under the brace, drill 8mm hole and install the Silicon Grommet. Secure the post in place with 3x10mm washer self-tapping screw from bottom and 3x18mm self-tapping screw from top.



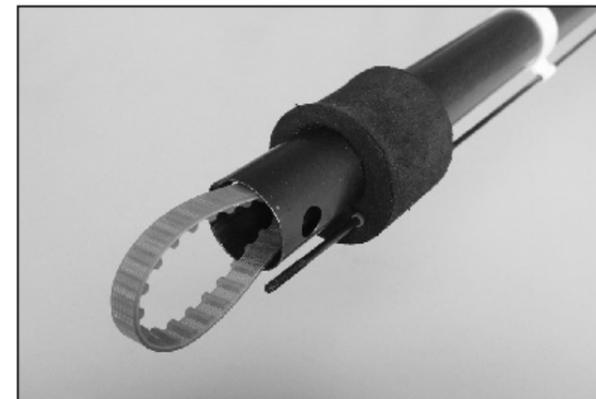
9. If you use Raptor 50 Titan Version then it does not need to trim anything but if you use on Raptor 50 V2 or old version then you might need to trim off the fuselage tail for about 7/8" (20mm). Remove the tail rotor assembly, landing brace and body retainer from Raptor then place the Raptor in the fuselage. Next install the tail rotor assembly in place and check if holes on the landing brace matches the side frame landing skid-mounting holes. If it cannot reach the holes then trim the tail until it is able to do so.



10. Remove the tail rotor assembly and proceed to extract the Raptor from fuselage. Replace the old post with the new plastic post mount with 3x18mm self-tapping screw. Place the Raptor into the fuselage again, the post should be located near a molded dot on fuselage.

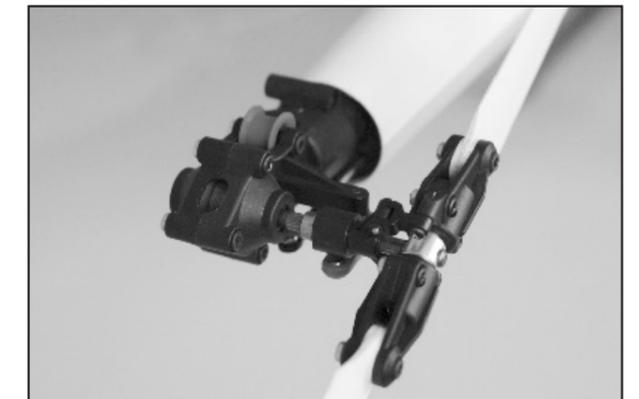


11. Drill the hole on the molded dot. Next enlarge the hole at about 8mm in diameter. Insert the Silicon Grommet on the hole. The smaller side faces outside.



12. Unthread the ball link and install the sponge on the tail boom section where the plastic tube for the sponge insertion. CA the tube in the sponge but be careful not to apply any glue inside the plastic tube and make sure the pushrod can move freely.

Thread the ball link back to pushrod at the original position. Glue the sponge on tail boom but make sure the sponge will tight-fit in the fuselage. If Raptor 50 Titan is used then the position of sponge is about 1-1/2" (40mm) to the end of boom. If Raptor 50 V2 is used then the position of sponge is about 1-1/8" (28mm) to the end of boom.



13. Insert the tail boom into the fuselage again and sit on the brace, make sure the sponge is tightly fit in the tail and secure the tail boom firmly. Check the pushrod movement is freely without binding and adjust it if necessary. Install the tail rotor assembly in place firmly and snap on the ball link.

Note: do not glue sponge in the fuselage in case you had to remove the heli from fuselage.



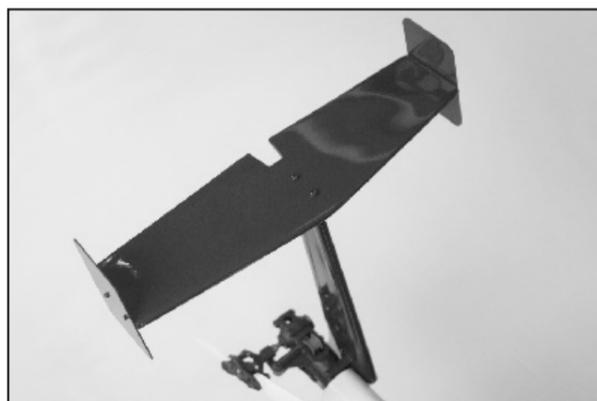
14. Secure the helicopter onto the landing brace with two 3x25mm Socket Screws, two 3 x23mm Socket Screws and four M3 Locknuts. Start from the rear brace then the front. Now you can CA the Silicon Landing Fairing in place.



