Please review this entire manual before beginning assembly. By doing so it will help you better understand each step as you progress in the actual building of your kit, and you will do a better job in assembly.

INCLUDED IN THIS KIT:
- All laser cut Depron parts
- Balsa ailerons and 2 pieces of balsa elevator
- Plywood motor mount
- 3 Pushrods + 1 Pushrod tube
- 3 Dubro Micro control horns
- 2 Dubro Ez-connectors
- 1 Carbon fiber tube and 3 flat spars

SPECIFICATION:
- Wing Span: 30 inch
- Length: 19.5 inch
- Dry weight: 8.5 oz
- Ready to Fly Weight: 12~13 oz with 3S 11.1v 1550mAh

NEEDED BUILDING TOOLS:
- Foam Safe / Odorless CA glue + Foam Safe Accelerator (User Friendly Odorless “UFO” highly recommended)
- Blenderm Hinge Tape or Transparent Scotch Tape
- Sandpaper and Sanding Bar
- Hobby Knife, Pliers, and Z-bending tool
- Ruler (preferably metal)
- Wax Paper and Hot Glue

REQUIRED EQUIPMENT:
- 4 Channel Transmitter + Receiver (AR6000, AR6100E, AR6110E, AR6200, AR500, AR7000, or similar)
- 3 Micro Servos (5~8 gram) (HXT500, SG-50 or Hitec HS-55 or similar)
- Small & Light High KV Outrunner (2208, 2826, etc.) (Grayson Hobby Micro Jet V3 2200kv motor)
- ESC: 20Amp up to 40Amp, depending on motor used
- APC Prop: 5x5 or 6x4
- Prop Adapter: 3.17mm (GH V3 includes prop adapter)
- Lipo Battery: Nano-Power 1100mAh 3s 11.1v 35C(use smaller battery for lighter set up) or Nano-Power 1400mAh 3S 11.1v 35C or Nano-power 1600mAh 3S 11.1v 45C or Nano-Power 1900mAh 3S 11.1v 45C
- Maximum Battery size: 104x34x24mm
- Maximum Battery weight: 162 grams
The un-cut Depron parts of the kit as you will receive them.

Simply cut them out with a sharp knife at the tabs.

**TIP:** build most of the plane over wax paper to prevent accidental gluing to the table.

The wood parts and hardware.

**Update:** New kits will include two balsa elevator halves instead of one foam + one balsa elevator halves.

Start with the fuselage sides and the doublers.

Glue the doublers over the top half of each fuselage side. Make sure the tabs are not covered and the slots on the top line up.

If you have difficulty then you can use scraps to line up the bottom. Be careful not to glue them in. (You can also test fit the motor mount to assist in lining up the front properly.)

Make sure these slots line up well so that the carbon fiber tube and flat spars can be inserted perpendicular to the fuselage sides and not be askew.

Make sure you made a left and right fuselage side with the doubler facing the inside. Then glue the fuselage center piece into the slots. Use enough glue!

Since the fuselage is curved you will need to spray accelerator on the front and rear sections separately while pressing for proper fit.

Attach the motor to the mount now. Doing it later will be more difficult.

Glue in the motor mount to the fuselage side.

Glue on the remaining half. Pay attention that the slot are pressed into the tabs equally on the left and right sides by repeating the process as before. Pressing down while spraying accelerator.

Make sure you apply plenty of glue on the motor mount areas for extra strength. Use thick foam safe here to create a glue fillet on all sides.
Here are all the fuselage top and bottom pieces that will be doubled up. The doublers are slightly smaller (thinner) than the part being doubled. Glue them together centered. See next steps.

Pay special attention to this part here. Only this part will need an offset of 1/16”
Line up the inside doubler 1/16” off from the back edge.

Here you can see that the inside doubler is evenly spaced on each left and right side. This is how all the parts should be assembled. Remember only this piece will have an additional offset mentioned previously.

