

NIGHT TUNDRA



INSTRUCTION MANUAL

DURAFLY NIGHT TUNDRA 1300MM PLUG AND FLY



Please read this manual carefully before operating this plane.

WARNING:

Read this instruction manual fully so as to become completely familiar with the features of the product before operating. Failure to operate this product correctly could result in damage to the product, personal property and cause serious injury. This is a sophisticated hobby product and is NOT a toy. It must always be operated with caution, common sense and some basic mechanical ability. This manual provides instructions on the assembly, safe operation and maintenance of this hobby product. It is highly recommended that you read and follow fully the instructions and warnings stated in this manual including safety, assembly, set-up and flying guidelines in order to operate this product correctly and avoid damage or serious injury.

SAFETY PRECAUTIONS:

As the user of this product you and you alone are responsible for operating it in a manner that does not endanger yourself and others around you or result in damage to the product or property of others. This product is operated via a radio controlled system that in some cases can be subject to interference from sources outside of your control. Interference may result in a momentary loss of control so it is always recommended that this product be used in a suitable open outdoors space.

- This is a radio controlled flying model and as such must always be flown with caution, this is NOT a toy.
- Always exercise great caution when using the recommended battery to power this product. For full safety notes and operating procedures please read the information provided by your battery supplier.
- Take great care when connecting/disconnecting the battery. Once again see your battery suppliers information for the full safety procedures.
- Never power up the model in a confined space and always keep the propeller clear of obstructions, clothing and parts of your body.
- This product is not a toy, children must be accompanied by an adult at all times when operating this product.
- Only fly this model in an open area away from crowds, people, buildings, trees, power lines, roads, airports and other obstructions.
- Always put safety first when operating this model and consider the warnings stated above.
- The supplier/manufacturer accepts no responsibility for damage or injury caused through the use of this product. A reminder that it is not suitable for children under the age of 14. THIS IS NOT A TOY.

CONTENTS:

Introduction	1
Specifications	1
Content	2
Required To Complete Model	2
Optional Accessories	2
Assembly (PNF)	3-7
Setting Up Your Model	8-10
Tundra Options	11
Floats	11-12
FPV Canopy	13
Tow line mounting point	14
Optional Candy Dropper	14
Optional Skis	15
Model Flying Precautions	16
Pre-flight Checks	16
Flying The Night Tundra	17
Tundra Tips	18
Spare Parts Listing	19
Trouble Shooting	20
Contact	21
Notes	21-24

INTRODUCTION:

Thank you for purchasing the Duraflly Night Tundra, the Night Tundra follows in the footsteps of the popular Tundra series. No longer do you have to finish flying when the sun sets, with the incredible light system on the Night Tundra you can just carry on into the twilight and beyond. The Night Tundra retains the no limits flying characteristics of all the others in the Tundra series. Whether it's flying from rough bush fields, water, snow or sand, or FPV, aerobatics, glider towing, candy dropping or just good old fashioned super STOL slow flying, the Night Tundra takes it all with ease. Its light weight yet rugged construction, powerful brushless set-up and perfectly harmonized design gives you instantly a feeling of confidence on the sticks as quickly as it puts a smile on your face.

Simply put the Night Tundra is an immense amount of fun to fly, and you will be flying very quickly due to the very straightforward and speedy assembly process. With either the included floats, tow mounting point and FPV canopy or with optional skis and candy dropper, how you put your Night Tundra to work, is completely up to you.

Take on the very best mother nature can throw at you either daytime or night time and still come up smiling. With the Night Tundra, there are literally no limits!



SPECIFICATIONS:

- Wing span: 1300mm(51.7")
- Length: 920mm (47.2")
- Flying weight: 1150g (40.6oz)
- Motor: 3636 950kV Brushless outrunner
- Controls: 6-Channels (Throttle, Ailerons, Elevator, Rudder, Flaps, and Lights)
- Battery: 1800-2200mAh 11.1V 3S LiPo(30C min)
- Propeller: Duraflly Carbon 12"x6"
- ESC: Aerostar 40Amp Brushless ESC
- Radio system: Minimum 6-channel Rx and Tx required

CONTENT:



1. Main wing halves
2. Fuselage
3. Horizontal stabilizer
4. Control and mounting accessories
5. Wing, landing gear & float struts
6. Wing and tail spar
7. Main wheels
8. Carbon propeller
9. Floats

REQUIRED TO COMPLETE MODEL:

In its 'Plug n Fly' format the Night Tundra will still require some additional accessories to get it 'flight ready'. Durafly recommends the products below for optimum performance and great value. All are available at Hobbyking.com



OrangeRx Tx6i 6ch 2.4GHz
DSMX Compatible
Int'l Version SKU: 9171001328-0
EU Version SKU: 91710001330-0



OrangeRx R620X V3 6ch
2.4GHz Receiver DSMX
Compatible
SKU: 9171001391-0



Turnigy Nano-Tech 1800mAh
3S 65~130C Lipo Pack
SKU: N1800.3S.65



Turnigy Graphene
2200mAh 3S 45C LiPo
Pack W/ XT60
SKU: 9067000134-0

OPTIONAL ACCESSORIES



ZIPPY Compact 2200mAh 3s
60c Lipo Pack
SKU: 9067000029-0



Turnigy 2200mAh 3S 40C
LiPo Pack
SKU: T2200.3S.40



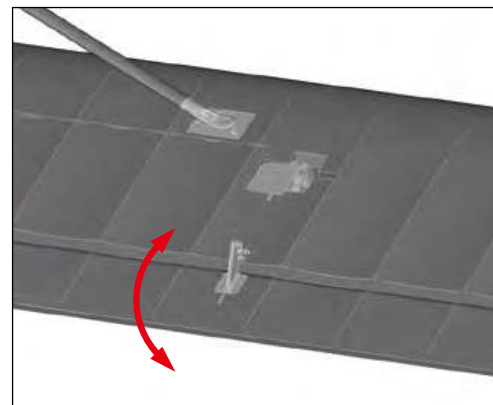
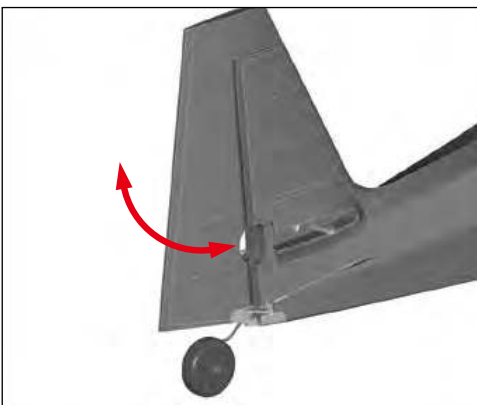
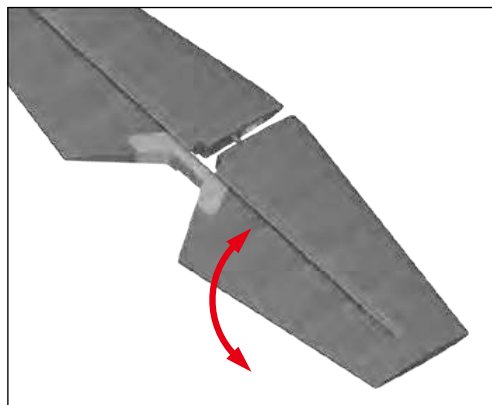
Hobbyking Candy Dropper
Part No. 9499000351-0



DuraFly Skymule Ski Set:
Part No. 9310000176-0

ASSEMBLY (PNF)

