

INTRODUCTION



Congratulations on the purchase of our finest scale heli fuselage to date. This famous Hughes MD 530 (Military Defender), used as an antitank, multi-mission helicopter under extreme conditions. The venerable MD 530 has been replicated to exhibits this attack helicopters' sleek details. 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 MD is just like a real thing, hovering this MD 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 MD-530 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 finetune 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

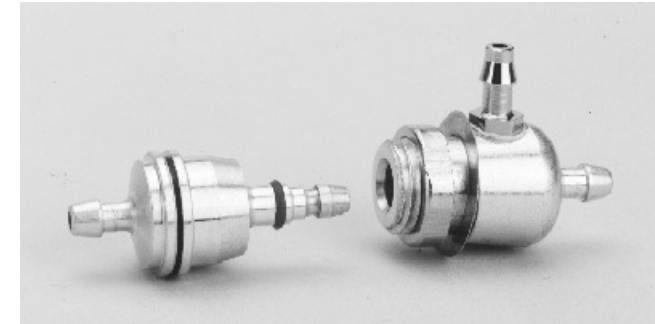
Adhesives:

- 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 MD-530 - 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

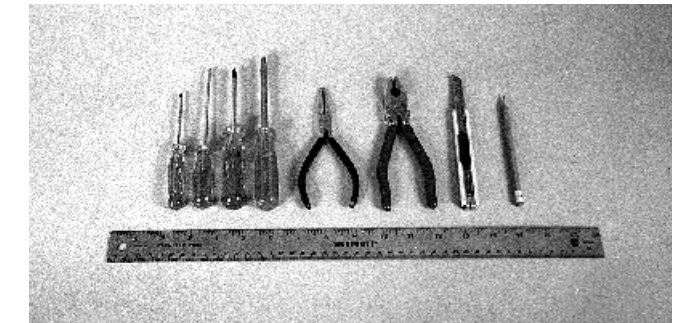


TTR1115 - Precision Fueler Valve

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

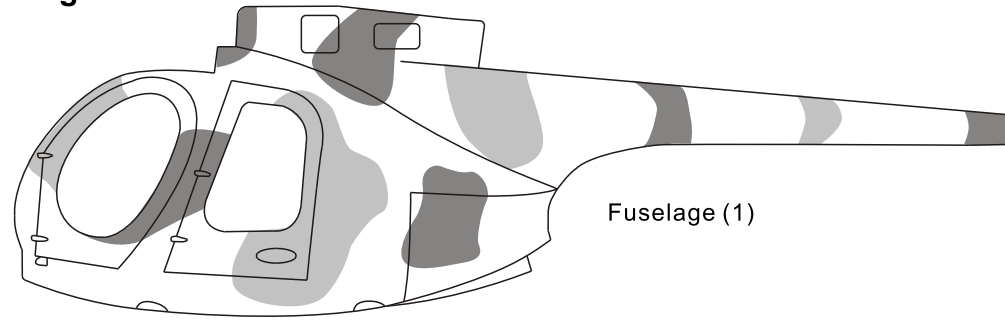


TTR4853 - Raptor 50 Titan

ADDENDUM

Thanks for the purchase of MD530 Camouflage Military version.
Please refer to this parts drawing in this addendum for correct after sale spare parts number.
The assembly step of military version is exactly same as MD530 , please follow the instruction manual for the assembly.

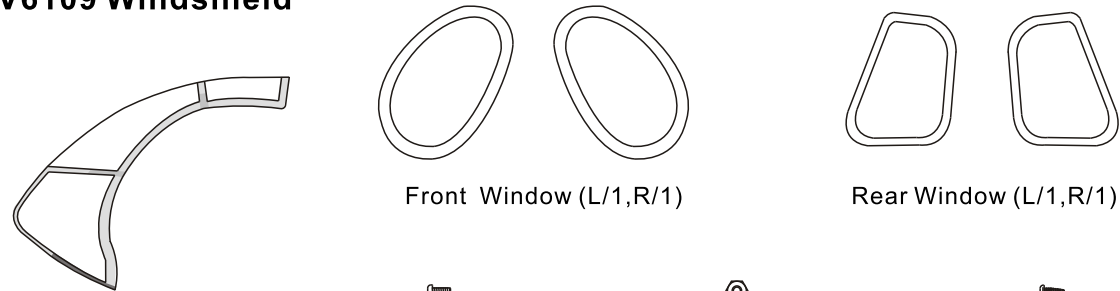
PV6108 Fuselage



Fuselage (1)

- Plastic Tube (1)
- Silicon Grommet (3)
- Exhaust Vent (1)
- Tail Boom Foam Retainer (1)
- 2X5 mm Wood Screw (6)
- Silicon Strut Fairing (4)

PV6109 Windshield

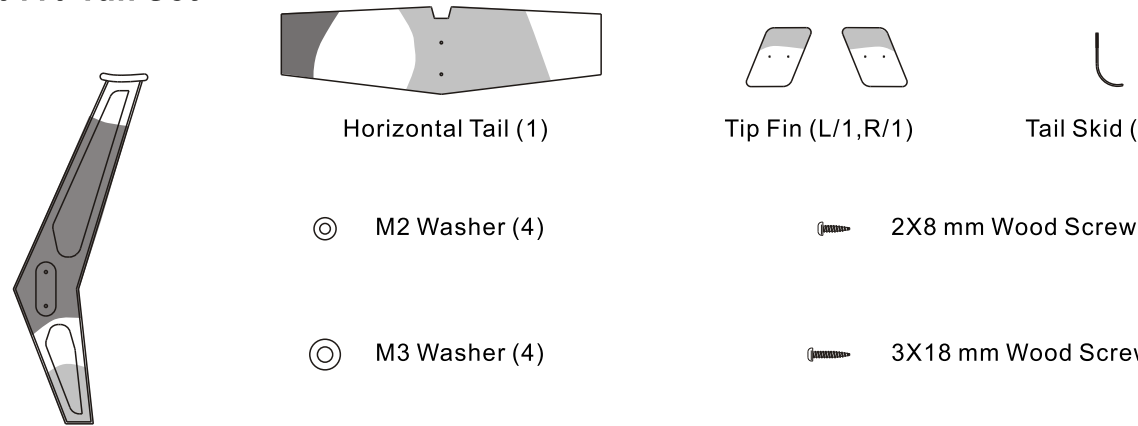


Front Window (L/1,R/1)