All the parts doubled up

Take the rear top piece shown here. Measure 7” inches from the rear.
Cut this part in half at the 7” inch from the rear mark.

Test fit one of the carbon fiber flat spars in the rear-most slot on the fuselage top. Do NOT GLUE it in, this is just to line up the other foam part in the next step.

Take the front of the fuselage top piece that you just cut. Test fit (DO NOT GLUE) it so that the inside doubler portion will be right up to the flat spar.

Now that we have that piece properly lined up we can now glue in the very end tail piece of the fuselage top. Remember ONLY glue this rear part in at this point.

Glue it in position as shown.

Now you need to remove the flat spar and the top piece that we used as a tool to line up the rear section. Put this aside for a while as we move on to the elevator assembly.

Find all these parts for the horizontal stabilizer+elevator assembly.

Update: New kits will include two balsa elevator halves.
Insert and glue the carbon flat spar into the horizontal stabilizer and glue together the balsa and foam elevator.

**Click here to see RCGroups** for a tip on how to sand the elevators.

Use a metal ruler and trim a bevelled edge on BOTH the horizontal stabilizer and the elevator. About 30 degrees is enough. The balsa side of the elevator is the top.

You should now have a nice upside-down V groove for a pivot point. Don’t tape it on yet...

Insert the horizontal stab into the fuselage and mark where the leading edge meets the fuselage

You should make marks as shown.

Cover the foam between the marks to prevent sanding where you don’t want to.

Again use masking tape and attach the elevator with the balsa side up. Then sand a taper onto the balsa elevator only. Do a little at a time and check your work as you go to prevent over sanding.

Here you can see the taper to a sharp trailing edge. It doesn’t have to be perfectly sharp.

Flip over the assembly and sand the foam elevator down to a taper as you just did on the balsa side.

Now you will see the elevator trailing edge coming to a point. Again it doesn’t have to be a sharp tip.

Next sand the leading edge of the horizontal stabilizer rounded.

Clean off all the dust well! Then use Blend-erm or transparent Scotch tape to tape the elevator to the horizontal stabilizer.
Flip it over and tape the underside

You will find that the elevator keeps popping up. Use your finger/fingernail to press down the elevator hinge so that it doesn’t keep pointing up.

When taping the hinge try to use a single long piece and then trim when finished.

Apply glue to the fuselage where the horizontal stabilizer. Assembly will be inserted.

Insert and glue the horizontal stabilizer to the fuselage. The balsa side of the elevator facing up.

If you look underneath you will see a protruding little part of the fuselage that prevents the elevator to move down properly

Simply trim it away.

Now your elevator can move down properly.

Flip over your fuselage assembly so that it is upside-down. Then install your elevator servo.

Use hot glue to secure the elevator servo.

Install and glue the control horn into the hole of the elevator on the bottom side. Then insert your elevator push rod on the top hole.

Cut down your servo arm down to leave 3 holes on the arm.
Tape the elevator so that it is in neutral position and line up the pushrod with the tubing inserted over your servo arm.

Position it about center of the push rod length. Trim a slot or groove that the pushrod tube can sit in. But don’t glue it in yet.

Make a zig-zag bend just behind the servo so that you can make minor adjustments after set up on this linkage is completed.

Line up the pushrod over the hole in the servo arm and mark it with a sharpie. Try to be exact.

With your pliers grab the wire and position your fingers as shown.

Make a Z-bend using a Z-bend tool

Then simply twist the pliers and you will create a Z-bend. Use it later for final adjustments after connecting the pushrod to the servo arm.

Use the mark you made on the pushrod to line up the Z-bend tool properly.

The Z-bend should be as positioned as shown.

It should fit just right. But if it doesn’t don’t worry. Just open or close the Z-bend that was made for final adjustments until the pushrod will fit right into the servo arm where needed.

Find some scrap pieces of foam and make a stack for to use as a support for the push rod tube. (2 pcs of 6mm or 4pcs of 3mm.) This is important, do not skip this step.