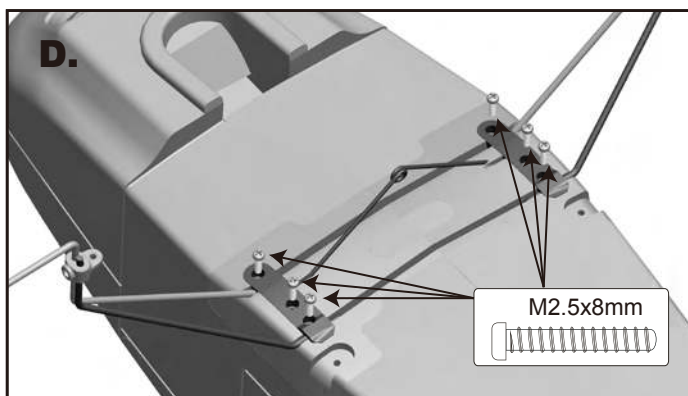
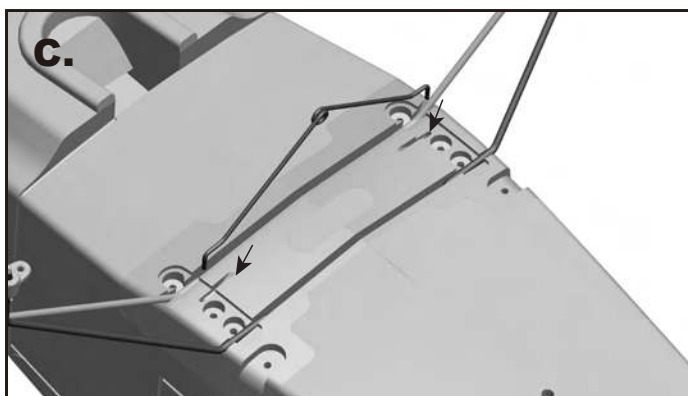
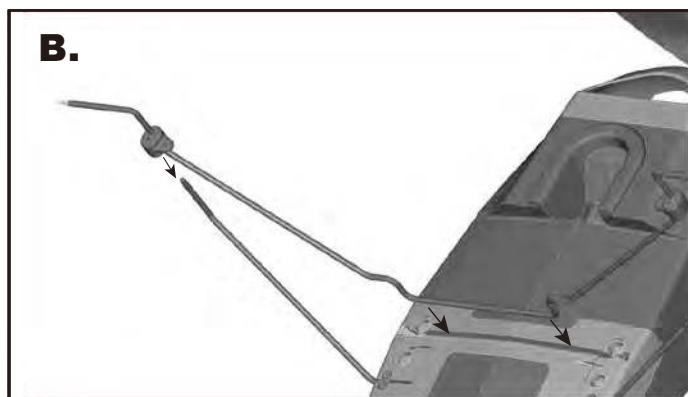
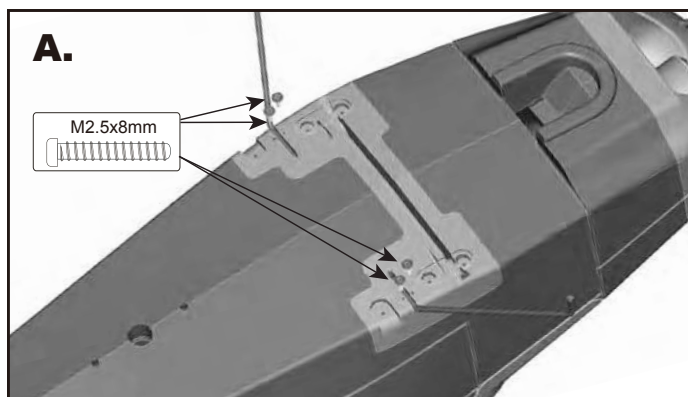
1. Out of the box your Night Tundra comes with reinforced foam hinges. However before assembly can begin, each hinge line must be flexed back and forth 5-6 times to reduce tension and load on the servo. Do this for all control surfaces before continuing.



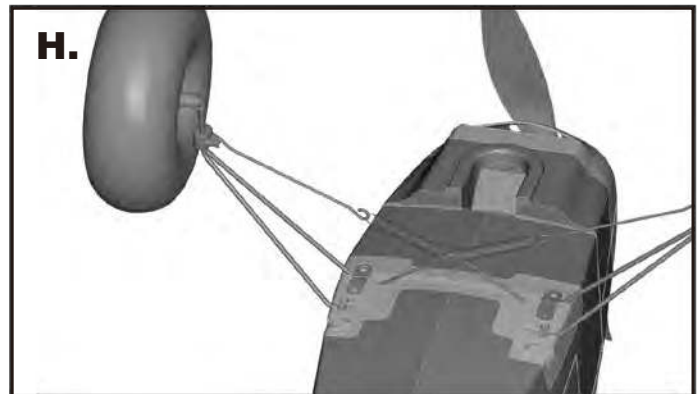
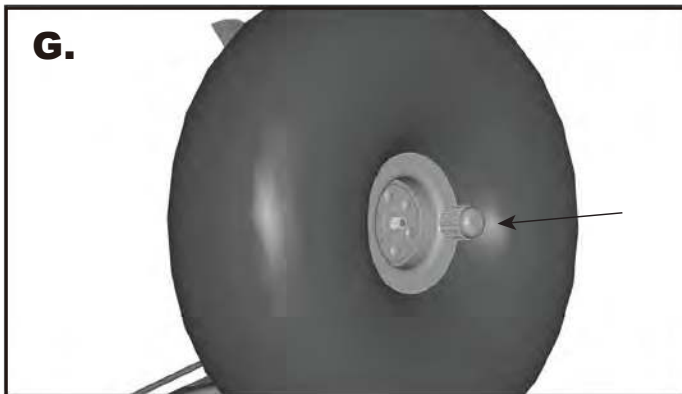
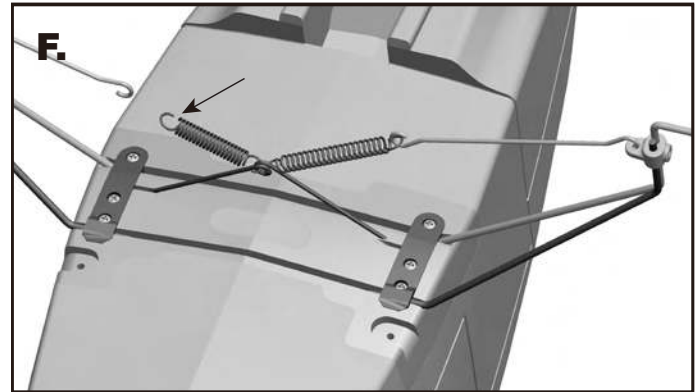
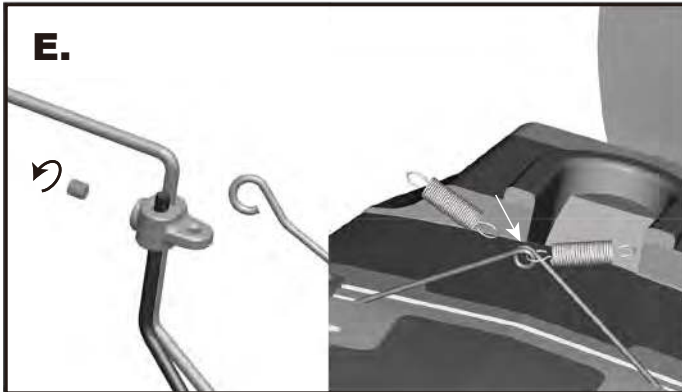
2A. To mount the undercarriage to the fuselage, start by inserting and securing the two rear braces with the supplied M2.5x8mm screws (A). Now insert the main gear wire into the fuselage slot and slide the plastic brace keepers over the rear braces (B) to bring these two parts together. Insert the spring support wire between the main gear wire (C). Using the supplied M2.5x8mm screws secure the main gear and spring support wire in place with the plastic undercarriage straps (D).

Notes:

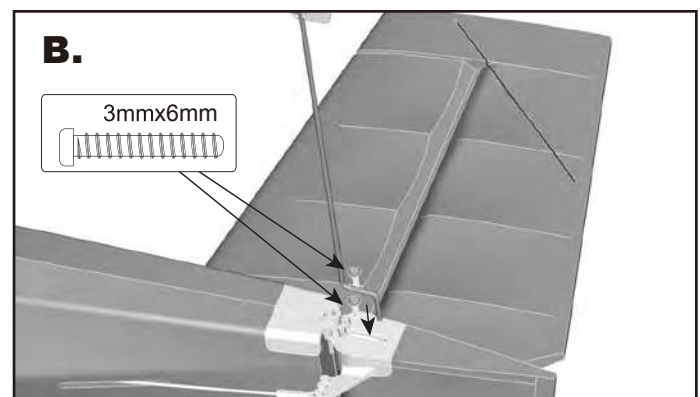
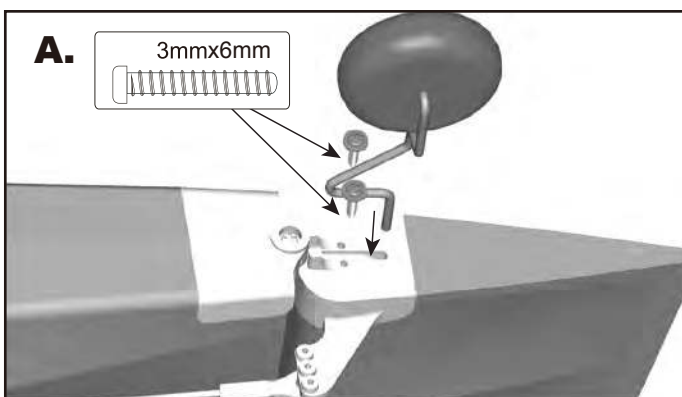
- Ensure the main gear rakes forward at stage B.
- Note left (L) and right (R) marked plastic straps and install accordingly during stage D.



2B. Hook one end of the supplied coil springs through the center ring of the spring support wire (E), and the wire cross braces through the other end (F). Then hook the wire cross braces through the plastic brace keeper (E) to complete the sprung cross bracing assembly (F). Now slide the main wheels onto the axle and secure in place with the plastic grip nut (G). The assembly of the undercarriage is now complete (H).