Rear Window (L/1,R/1)

- Front Windshield (1)
- 2X5 mm Screw (20)
- M 2 Nut (20)
- 2X5 mm Wood Screw (32)

PV6110 Tail Set



Horizontal Tail (1)

Tip Fin (L/1,R/1)

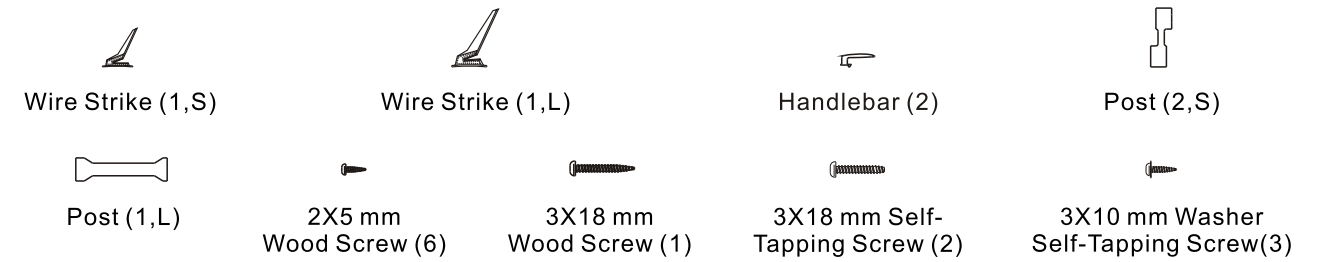
Tail Skid (1)

Vertical Fin (1)

- M2 Washer (4)
- 2X8 mm Wood Screw (4)
- M3 Washer (4)
- 3X18 mm Wood Screw (2)
- M3 Locknut (2)
- 3X40 mm Socket Screw (2)

PARTS DRAWINGS

PV6020 Body Retainer



Wire Strike (1,S)

Wire Strike (1,L)

Handlebar (2)

Post (2,S)

Post (1,L)

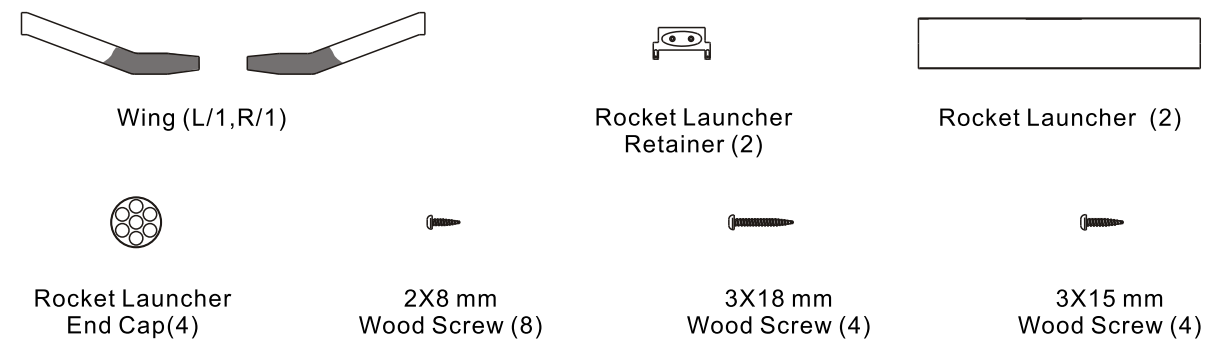
2X5 mm Wood Screw (6)

3X18 mm Wood Screw (1)

3X18 mm Self-Tapping Screw (2)

3X10 mm Washer Self-Tapping Screw(3)

PV6111 Rocket Launcher



Wing (L/1,R/1)

Rocket Launcher Retainer (2)

Rocket Launcher (2)

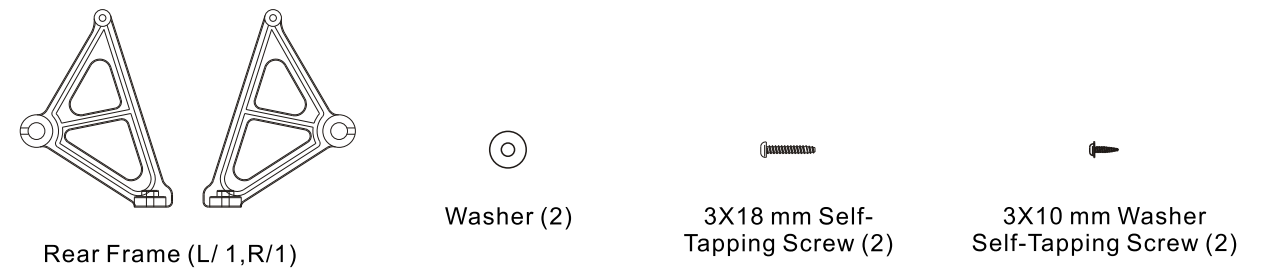
Rocket Launcher End Cap(4)

2X8 mm Wood Screw (8)

3X18 mm Wood Screw (4)

3X15 mm Wood Screw (4)