Now take one more 3mm piece of scrap foam and glue a cover over the pushrod tube so that there is no way for it to come loose.
Install the pushrod on the servo arm and screw it in the servo now.

Hook up your servo to your receiver and test your elevator linkages. Make any final adjustments here as this is the last chance to change any of it.

Once you are satisfied that it is centered and moving freely then glue on the bottom piece. Don’t worry if you think your elevator is not moving enough. It takes very little movement to properly control this plane.

Glued and covered. If you need to change your servo in the future you need to cut this part open to access it.

Test fit the battery hatch.

To curve it properly, use a marker and press down and roll away from you while lifting the end. You may need to repeat this several times to get a nice natural curve.

Try to match the fuselage shape as best as you can. It is not utterly critical to be perfect. In fact you can get by without much.

Place the battery hatch in position to line up the front piece so do not glue the battery hatch.

Go ahead and glue only the front piece on now.

Hold it down on all 4 corners to make it conform to the curvature of the fuse while the glue cures. Or spray accelerator carefully while holding all 4 corners with one hand.

Remember we didn’t glue the battery hatch.

Tape the front part of the battery hatch. You will be creating a one way moving hinge.

You will find that it doesn’t follow the same curvature of the fuselage.
Attach the taped part to the front of the fuselage bottom as shown.

Then flip up the battery hatch and apply tape to the underside of this hinge.

Wrap the tape into the fuselage.

Now you will have a hatch for your battery. You will only be using tape to keep it closed for each flight. It is the safest solution to secure the battery inside the airplane when flying fast and high G turns.

You can sand the edges smooth as an option. Only sand the bottom of the fuselage at this point.

Now onto the wings. First locate the curved wings and put them aside for now. We will be working on the flat wing halves first.

Tape down the flat wing halves and use the “T” shaped 6mm parts as a jig to properly space the wing halve from each other.

Insert the carbon tube right between the space of the 2 “T” jigs then place the center wing sections over the tube. Line everything up properly but don’t glue yet.

Now once you check for proper alignment carefully remove one side so that you don’t move the alignment. Then glue the carbon tube down first.

Then apply glue to the center piece to be glued over the carbon spar you just glued.

Now that the right side is completed and secured from moving you can lift the left center wing panel and glue the carbon tube.

Now finish off the left center wing panel to be glued down.
At this point the 2 wing halves should be glued and secured in the proper position and spacing. Carefully remove the wax paper and quickly press the carbon flat spar up to the glue.

Remove the “T” jigs. Then take the longer of the 2 flat spars and glue one half of it to either side of the wing center sections. See next photo. Use the wax paper to press the flat spar onto the wing. This will keep your fingers clean.

Apply glue then use a piece of wax paper to press it up against the back side of the center wing section. You can lift the wax paper while still holding it and spray accelerator to cure it. Repeat this process with the remaining shorter flat spar on the front side of the center section. Use more glue at the ends and hold it while spraying accelerator if you have trouble with them.

Once the left side is cured move on to the right side. Slip the wax paper between the flat spar and the foam. Next take a piece of scrap foam at least 9 inches long. Then cut a strip about 3/32” It’s okay to be a bit more but not less.

Then pull down the wax paper and apply glue to the back of the center wing section 3/32” is a little more than 1/16”...

Then flip the wax paper back to cover the glue and spray accelerator on the flat spar. You will be cutting half of that strip and gluing it on each wing half. Glue it where it is marked with the red line. Which is just below the carbon tube about 1/16”
Glue and trim to fit as shown. The point here is to create a channel for the servo wire. Try to make it as high as the carbon tube is, which should be only about 3/32” raised up.

In order to assist locating the centerline when sanding the leading and trailing edge of the completed wing you should mark with a colored sharpie the edges as shown.