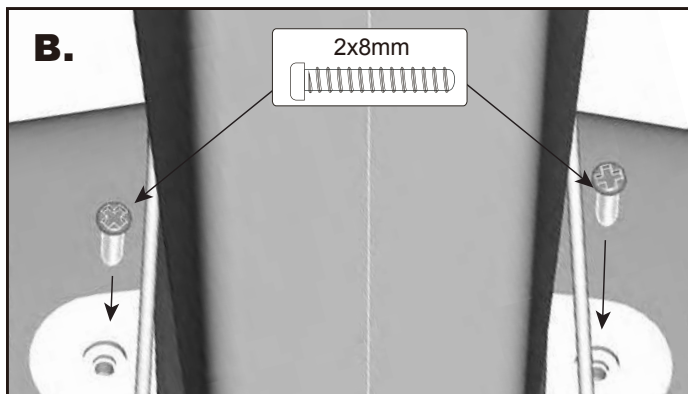
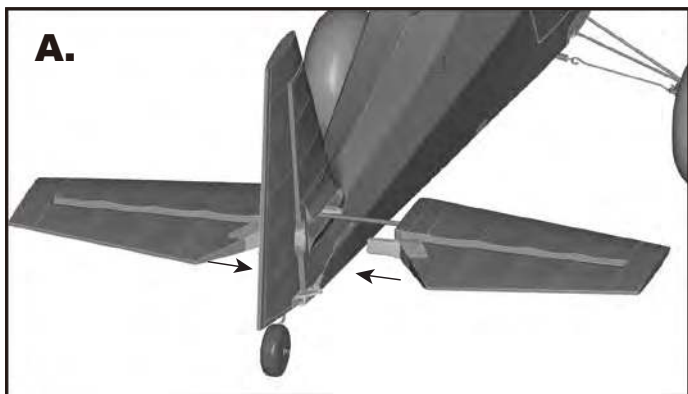


3. Insert the tail wheel assembly into the plastic slot on the bottom of the rudder and secure with two 3mmx6mm screws (A). The same method is used when mounting the water rudder (B).

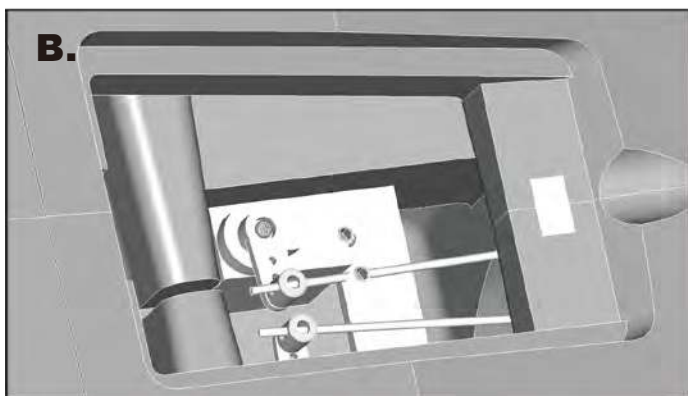


4. Insert one half of the carbon tail spar into one of the horizontal tail pieces before sliding this half into the tail slot on the fuselage. Now install the remaining tail piece (A). Secure both halves in place with the supplied M2.3x6mm screws and the elevator joiner with the single M2x8mm screw (B). This installation is self aligning, but do double check to ensure equal alignment to the vertical tail and wing.

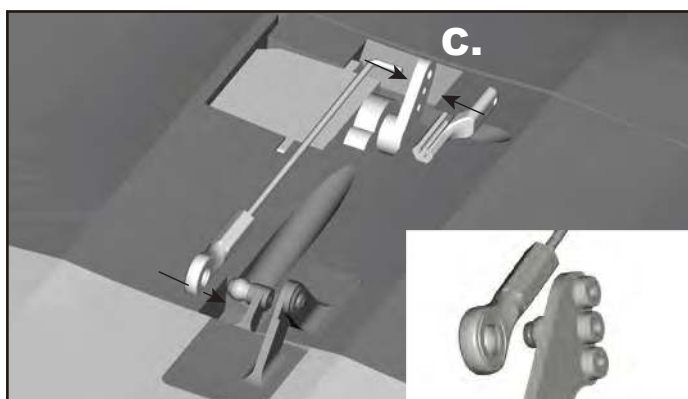
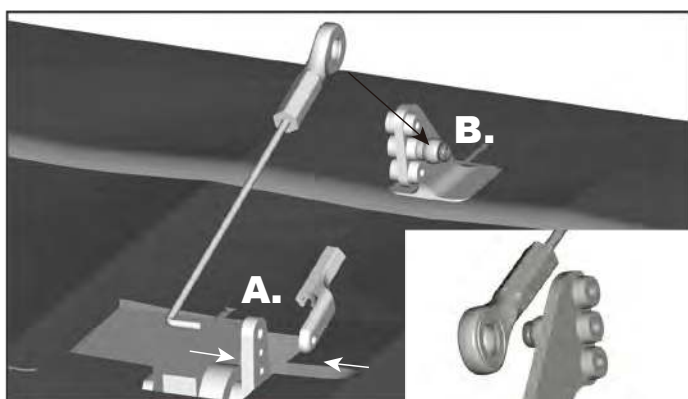
4.



5. Using a pair of pliers (ball link pliers preferably) connect the elevator push rod to the elevator horn (A). To ensure both the elevator and rudder are neutral (with the servos centered) loosen the grub screw of the piano wire fastener and slide the push rods until both surfaces are neutral if required (B). Tighten firmly when done. For added security, the tail can be glued in place as well.

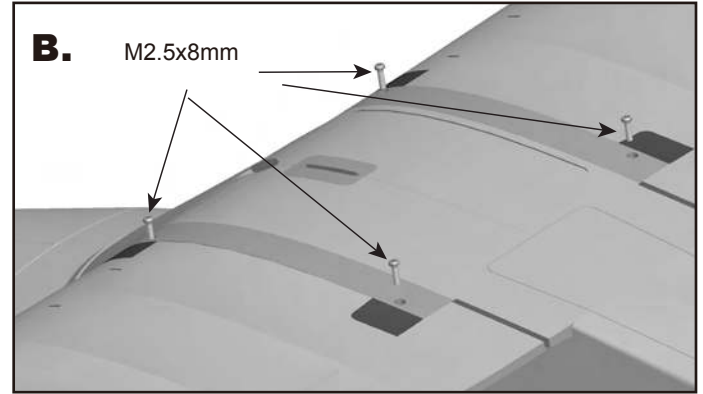
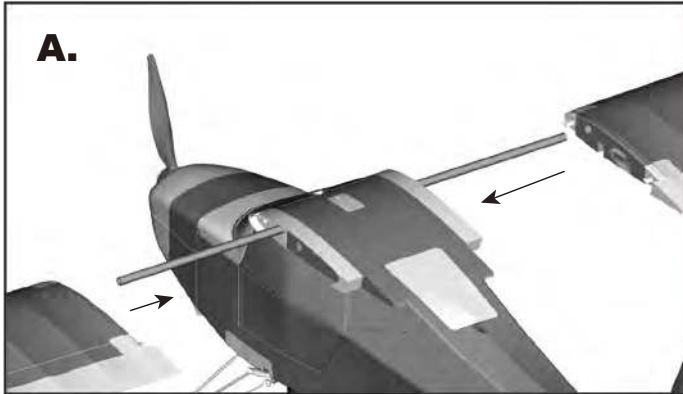


6. With the aileron control horns at 90 degrees to the wing surface (neutral) insert the aileron push rod and secure in place with plastic keepers (A). Connect the ball link to the aileron control horn as shown (B). Repeat this same process for the flaps, the exception being the flap servo horn must be positioned as far forwards as possible. This will give a flap neutral position with the push rod connected (C).



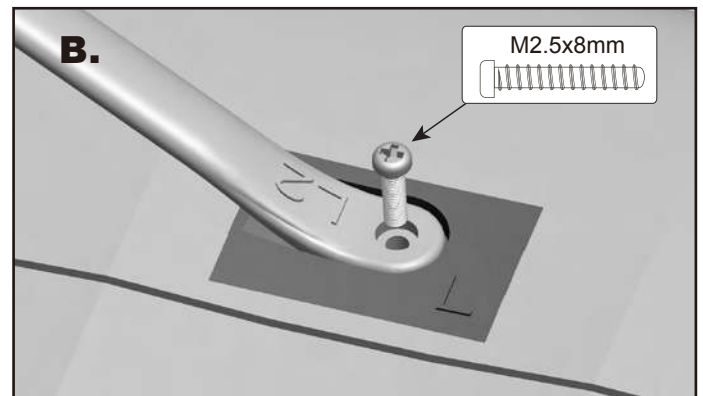
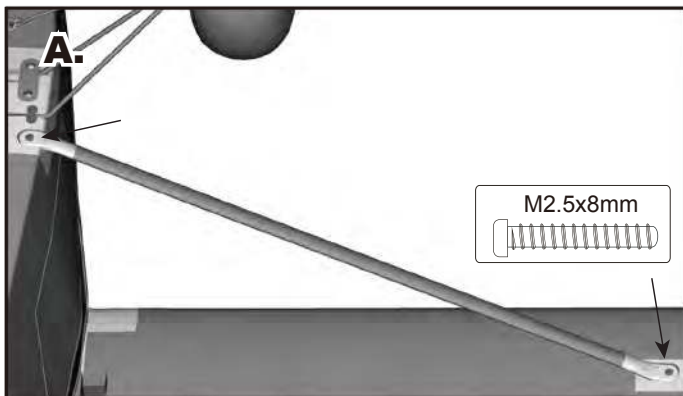
7. Insert the wing spar into the fuselage at the wing root (A) ensuring it is centered. Slide one wing half at a time onto the spar, pushing each panel firmly into place on the fuselage (A) and secure each panel with the provided M2.5x8mm screws (B). Take care to ensure the wing servo PCB is not damaged when connecting the wing to the fuselage.