PV6022 Rear Frame Set



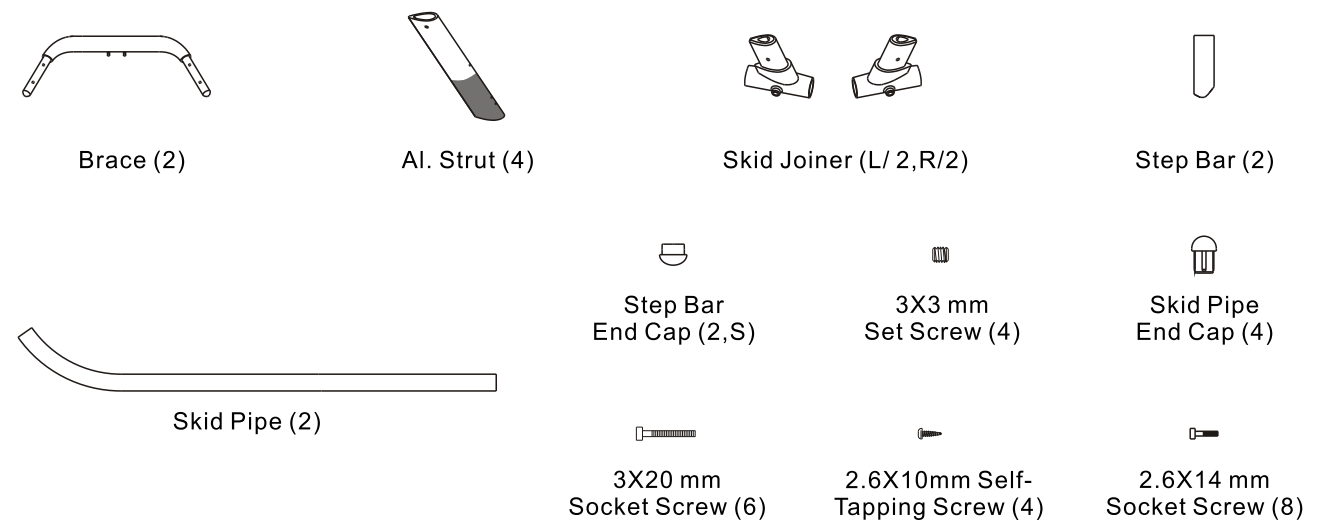
Rear Frame (L/ 1,R/1)

Washer (2)

3X18 mm Self-Tapping Screw (2)

3X10 mm Washer Self-Tapping Screw (2)

PV6112 Landing Skid



Brace (2)

Al. Strut (4)

Skid Joiner (L/ 2,R/2)

Step Bar (2)

Skid Pipe (2)

Step Bar End Cap (2,S)

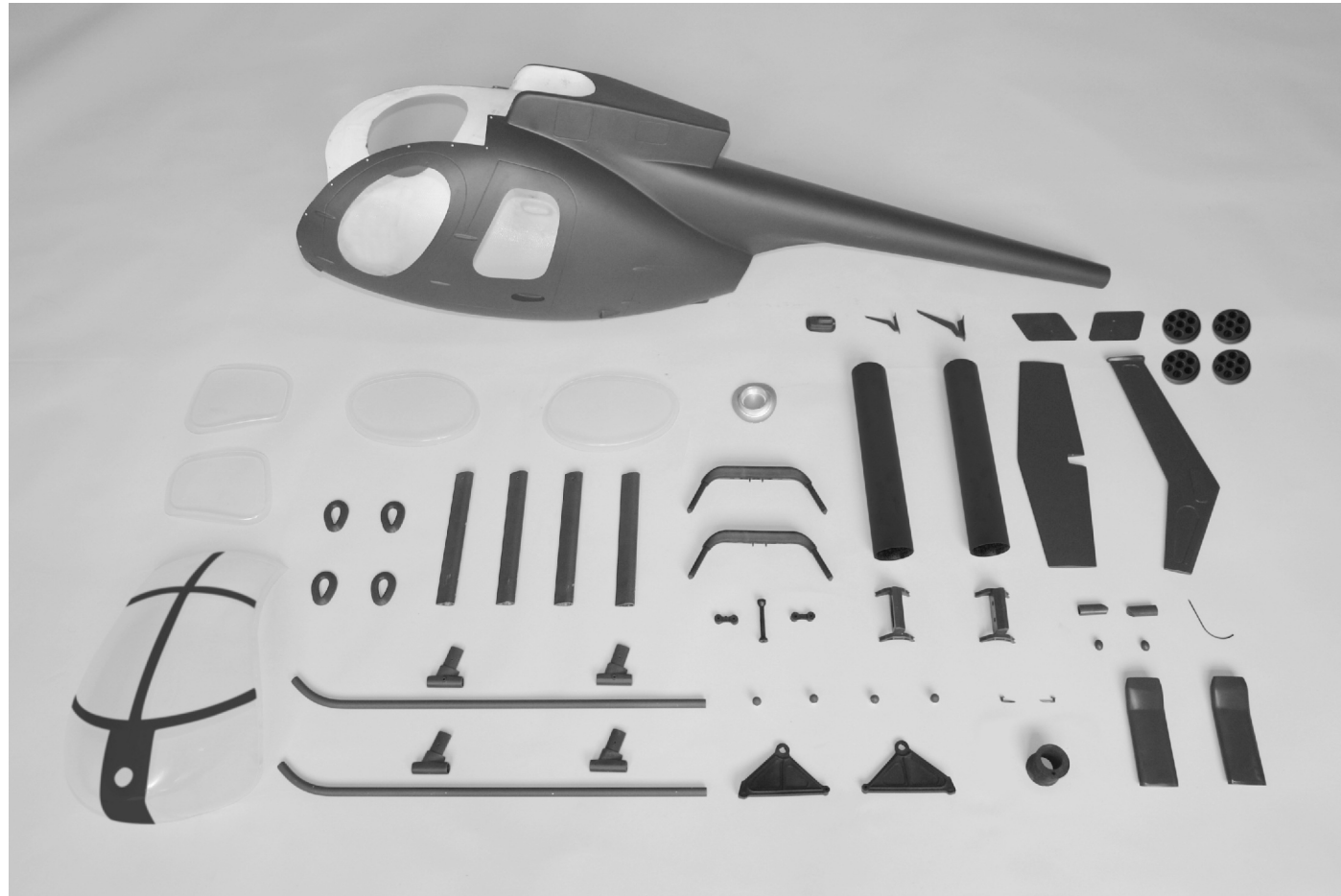
3X3 mm Set Screw (4)