Do not mark as shown here. These marks are shown here for you to know where to apply glue when covering the top skin. Don’t forget to apply glue on the carbon tube either! Pay attention here and use plenty of glue.

After you applied glue to the read areas prepare the top curved wing skin to be joined to the bottom sheets. Put a couple small strips of tape that will act as hinges to properly line up the top sheet in one try.

The reason for doing this is that you may want to spray accelerator on the top sheet for an instant bond. But you have only one chance to line it up right. If you mess up a little you may have to live with a crooked wing if so it’s ok, just trim it.

If you do spray the accelerator make absolutely sure that you spray it far away from the uncured glue on the bottom sheet. Otherwise you may cure it before joining the 2 halves.

After completing both side carefully, you need to cut out the servo wire channel out of the top wing skin. You should be able to see where to carbon tube is... cut directly below it to the servo hole.

Cut a strip 1/16” right below the carbon tube and you will have created a channel that will fit your servo wire.

Next prepare the aileron wood pieces. Mark and cut off the ends to match the wing shape.

The width of the ailerons from front to back is more than is needed. Draw a line to match at the thickest part of the aileron. Do not trim the trailing edge!

Bevel the aileron on the line you drew. Now your aileron will be the right size and it will have the necessary bevel to create the hinge.

Here you can see the approximate 30 degree bevel on the aileron.
You should also bevel the wing where the aileron will be attached. This will make a better aileron hinge movement.

Here you can see the approximate 30 degrees bevel on the wing.

Next sand the leading edges rounded. Use the red marker lines to see where the center of the 2 sheets are when sanding the leading edge round. Try to be even on both top and bottom sides of the leading edge.

Then sand a slight tapered trailing edge at the top of the wing tips. Do not over do it as you will weaken the wing tips.

Here you can see the red marking lines showing you were the center of the 2 sheets are. Don’t sand the top trailing edge all the way down.

Line up the aileron and feel if it is the same height as the wing and that it is smooth.

If your aileron is thicker then flip it over and sand down the underside of the aileron. This will ensure your top wing has a cleaner airflow.

Now you will have a channel that you can route your aileron servo wire into the fuselage. The wire will be visible but it will be tucked down out of the airflow.

Clean of the dust well and apply your choice of hinge tape on the aileron first. Trim the edges then...

Attach the aileron to the wing.

Flip up the aileron and tape the underside of the aileron hinge. Trim the tape at the edge.

As did the elevator this aileron will keep popping up. not
Using your finger, fingernail, or a pen or something hard, press down the tape hard along the hinge line to neutralize that effect of popping up.

Before installing your wing servos make sure they are centered by hooking up your receiver and powering them up. Make sure your radio is trimmed in neutral too!

Trim the tabs off and ream the servo arm hole to fit the Ez-connector. Use the hole furthest out on the servo arm.

Here you can see that the HXT500 servos are a bit too small. HS-55 fit perfectly.

You will need to cut the scrap piece of wood supplied into 2 pieces and wrap a piece with some masking tape to make the servo fit tight into the cut out on the wing.

Install the servo so the arm is facing down into the bottom of the wing. Glue the servo in with CA or hot glue. If using CA be careful not to get glue into the servo.

Use a ruler to line up the position for the control horn to be glued into the aileron.

Measure 3/8" inch from the wing and drill a small hole for the micro control horn.

Glue in the micro control horn and ream the top hole to fit the .039" pushrod wire. (The holes are designed to fit .032" pushrod wire perfectly)

Install the Ez-connector and pushrod to complete the aileron linkage set up. Do both sides.

Now test fit the wing on the fuselage. You will find that the fuse is too thin. This is okay, you need to spread the walls of the fuselage to fit the wing. But first press down evenly to seat the wing properly in the wing saddle.

After you are sure the wing is seated completely down into the fuselage glue it on while spreading the walls of the fuselage with your fingers and spraying accelerator as you go.
You will find that the servo wire needs to sit flush for the top cover to fit properly.