7.

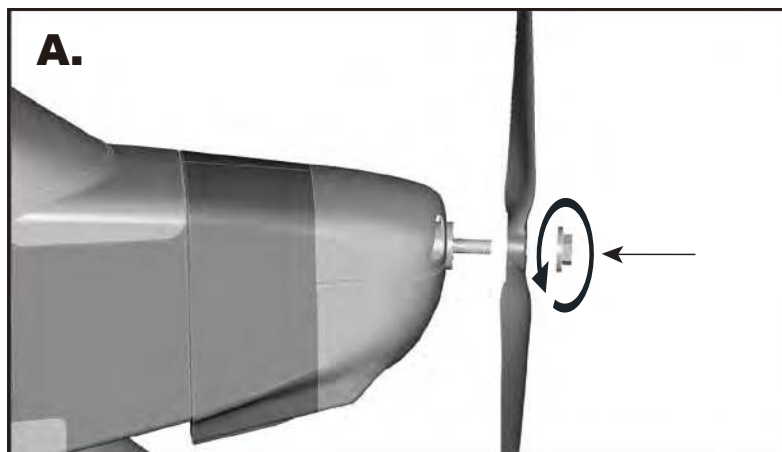


Note: For convenience clear tape alone can be used to secure the wing to the fuselage by running the tape along the entire span of the wing join. However this is not recommended if you intend to fly the Tundra aggressively.

8. Attach each wing strut to their respective sides (A), both struts are marked 'L' and 'R' to note left and right hand sides if looking forward from the cockpit. Secure firmly in place using the M2.5x8mm screws supplied (B).



9. The final stage of assembly is to mount the DuraFly 12"x6" carbon propeller using the prop nut as shown (A). However at this stage it is **HIGHLY** recommended that all set-up and final checks of the model be done before finally installing the prop firmly in place.



Note: The propeller should be balanced out of the box, however it is recommended a final balance check be carried out before attaching to the model. A well balanced prop will greatly increase all round performance and efficiency of the model in flight.

10. Install your choice of 6-channel receiver (OrangeRx R620X shown) using double sided foam tape or Velcro in the location shown (A) under the rear fuselage access hatch. Ensure Rx aerials are held away from the servos.



Congratulations, basic assembly of your Night Tundra is now complete.

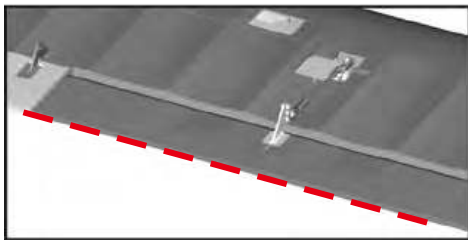
Please perform a final check on all screws, bolts and components, ensuring all are secure and firm in place.



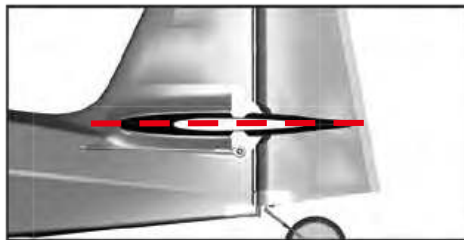
SETTING UP YOUR MODEL:

1. With your receiver installed and all servos plugged into their corresponding channels, connect the flight battery to the ESC to power up the electronics. With the model now armed, ensure all servos are centered and all control surfaces are level. If not, adjust by screwing the control clevises by hand, clockwise or anti-clockwise until the control surfaces are level as shown.

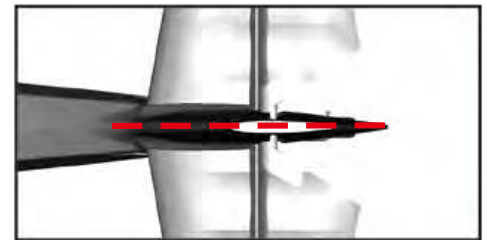
Note: For safety reasons, it is advised that this is done with the prop removed from the model.



Aileron


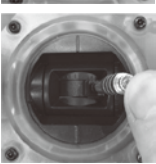

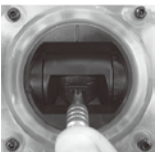
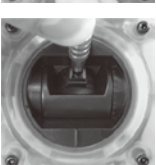
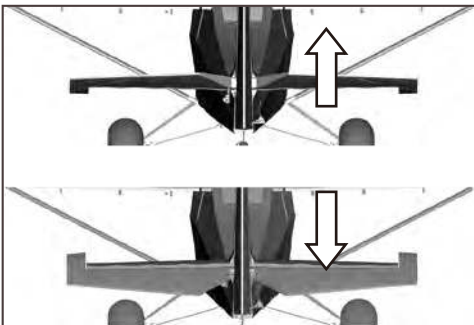

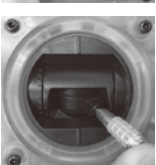
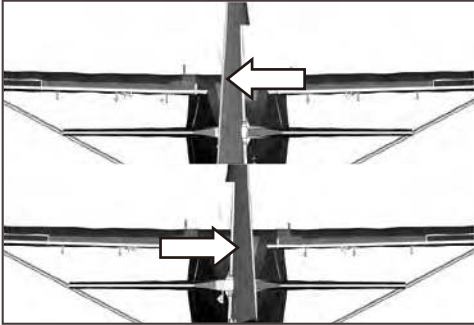


Elevator



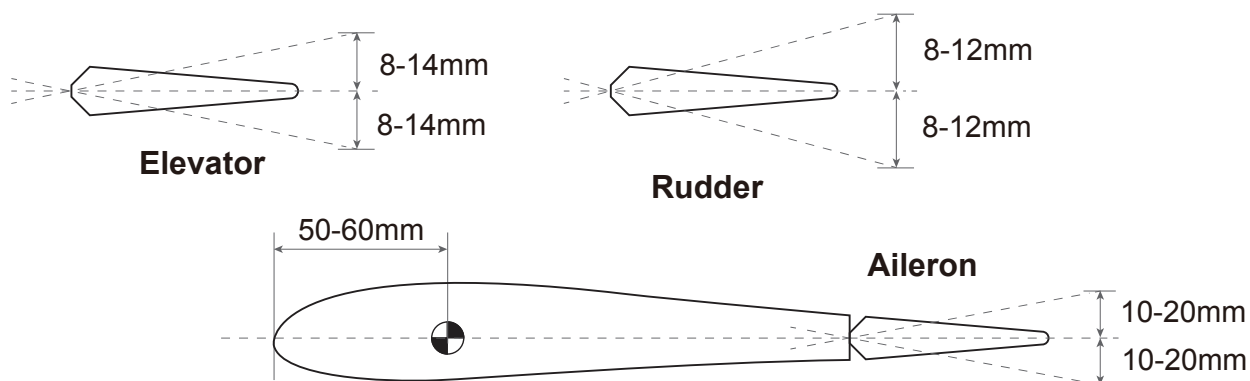
Rudder

2. Check all control surfaces are moving in the correct direction with the correct stick input (see below).

 	<p>Roll left</p> <p>Roll right</p>		<p>Aileron (Roll)</p>
 	<p>Pitch up</p> <p>Pitch down</p>		<p>Elevator (Pitch)</p>
 	<p>Yaw left</p> <p>Yaw right</p>		<p>Rudder (Yaw)</p>

3. The Night Tundra handles very well in flight and that's not down to good design alone, but a good pre-flight set-up too. Before you fly your Night Tundra please follow the recommended settings below for optimum handling and performance.