Skid Pipe End Cap (4)

3X20 mm Socket Screw (6)

2.6X10mm Self-Tapping Screw (4)

2.6X14 mm Socket Screw (8)



Kit Contents

Fuselage

- Fuselage(1)
- Plastic Tube(1)
- Tall Boom Foam Retainer(S,1)
- Silicon Grommet(3)
- Exhaust(1)
- Decoration(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)
- Tip Fin(2)
- Tail Skid(1)
- Vertical Fin(1)

Body Retainer

- Wire Strike(1,S)
- Wire Strike(1,L)
- Handlebar(2)
- Post(2,S)
- Post(1,L)

Rocket Launcher

- Wing(L,1)
- Wing(R,1)
- Rocket Launcher Retainer(2)
- Rocket Launcher(2)
- Rocket Launcher Vent(4)

Landing Skid

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

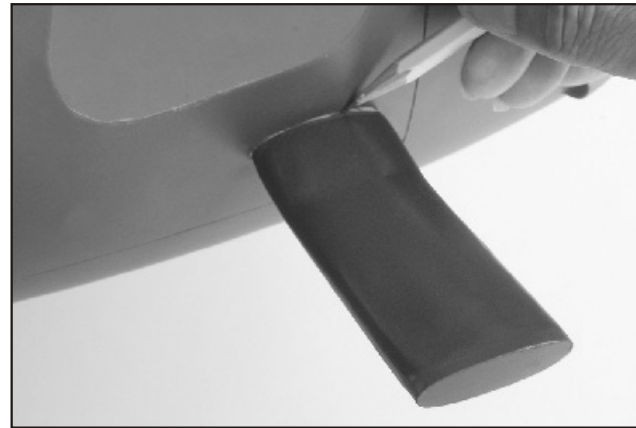
Rear Frame

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

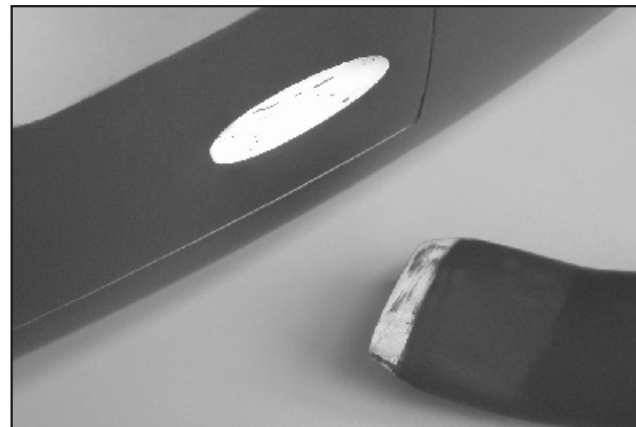
Screw

- M2 Nut(20)
- M2 Washer(4)
- M3 Washer(4)
- M3 Locknut(2)
- 2X5mm Screw(20)
- 2X5mm Wood Screw(44)
- 2X8mm Wood Screw(12)
- 3X15mm Wood Screw(4)
- 3X18mm Wood Screw(7)
- 3X3mm Set Screw(4)
- 2.6X10mm Self-Tapping Screw(4)
- 3X18 mm Self-Tapping Screw (4)
- 2.6X14mm Socket Screw(8)
- 3X20mm Socket Screw(6)
- 3X40mm Socket Screw(2)
- 3X10mm Washer Self-Tapping Screw(5)

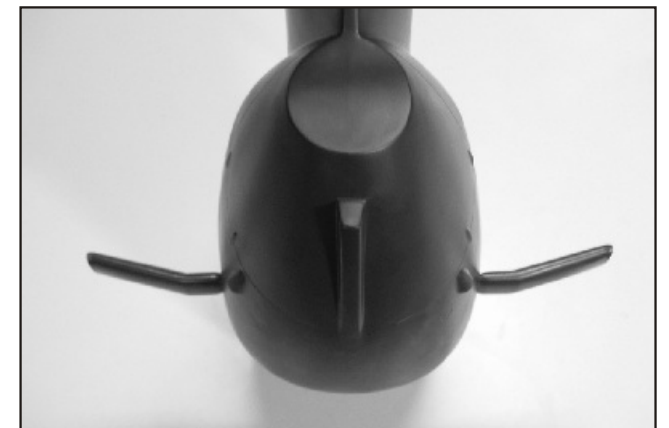
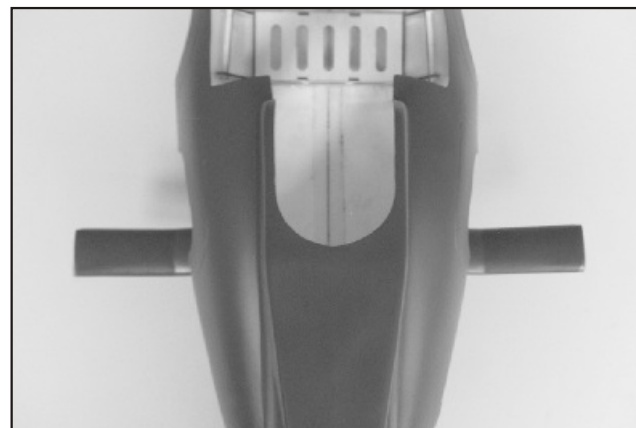
ASSEMBLY



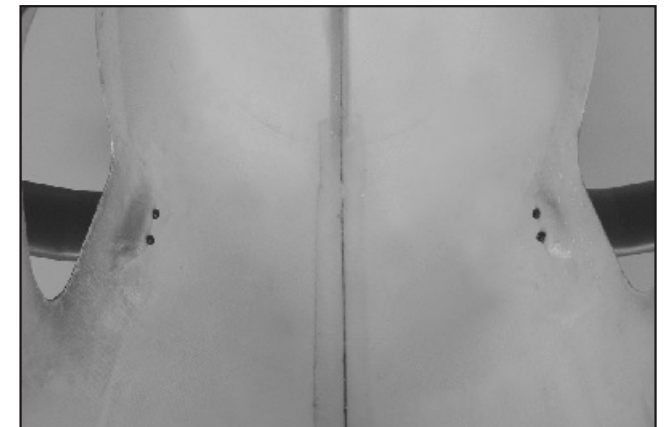
1. Note the orientation of the rocket launcher wing and trail fit in the place on fuselage. Ascertain the two wings are at same dihedral angle, adjust it until you obtain a satisfactory result, then use pencil to make marks on the wing at both sides as guidelines.