Trim a slot as shown here by cutting out a small part of the fuse-lage wall.

Now it will sit flush and the top cover will fit perfectly.

You plane should be looking like this at this point.

You can now test fit the remaining top covers. Do not ever glue these in, they will be taped down to keep access to the gear. Now sand the top edges if you want.

Prepare the Rudder by sanding the leading and trailing edges rounded.

You can glue the rudder now or wait until you are all done after taping up the fuselage body. Gluing it later will make it much easier to decorate and cover the plane with tape.

Install your ESC and route the battery connection into the hole in front of the elevator servo.

Plenty of room to install your receiver as well.

Your battery connector should be visible as shown.

The Center of Gravity is marked here. The range is 1 3/4" to 2"

You don’t want the battery to slide all the way forward into the nose of the plane as you see happening here with the 1550 mah battery.
Use the “T” jigs as scrap for the next steps

Here are the battery ranges that work well with this plane.
1050mah for light and 1550mah for standard.
1250mah works well also

Using the scraps make a wall that will prevent the battery from sliding forward.

Make the wall so that the plane will balance with your battery. For the smaller battery it may be perfect right up to the hatch line.

But the bigger battery needs to be just a little further rearward. You can just tape to foam to the battery to get proper placement using either battery

You will need to bend the wires to make it fit. And you can see it is further rearward than the smaller battery.

Now to cover the entire fuselage with packing tape. This will add tremendous strength, durability, and longevity to your plane.

Apply a strip of tape the length of the fuselage. Extend the tape over the front and the back.

At the back side you can only tape up to the horizontal stabilizer.

Trim the tape to fit around the horizontal stabilizer. Or for simplicity you can just cut it off short at this point.

Trim the tape around the fuselage shape in the front.

Trim it off but leave the part on the bottom and....
Trim into sections with some scissors so that it will wrap around the curve without wrinkling. Then wrap each section at a time. You will find this process extremely helpful to create wrinkle free taping jobs around curves.

If your tape goes over the sides of the battery hatch then trim it and fold what little part there is down into the hatch.

It may be small but wrap it down into the fuselage. We will add more tape to keep it wrapped down later.

Trim the section where you see the fuselage taper changes. This way you can wrap the tape around the edge without creating any wrinkles.

After trimming the tape at the needed places you can neatly wrap the tape over the edges.

Cut another strip of tape just long enough to cover the walls of the battery hatch. Tape it so the one piece will wrap over to the inside of the fuselage walls.

Trim it in sections to get a clean wrap over the curve. Now repeat the last few steps for the remaining fuselage side then move on to the next part.

Now you will cover the rear bottom part. Lay out a strip of tape that extends over into the battery hatch about an inch. Make a cut at the part where the taper of the fuselage changes.

Trim the tape so that it will wrap under and into the fuselage at the back side of the battery hatch.

Tuck in the tab of tape under the fuselage inside.

Now lay out a strip of tape that extends over the front bottom fuselage including the battery hatch.

Now lay out a strip of tape that extends over the front bottom fuselage including the battery hatch.

Trim the end of the battery hatch sides so that there will be no wrinkles. Just trim about 1/8” inch.
Trim off the 1/8" strip so that the tape will not cover the inside edges of the battery hatch.

Tuck over the remaining piece of tape to the underside of the battery hatch.

Make cuts to small section of the remaining tape over the sides of the front so that it will tape over the edges again without wrinkling.

Trim the overhanging tape in the front.

Now tape the battery hatch again, this time with strip that are arrange sideways. Then wrap the tape around to the inside of the hatch cover.

Move down and continue taping and wrapping the tape around the battery hatch cover.

One more piece will complete the job. Now you will have a secure tape job that you can apply tape over and over again to secure the hatch down without damaging the foam when you peel it off.

You entire fuselage should be covered in tape now.