Control throws:

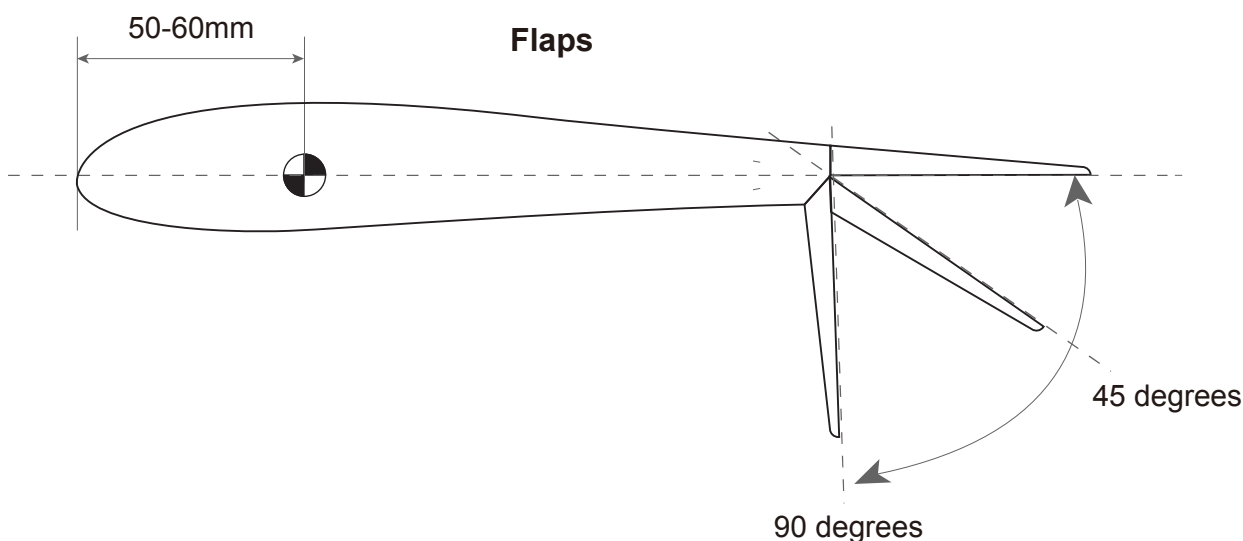


*Elevator: 'low rates' 8mm, 'high rates' 14mm in either direction from neutral.

*Rudder: 'low rates' 8mm, 'high rates' 12mm in either direction from neutral.

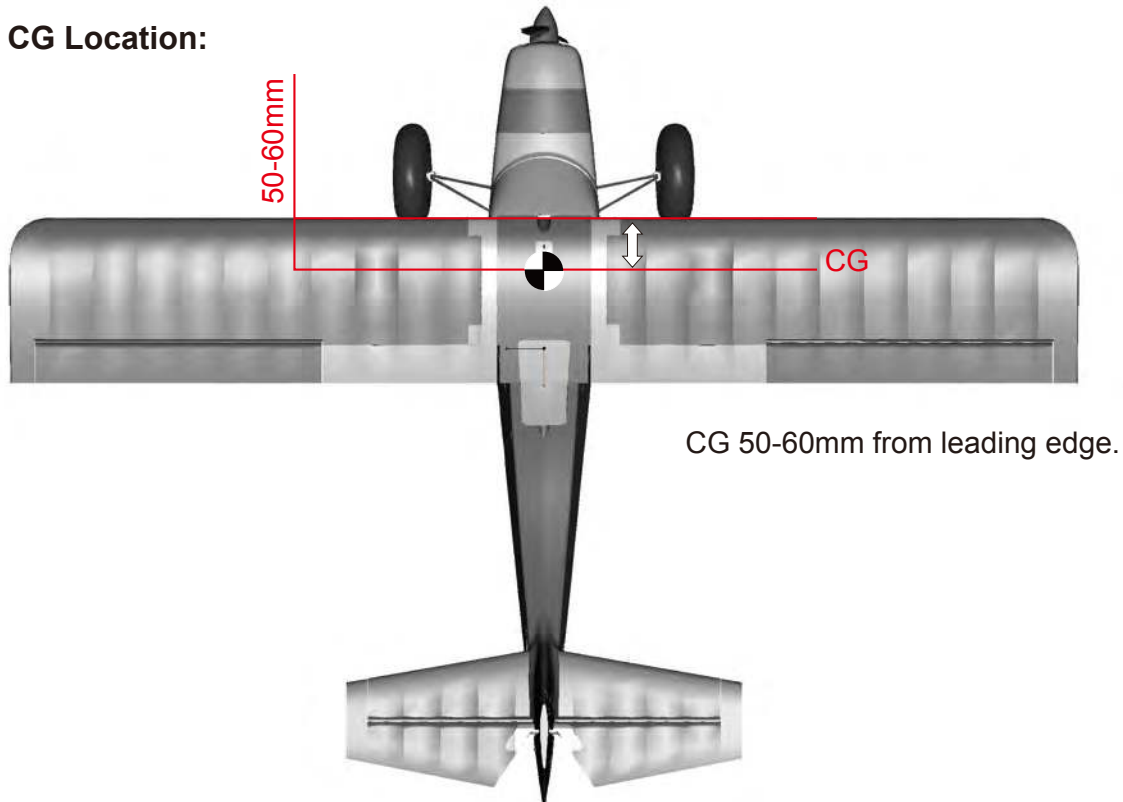
*Ailerons: 'low rates' 10mm, 'high rates' 20mm in either direction from neutral.

4. Flaps on the Night Tundra will need to be set for 3 stages (up/no flap, mid flap and full down flap). Do this either via your radio or mechanically by turning the clevises on the flap control rod (or via both in most cases), set mid flap to approximately 45 degrees and full flaps to approximately 90 degrees to the wing. In the 'up/no flap' position ensure the flaps close fully without straining the servos, and are both level with the trailing edge of the neutral ailerons. Also check that both flaps deploy equally at every stage.



5. The recommended center of the gravity (CG) for the Night Tundra is approximately 50-60mm from the leading edge of the wing. Your Night Tundra should balance within this range with anything from a 1800mAh - 2200mAh 3S LiPo installed as far forwards as possible in the battery area. Your battery can be secured in the battery bay area with the velcro provided.

CG Location:



With assembly and set-up now complete, your Duraflly Night Tundra should now be ready for flight. However we recommend your read and follow the advice given in the following pages of this manual before flying your model.

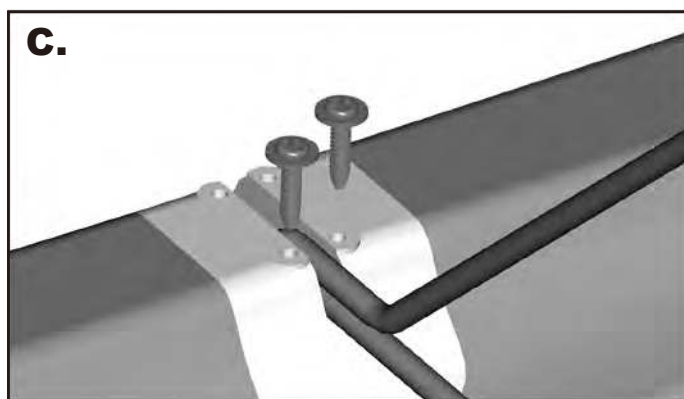
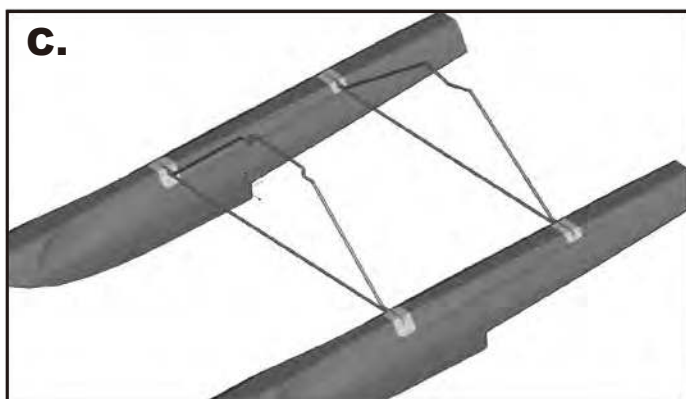
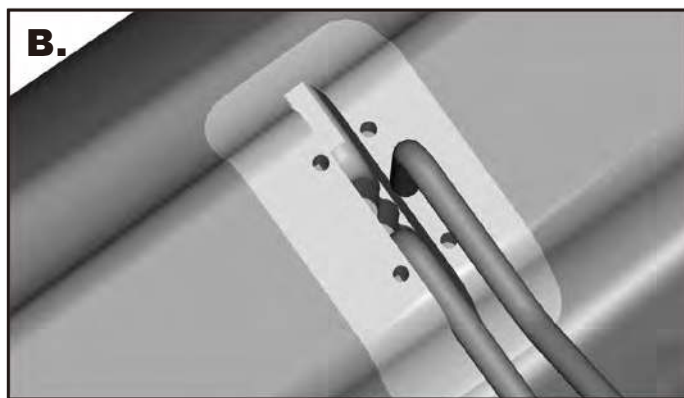
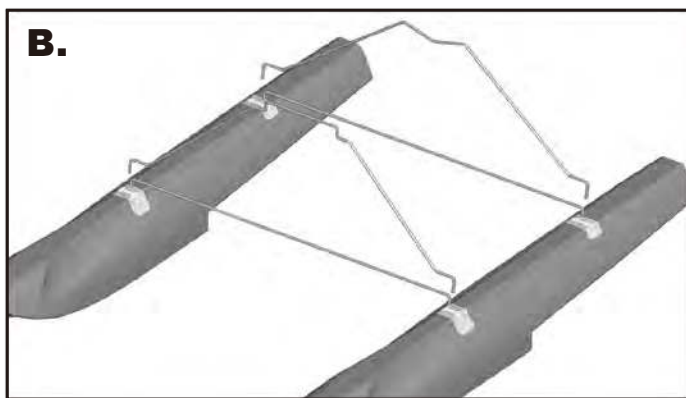
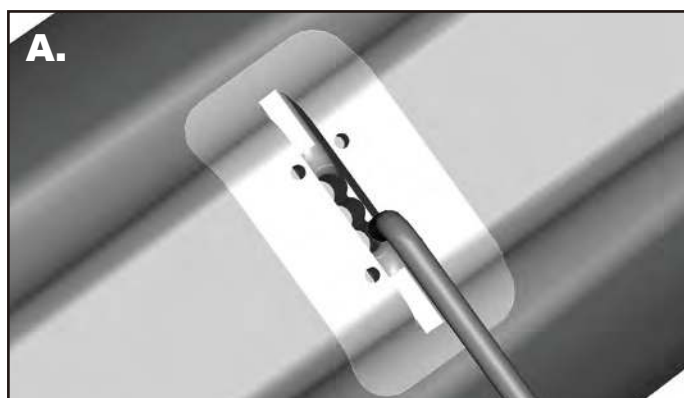
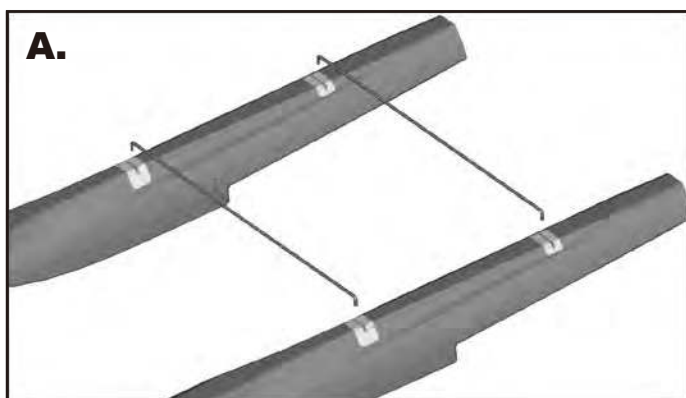