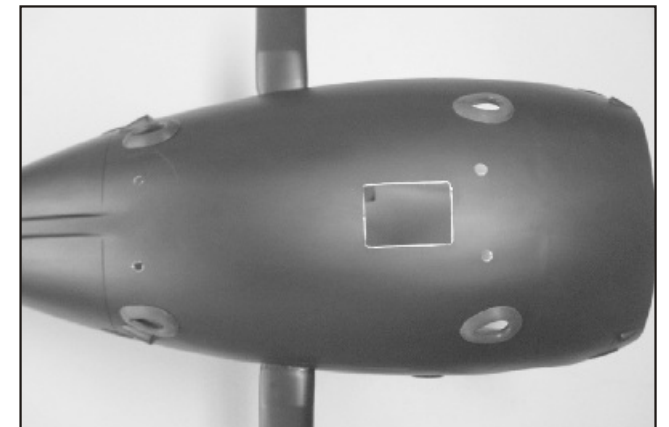
2. Remove the wing to sand away the paint at the glue area with 150 grid sand paper to enhance the adhesion. Remove the paint in the wing mount by scratching with a hobby knife inside the well.



3. Epoxy two wings in the place, either wipe off the excess epoxy or use masking tape to tape the guideline to keep the wing root clean after the masking tape removal. Make sure the two wings are at same dihedral angles. If you see from the top the wings should be in line with each other or the rocket launcher will not be straight forward.

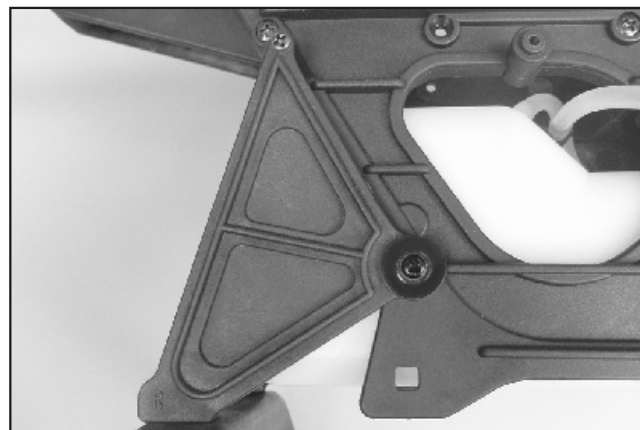


4. Next drill two 5/64" (2mm) holes through the wing mount to the wing from the inside of the fuselage then secure the wing firmly with two 3x15mm Wood Screws at each side.

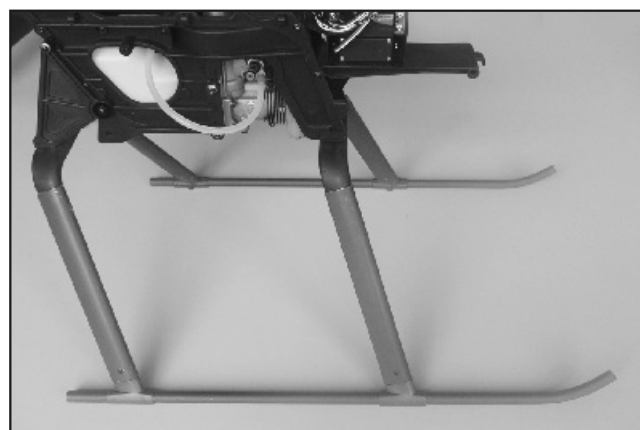


5. Locate the molded marks for landing strut, screw holes and engine cooling openings at the bottom of the fuselage. Note these marks are only for reference of Raptors, shall you install it on other branded helicopters then you will have to find out the correct opening position for landing strut before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

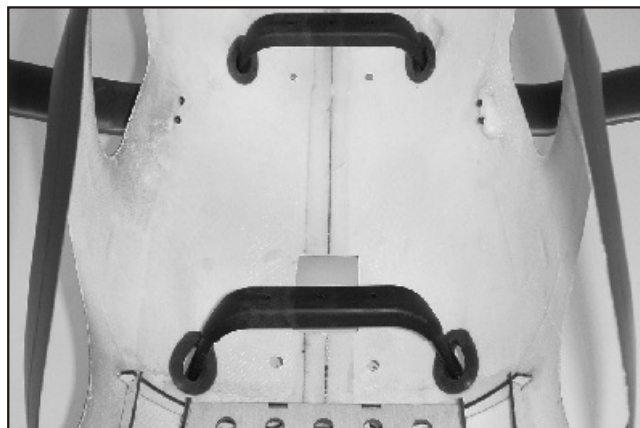
Note: It is recommended to enlarge the strut hole for about 2~3mm wider as the Silicon Fairing will be installed in the hole. Do not glue the Silicon Fairing at this step. It is very important to make sure that silicon fairing is loosened in the hole instead of tight.



6. Put the scale fuselage aside for a moment and get your heli prepared. For Raptor owners, please remove the Landing Skid, Muffler, 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; 3x 10mm washer self-tapping screw and big flatwasher for the bottom).