Just for you to see here we are using blue tape but you should use transparent scotch tape. Tape down the front hatch and trim into sections to cover the sides without wrinkles.

Here you can see where to apply the stoch tape to attach the top hatches. Don’t glue them to keep accessibility.

You are now basically done now.... But you can continue if you wish to see how to do the taping for decorations. First choose your colors.

Apply your desired colors as shown.

You entire fuselage should be covered in tape now.
Continue with your desired selection of colors.

Flip over and tape down the edges. Keep it tight. Use NEW knife (for best results) and trim the tape along the edges.

Apply tape to make strips or bars.

Flip back over and trim the stripes or bars.

Tape the tips of the horizontal stabilizer.

And trim carefully with a NEW knife for best results.

For the rudder tape the edge and trim about a 1/4” overhang. Then cut little sections to wrap over the edge without wrinkles.

Nicely wrapped over.

The other side will look like this. Repeat for this side.

Now your completed tape decoration. At this point you can cover your entire plane with Water Based Polyurethane (Minwax Polycrylic) this will help additionally to keep the uncovered foam wings clean.

Finally, you can print out the decal sheet on clear Avery 5163/8163 mailing label size 2”x4” or full clear sheet. Also Staples compatible sizes work well too.

Congratulations! You are finished with your new Nanoshark.

IT IS VERY IMPORTANT TO PROPERLY SET UP YOUR CONTROL SETTINGS AND THROWS. PLEASE READ ALL THE INFORMATION ON THE PAGE BELOW.
Airplane flight Characteristics:

This speed plane is FAST and easy to fly. It is the big brother of the Babyshark and is a bit more tame. This plane has no bad habits at all and it can handle most aerobatics that an Aileron/Elevator aircraft can perform. It can be flown slow and low while cruising around the field like a park flyer or a crank it up and fly Wide Open Throttle high speed full elevator yank and bank pylon turns and get your heart pumping. Not quite as fast and crazy as the wicked little Babyshark but will still satisfy your need for speed.

This is NOT a flat foamy plane. Expect performance like you never thought possible from a 3mm Depron foam airplane.

**PLEASE FOLLOW THE RECOMMENDED CONTROL THROW SET UP. VERY IMPORTANT!!!**

Center of Gravity: 1 3/4” from the leading edge at the wing root.

R.T.F. Weight: 12.3oz

**Aileron Throw:** Up and Down = 3/16” ~ 5/16”
Dual Rates for 60% low, 80% high
Expo is at your preference 0% to 40%

**Elevator Throw:** Up and Down = 1/8” ~ 3/16”
Dual Rates 50% low, 70% high
Expo is highly recommended at 50%

**OUR RECOMMENDED SET UP:**

**Fast 3S:**
Motor: Grayson Hobby Micro Jet V3 2200 KV
ESC: ZTW 20 Amp
Battery: Nano-Power 1100mAh 11.1v 35C up to 1900mAh 11.1v 45C
Prop: APC 5x5 ~ 6x4

**Faster 3S:**
Motor: Black Magic 2208 / 07 - 2600kv
ESC: ZTW 30 Amp
Battery: Nano-Power 1100mAh 11.1v 35C up to 1900mAh 11.1v 45C
Prop: APC 5x5

**Fastest 3S:**
Motor: Keda 2826 / 07 - 2800kv
ESC: ZTW 40 Amp
Battery: Nano-Power 1100mAh 11.1v 35C up to 1900mAh 11.1v 45C
Prop: APC 5x5

Warning! This aircraft is for experienced pilots only. This is not a PARKFLYER. Although it weighs under 2LBS, its speed can exceed 60mph. Therefore, it does not qualify as a “Parkflyer” as per AMA rules and regulations. It should be flown only in fields specifically reserved for RC aircraft which have been approved by the AMA. It is highly recommended that you join the AMA if you are not already a member. If built or flown incorrectly, this plane can cause damage property or injury to people. User assumes all responsibility and risk.