NIGHT TUNDRA OPTIONS:

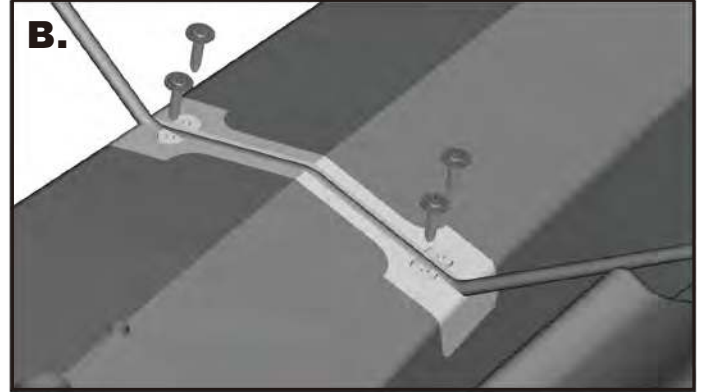
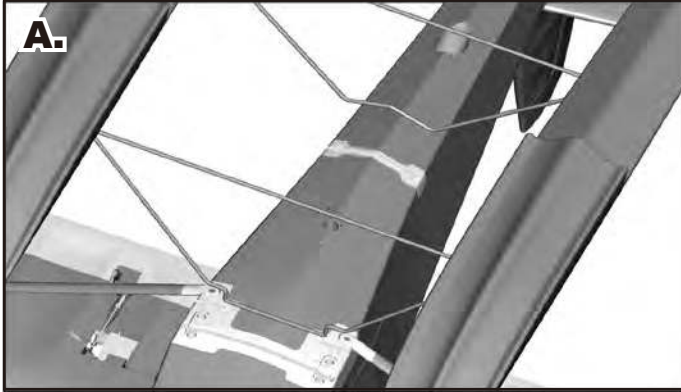
Your Night Tundra comes with several features available to you during the assembly. Floats , FPV canopy and tow mounting point are all included in the box. Use of a Candy dropper and skis are optional extra's not included. All however are covered in these following pages.

Floats

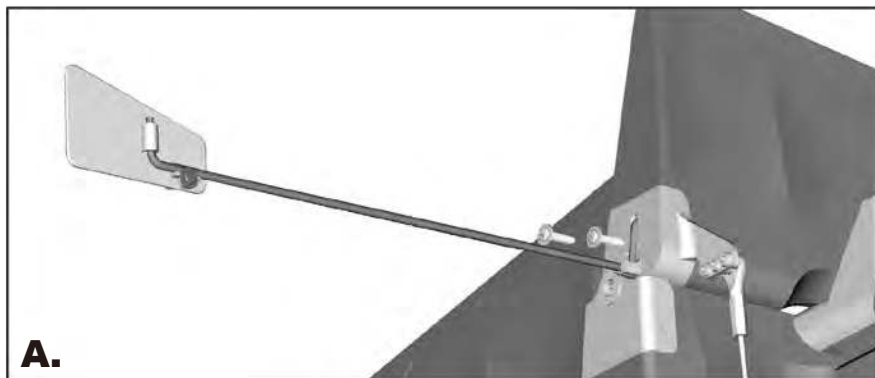
1. With each float placed on a level surface and parallel to one other, add the front and rear cross bracing struts by inserting each end into the inner most hole of the float mounting plate (A). Now insert the ends of the front and rear fuselage mounting struts into the center holes (B). With all float struts installed as shown, secure in place using the M2x8mm screws (C).



2. With the floats now fully assembled and landing gear completely removed, insert the front fuselage mounting strut into the main gear housing and onto the rear mounting plate (A). Secure the rear with supplied M2x8 screws (B) and the front using the original main gear mounting plate and screws.

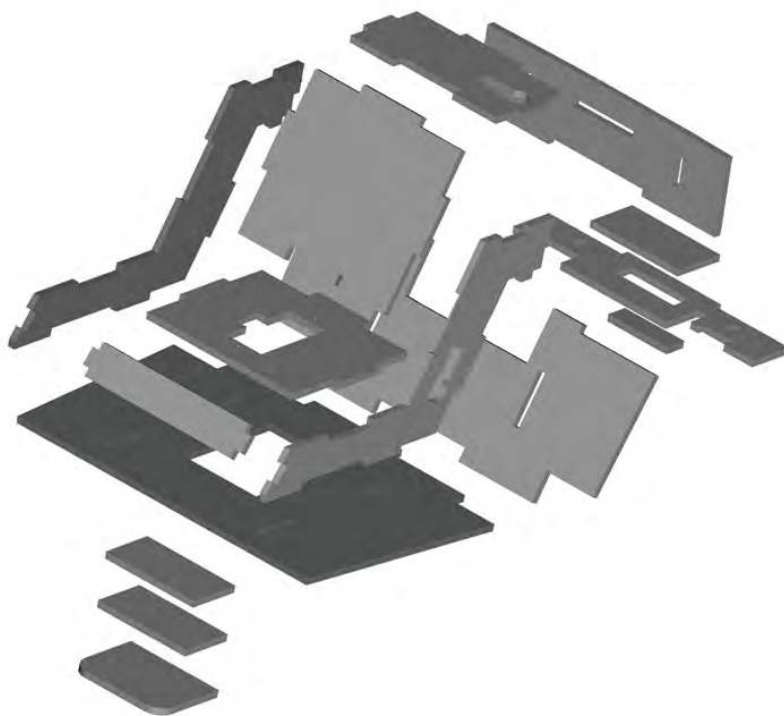


3. Although not always required, a water rudder does help with steering in less than calm water conditions. Simply remove the tail wheel and replace with the water rudder (A). Both tail wheel and water rudder mount in exactly the same way.



FPV Canopy

To assemble the plywood FPV canopy you'll need some CA and no more than 10 minutes to glue it all together. All parts are laser cut and following the below exploded diagram, the assembly should be self-explanatory. Note: Allow some time for the glue to cure on the magnet so the bond is as strong as possible. Also be mindful not to let any glue adhere to the exposed surface of the magnet.