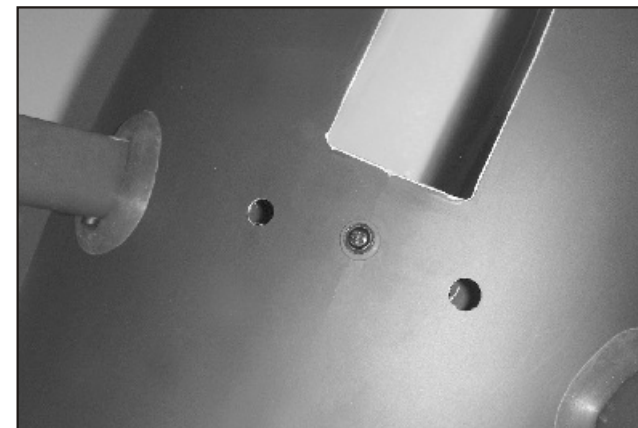
7. Assemble the Landing Skid as shown. Temporarily install the Brace under the side frame. Adjust the Landing Skid as shown and make sure it sits on the table firmly. Secure the Joiner & Skid Pipe with the furnished 3x3mm Set Screws. Do not over-tighten the setscrews; just make sure the skid pipe will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



8. 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.



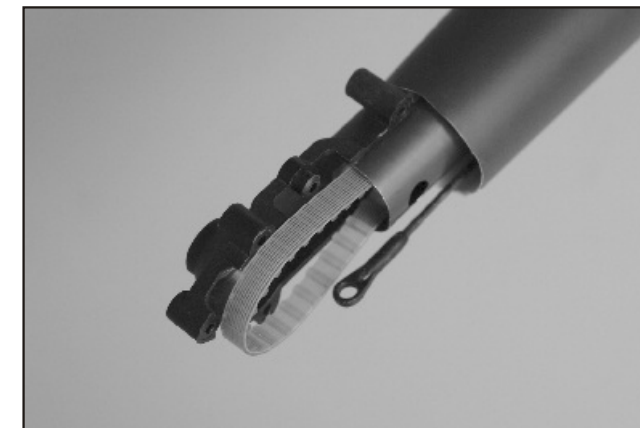
9. Secure the Aluminum Strut and Brace with 2.6x14mm Socket Screws. Hint: Install the left Aluminum Strut Assembly and Brace first. Pull the brace out and secure the socket screws then push it back and pull the right side out then install the right aluminum strut assembly.



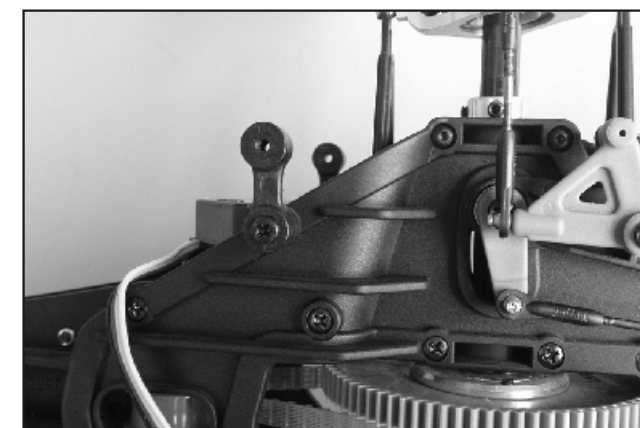
10. Install the lower post which is under the brace, drill 8mm hole and install the Silicon Grommet. Secure the post in place with 3x10 washer self-tapping screw from bottom and 3x18mm self-tapping screw from top.



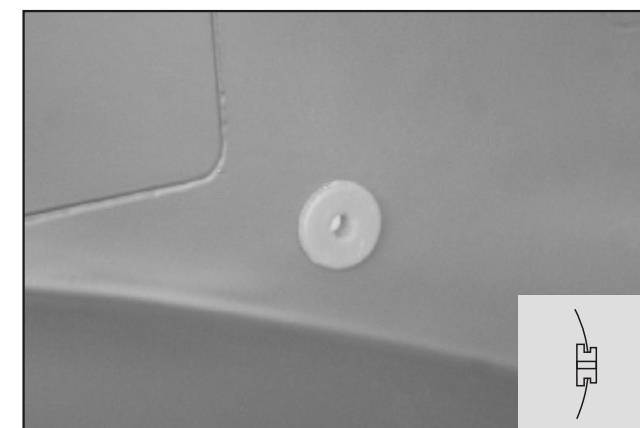
11. Drill two holes for handlebar one is 5/64" (2mm) and the other is 1/16" (1.5mm). Secure the handlebar in place with 2x5mm wood screw.



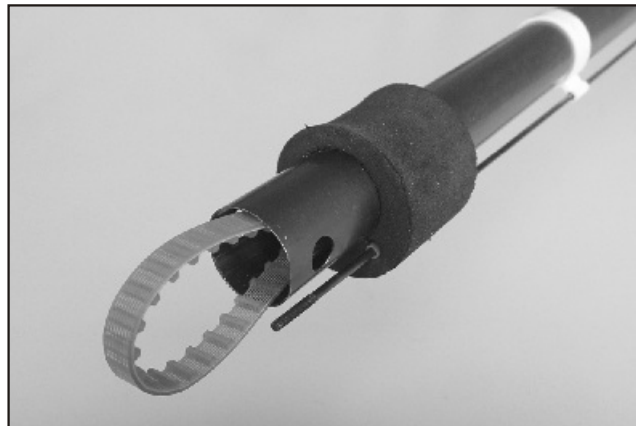
12. If you use Raptor 50 Titan Version then it does not need to trim anything but if you use on Raptor 50 V2 or old version then you might need to trim off the fuselage tail for about 7/8" (20mm). Remove the tail rotor assembly, landing brace and body retainer from Raptor then place the Raptor in the 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.



13. Remove the tail rotor assembly and proceed to extract the Raptor from fuselage. Replace the old post with the new plastic post mount with 3x18 self-tapping screw. Place the Raptor into the fuselage again, the post should be located near a molded dot on fuselage.



14. 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.



15. 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.