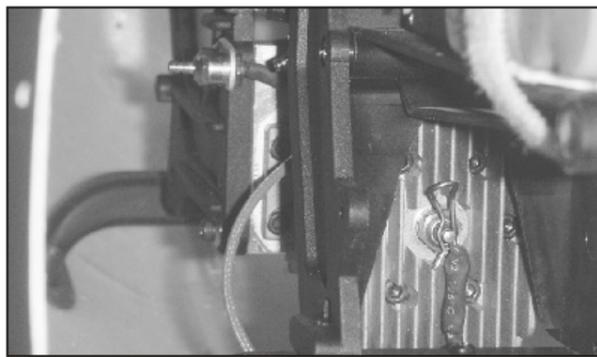
15. Secure the fuselage with 3x10mm washer self-tapping screw as shown.



16. Secure the Vertical Fin in place with two 3x40mm Socket Screws, two M3 Washers and two M3 Locknuts.



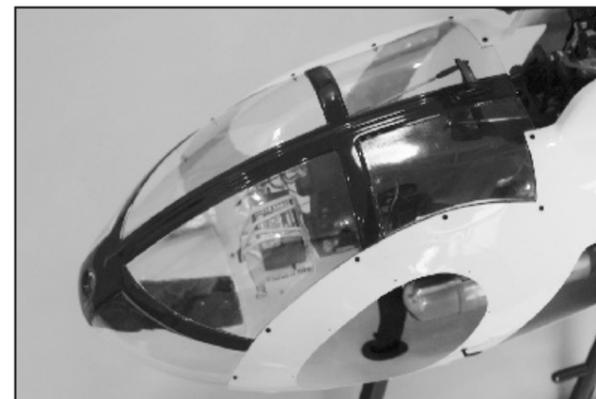
17. Trial fit the Horizontal Tail onto the vertical fin, note that flat surface should be facing up and the other side with the air foil is facing down. It might be necessary to file/sand the contact area on the vertical fin so that they make perfect contact. Apply epoxy at the contact area and make sure it is perpendicular after securing it with two 3x18mm Wood Screws and two M3 Washers. Secure two vertical Tip Fins onto horizontal tail with four 2x8mm Wood Screws and M2 washer.



18. You will have to install the remote glow plug adaptor (TTR3803) for easy glow ignition. Also install a diverter and drill an exit hole at the bottom of the fuselage or you may extend the diverter to fuselage exhaust vent to obtain a more scale-like look.



19. Install the wire strike on the front windshield. The big one is at the bottom and small one is on the top. Use 2x5mm wood screws to secure the strike in place.

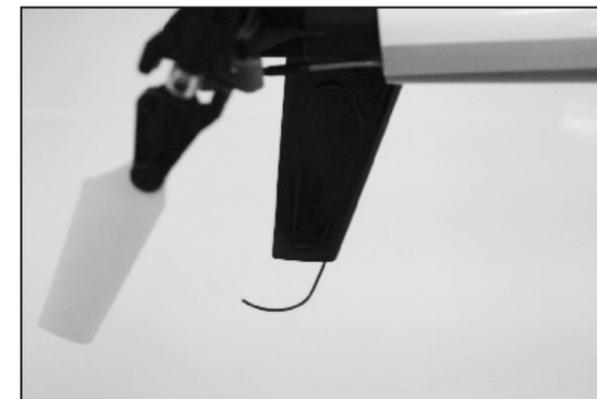


20. Install the front windshield with twenty 2x5mm screws and M2 nuts. Carefully make drill marks and drill 5/64" (2mm) holes then secure the front windshield in place. Apply thin instant CA adhesive for each screw and nut.

Trail fit the windows and you may need to trim the fuselage to get a better fit. Next make drill marks and drill 1/16" (1.5mm) holes then secure the front side window with eight 2x5mm wood screws. After you done the installation of the window then peel away the protecting film. You may skip the installation of rear side windows as it is easier for you in case of tuning engine or adjustment and it also gets better cooling.



21. Secure the exhaust vent in the place with four 2x5mm wood screws as shown.



22. Drill 1/16" (1.5mm) hole then apply epoxy or thick CA nextthread the tailskid at the bottom of vertical fin.



Test Flight

1. When hovering your MD, 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. It might be easy to get nose up in speed flight, please trim the elevator down when switching on the idle.