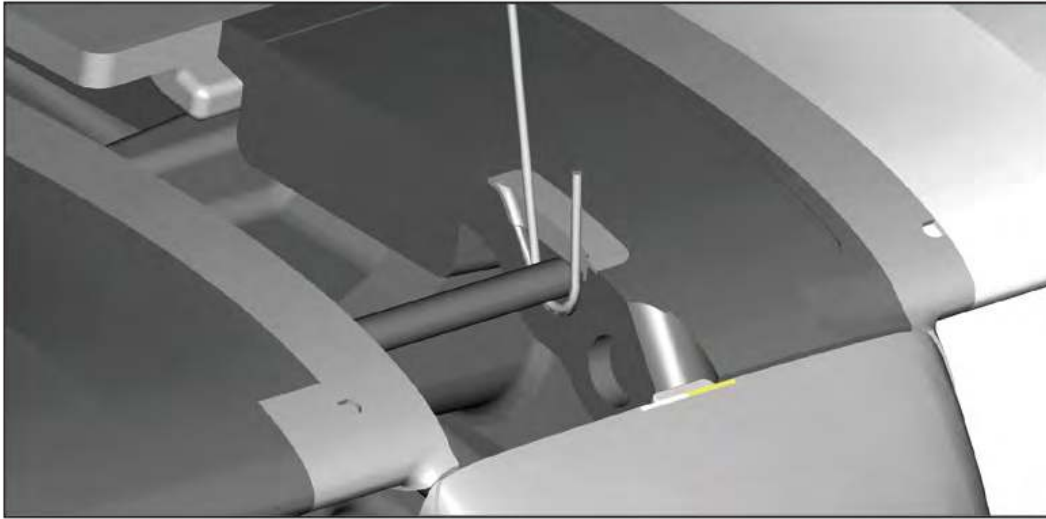
With the canopy now assembled you are free to install your FPV equipment as you see fit. However you may wish to follow the simple example shown below.



Tow line mounting point

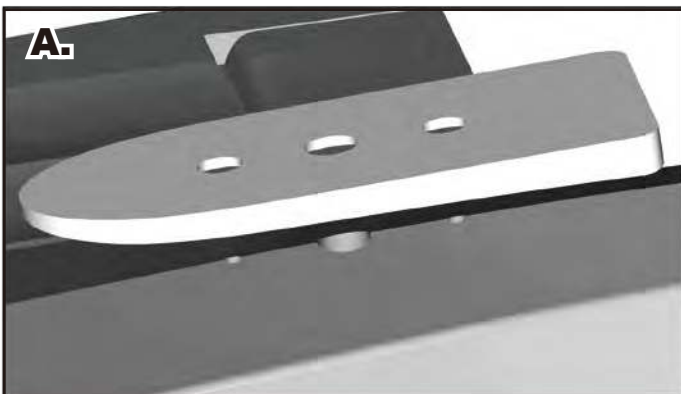
1. With each float placed on a level surface and parallel to one other, add the front and rear cross The built-in tow line hard mounting point gives the Night Tundra a solid point close to the CG to attach a tow line for gliders etc. The below cutaway shows how the tow line should be inserted and attached to the main spar through the tow line slot.

Note: The model you are towing will need a tow release system of some kind. The hard point on the Tundra is for attaching the tow line only.



Optional Candy Dropper

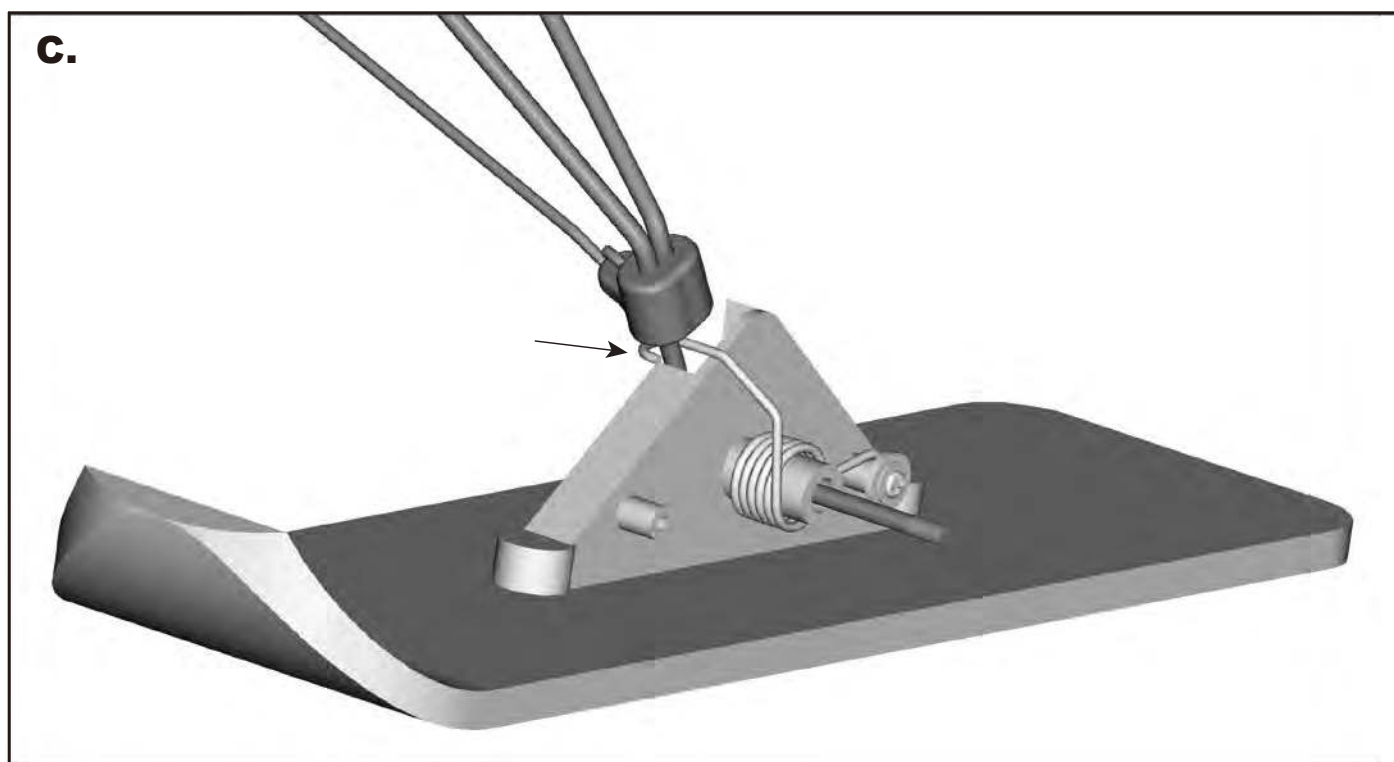
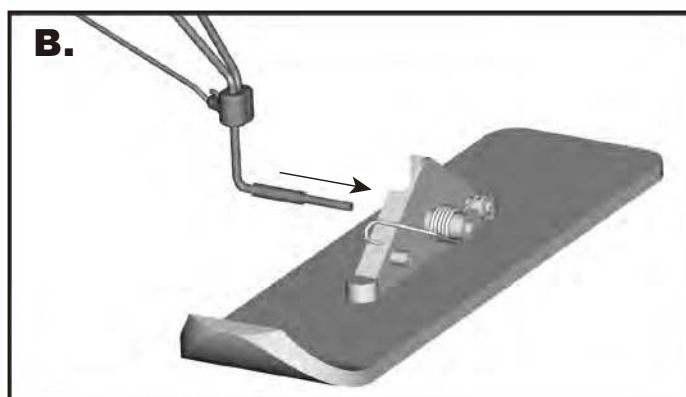
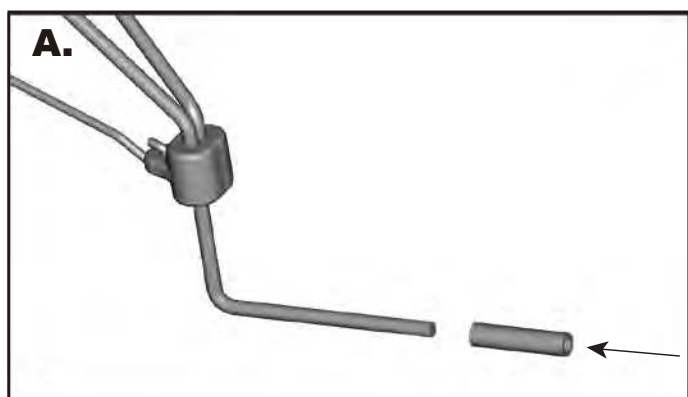
Mounting the optional Candy Dropper is quick and easy. Position the foam filler over the mounting holes on the underside of the fuselage (A). Feed the Y-lead supplied with the dropper through the center hole and connect to a spare channel on your Rx (B). Secure the dropper using the bolts that come with it to the fuselage (C).



Optional Skis

The optional skis are a worth while addition to the Night Tundra for flying from both snow and soft sand. First remove the main wheels and slide the plastic sleeve over both axles (A). Then slide each ski onto the axle/sleeve (B) and once in position hook the tension spring around the back of the landing gear wire (C).

Note: You may wish to add a wheel collet to the axle to give the assembly some additional security.



MODEL FLYING PRECAUTIONS:

- Select your flying area carefully, especially if you are night flying, whilst you will easily see the plane, you will not see obstructions such as trees and posts etc. Always choose an open space that is free from obstructions and away from crowded areas. Avoid flying in areas with roads, electric/telephone poles/wires, or within close proximity to full size air traffic.
- Do not fly this model in poor weather. High winds, fog or mist, inclement temperatures, rain and storms are to be avoided.
- Never attempt to catch this model whilst in flight. Even a slow moving model can cause harm to yourself and others, and risks damage to the model.
- This model is recommended for children no younger than 14 year old. All children, no matter what age, should always be supervised by a capable and responsible adult when operating this model.
- Remember to keep clear of the propeller at all times when your flight battery is connected.
- Before flying, always turn on your transmitter first, then plug your flight battery into the model.
- After flying, always unplug your flight battery first then turn off your radio transmitter. Never leave the battery plugged in when not in use.
- Exercise caution when charging your batteries, follow in full your battery manufacturers safety guidelines when charging.