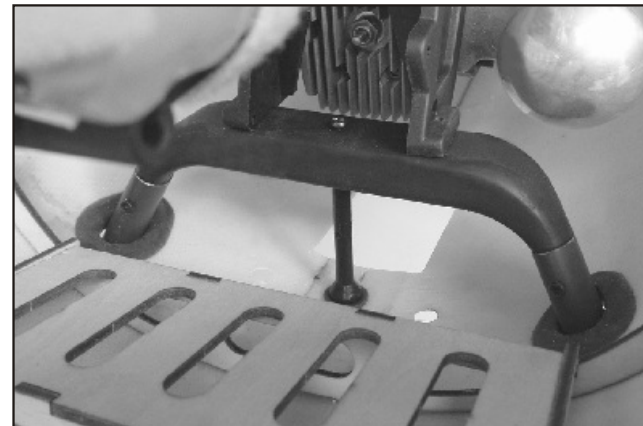
If Raptor 50 Titan is used then the position of sponge is about 1-1/2" (40mm) to the end of boom.

If Raptor 50 V2 is used then the position of sponge is about 1-1/8"(28mm) to the end of boom.



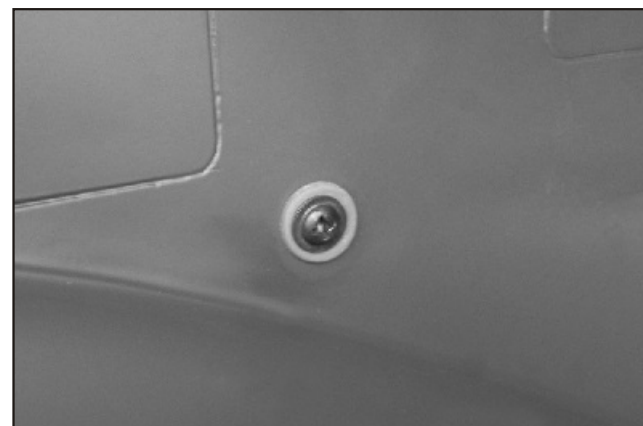
16. Insert the tail boom into the fuselage again and sit on the brace, make sure the sponge is tightly fit in the tail and secure the tail boom firmly. Check the pushrod movement is freely without binding and adjust it if necessary. Install the tail rotor assembly in place firmly and snap on the ball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

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



17. Secure the helicopter onto the landing brace with four 3x20mm Socket Screws. Start from the rear brace then the front.

Now you can CA the Silicon Landing Fairing in place.



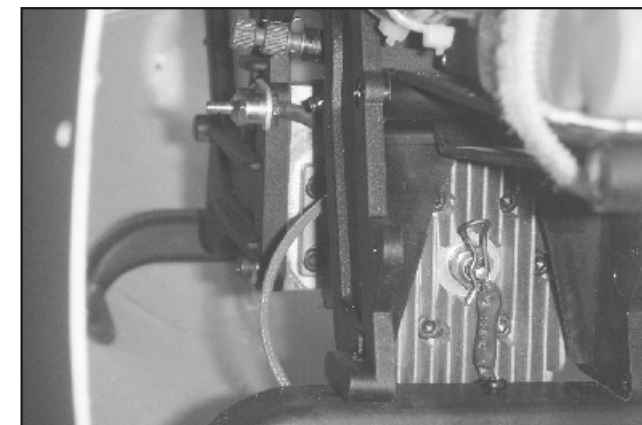
18. Secure the fuselage with 3x10mm washer self-tapping screw as shown.



19. Secure the Vertical Fin in place with two 3x40 Socket Screws, two M3 Washers and two M3 Locknuts.



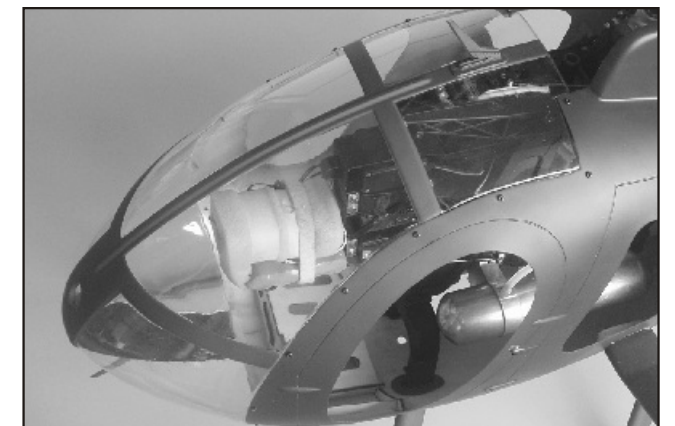
20. Trial fit the Horizontal Tail onto the vertical fin, note that flat surface should be facing up and the other side with the air foil facing down. It might be necessary to file/sand the contact area on the vertical fin so that they make perfect contact. Apply epoxy at the contact area and make sure 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.



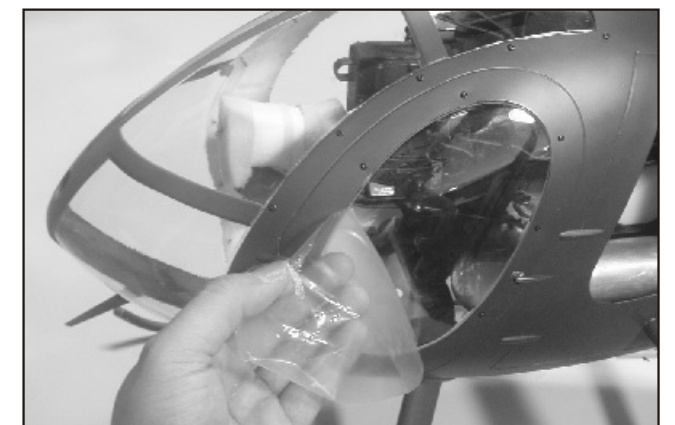
21. You will have to install the remote glow plug adaptor (TTR3803). for easy glow ignition. Also install a diverter and drill an exit hole at the bottom of the fuselage or you may extend the diverter to fuselage exhaust vent to obtain a more scale-like look.



22. 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.



23. 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 Loctite for each screw and nut.