PRE-FLIGHT CHECKS:

1. Always range check your model before any flight (especially when flying a new model for the first time). Follow your radio manufacturers guidelines for performing this check.
2. Check all screws, bolts and mounting points are firmly secure, including control horns and clevises.
3. Only fly with fully charged batteries (both in your radio and model). Failure to do so could result in loss of control, damage to the model and/or persons/property around you. Check your batteries are fully charged.
4. With the model powered up (transmitter on first, then receiver/model) check that all surfaces are free from damage/obstructions, moving in the correct directions and freely with stick inputs.
5. Inspect the model and prop for any damage that may have occurred during transit and listen for any unusual sounds from the electronics when powered up. If in doubt, do not fly.
6. With the model held securely and the prop free of obstructions, increase the throttle just slightly to confirm the rotation of the prop is correct. The model should want to pull straight forward with throttle.
7. If this is your first flight with the model double check the C/G is at the correct position. If not adjust battery position inside model accordingly.
8. If you are an inexperienced model pilot seek the help and assistance of an experienced pilot to perform these final checks and to test fly the model for you.

FLYING THE NIGHT TUNDRA:

The Duraflly Night Tundra is both an easy and versatile aircraft to fly and has no special considerations when it comes to flying but do make sure you've followed the set-up guidelines and recommendations in this manual thoroughly for the best flying experience.

Thanks to the powerful motor and prop combination you can be off the ground (or water) within just a matter of meters, or half throttle will give you nice long rolling take-offs, however where's the fun in that! Once you have your model trimmed, the real fun starts with the zero roll-out, full flap take offs, just be ready to hold in some down elevator! In the air the Night Tundra is super stable at any speeds too, full throttle sport flying allows you to explore the full aerobatic potential of the Night Tundra, where as at lower speeds and with an indulgent use of the flaps, the Night Tundra really comes into its own with almost full STOL type flying characteristics, flying slow has never been so much fun. On the ground too, with the very authentic bush style tires and functional sprung undercarriage, the ground never looked so inviting. With the Night Tundra rolling across the ground is just as exhilarating as rolling through the air.

Off water the only real consideration is getting of the surface of the water itself. This is greatly aided by the use of half flaps on all take off runs as they will help lift the Night Tundra up off the surface of the water. For towing, just remember to always keep the line tight and to stay below the model being towed. In the snow or sand with skis, just be mindful that you have less prop clearance, but maybe you'll be having too much fun to notice!



NIGHT TUNDRA TIPS:

- If flying from a hard surface (tarmac, asphalt, concrete etc) it is recommended that you remove the spring system from the undercarriage to avoid excessive bouncing on landings.
- When flying with floats of water, it is advised to always use at least half flaps on takeoff. Semi deployed flaps will greatly increase the Night Tundra's ability to lift off the water surface.
- When landing on water, always land with a good amount of forward momentum to help achieve the smoothest water landings possible.
- Use of water rudder should only be needed when flying from rough water. Generally the standard rudder alone is sufficient for flying off calmer waters.
- Due to the added weight of the floats, a 1800mAh 3S would be a more suitable LiPo to use rather than the heavier 2200mAh 3S when flying from water. This will keep the overall wing loading down.
- If you intend to perform STOL style landings often with your Tundra, it is suggested you use the optional tail brace upgrade supplied with most models. This will greatly improve the strength and rigidity of the tail which will be of great benefit with the higher forces at play with landing STOL.
- For optimum flight performance/model longevity, it is highly recommended that you always fly with a balanced prop. The supplied prop should be balanced, but it's always good to check first.
- Keep all leads within the fuselage area as tidy as possible. Tidy wires look better, allow for easier access to all internal components, better battery installation, increased airflow around electronics and a reduction in potential electronic signal interference (noise).
- Do not leave your model in direct sunlight for prolonged periods of time or in a vehicle on hot days. This will have an adverse effect on the foam surface of the model.

**Thank you again for purchasing the DuraFly Night Tundra,
we know you'll enjoy it immensely.**

**Don't forget, spare parts are available for this model, please see
opposite for details.**

SPARE PARTS LISTING:



Fuselage Set

SKU: 9499000422-0



Main Wing Set w/Hinges & Horns

SKU: 9499000423-0



Horizontal Tail Set

SKU: 9499000064-0



Float Set

SKU: 9499000065-0



**Canopy/Battery Hatch
w/Magnet**

SKU: 9499000426-0



Main wheels

SKU: 9499000067-0



Tail wheel Set

SKU: 9499000068-0



FPV Tray

SKU: 9499000069-0



Nose Cowl

SKU: 9499000424-0



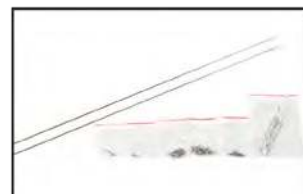
Prop Adapter

SKU: 9499000071-0



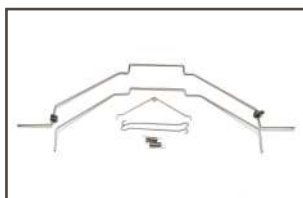
Wing Struts

SKU: 9499000072-0



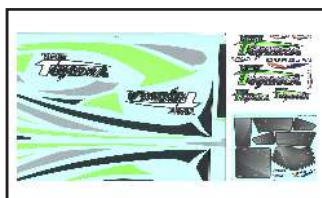
Hardware

SKU: 9499000073-0



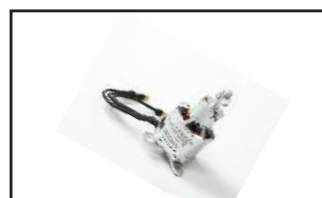
Main Landing Gear Assembly

SKU: 9499000384-0



Decal Set

SKU: 9499000425-0



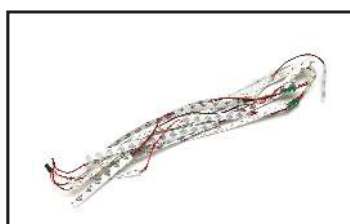
**3636-950KV Motor w/
Motor & Prop Adaptor**

SKU: 9499000076-0



12x6 Carbon Prop

SKU: 9499000077-0



LED Light Set

SKU: 9499000427-0

TROUBLE SHOOTING:

Problem	Cause	Solution
Motor does not turn	<ol style="list-style-type: none"> 1. Batteries is not fully charged. 2. Transmitter battery low. 3. Motor not connected. 4. The motor is damaged. 5. Receiver is not bound to Tx. 6. ESC in set-up mode. 	<ol style="list-style-type: none"> 1. Charge the batteries. 2. Install a charged battery. 3. Check for connection between the ESC and motor. 4. Replace motor. 5. Consult Radio manual and go through bind procedure again. 6. Hold model and move throttle to full position then back down to idle.
<u>Model moves backwards</u>	<ol style="list-style-type: none"> 1. Prop installed backwards 	<ol style="list-style-type: none"> 1. Swap the prop around.
<u>Control surfaces not moving with stick input</u>	<ol style="list-style-type: none"> 1. The servo lead is connected to Rx incorrectly. 2. The servo is damaged. 	<ol style="list-style-type: none"> 1. Make sure the servo leads are connected properly. 2. Replace servo.
<u>Model does not fly straight</u>	<ol style="list-style-type: none"> 1. Control surfaces not centered. 2. CoG is not in the correct position. 	<ol style="list-style-type: none"> 1. Adjust the trims on the transmitter. 2. Re-position LiPo as suggested.
<u>Model does not climb well</u>	<ol style="list-style-type: none"> 1. The battery is not fully charged. 2. Elevator servo is reversed. 3. CG too far backwards. 	<ol style="list-style-type: none"> 1. Charge the battery. 2. Change servo direction via Tx. 3. Move battery forwards.
<u>Limited Radio Range</u>	<ol style="list-style-type: none"> 1. Transmitter/Receiver batteries are flat. 	<ol style="list-style-type: none"> 1. Charge/replace batteries.

Contact:

For more information on this model and the entire range from Duraflly please visit us at:

- Duraflly.com

Or see our Facebook page at:

- Facebook.com/duraflly

And don't forget you can see the product video for this model and the entire Duraflly range at:

- youtube.com/hobbykinglive

For your next Duraflly purchase be sure to visit:

- hobbyking.com

If you wish to contact us directly please email:

- duraflly@hobbyking.com

Notes:

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APEX CE SPECIALISTS LIMITED

89 Princess Street, Manchester,
M1 4HT, UK



APEX CE SPECIALISTS LIMITED

Unit 3D North Point House,
North Point Business Park,
New Mallow Road, Cork, T23 AT2P, Ireland



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