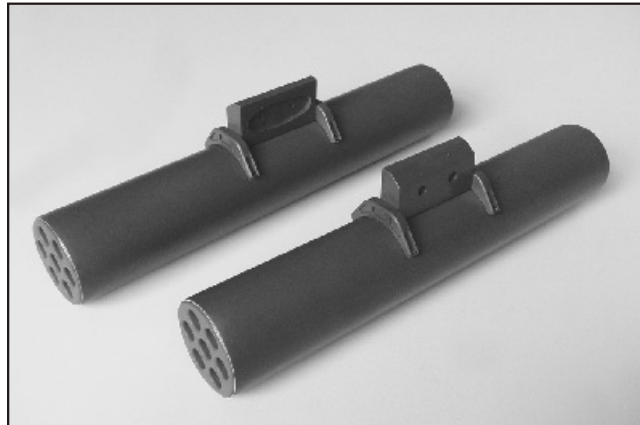


24. Trial fit the windows and you may need to trim the fuselage to get a better fit. Next make drill marks and drill 1/16"(1.5mm) holes then secure the front side window with eight 2x5mm wood screws. After you done the installation of the window then peel away the protecting film.

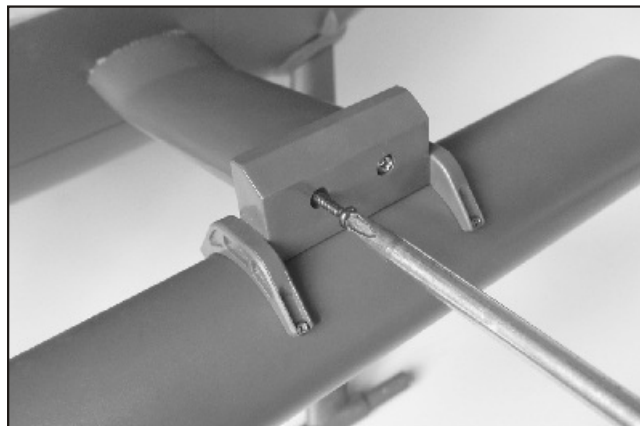
You may skip the installation of rear side windows as it is easier for you in case of tuning engine or adjustment and it also gets better cooling.



25. Locate the vacuum formed decoration and place it at the center line of the tail section. Drill two 1/16" (1.5mm) mounting holes and secure it with two 2x5mm Wood Screws.



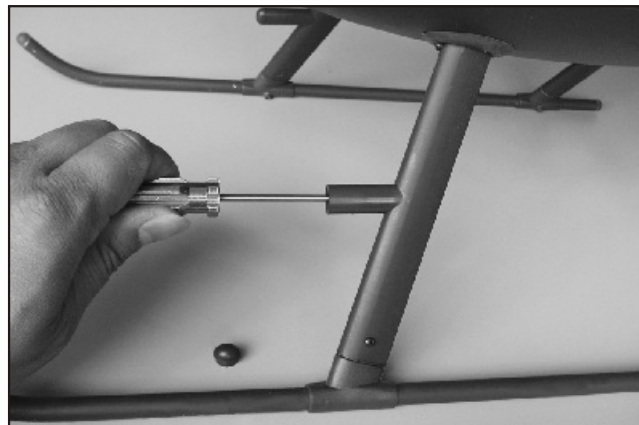
26. Locate the Rocket Launcher Retainer and center it on the Launcher. Make marks and drill 1/16" (1.5mm) holes then secure it with four 2x8mm Wood Screws. Do the same procedure on the other launcher but note the orientation of the other retainer. Glue the vents on the launcher.



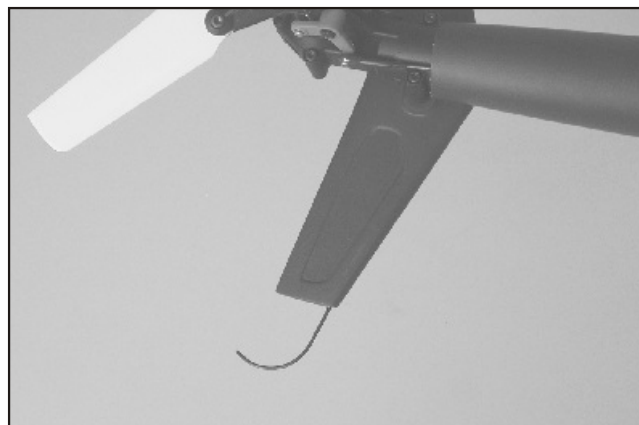
27. Use the retainer hole as the guide to make a drill mark on the wing. Drill 5/64" (2mm) holes. Next apply epoxy at the contact area and secure the retainer on the wing with two 3x18mm Wood Screws. Do the same procedure on the other launcher and make sure two launchers are parallel and aim to front.



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



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



30. Drill 5/64" (2mm) hole then apply epoxy or thick CA next thread the tail skid at the bottom of vertical fin.

Test Flight

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



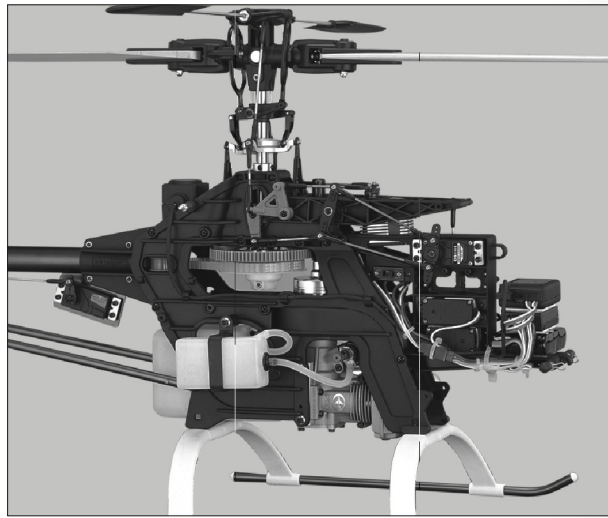
MD530





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.

