

Thank you for purchasing Hawker Hunter 90mm from www.rbckits.com

For the first time, R/C enthusiasts we have a choice in scale and fun flyer aircraft designs.

Our goal, through computer technology and state-of-the-art production techniques, is to offer aircraft which in the past have not been modelled simply because they weren't popular enough to justify mass production. Our production techniques allow us to produce aircraft which, though not as popular and well known as P-51s and P-47s, still offer historical significance (good or bad!), Good looks and flying characteristics, and a uniqueness that is sure to turn heads wherever you take your airplane!

Your airplane has many unique features in its design:

CAD Design

CAD design allows strength to be built into the airplane without sacrificing weight. Accurate parts design and placement ensures a perfect fit.

CAD Drawn Plans

The plans in this kit are not copied from a master set! They are originals drawn directly from the CAD program where the airplane was designed. We do this because it allows us to use colour, which helps you better visualize the various components of the airplane, and we can use better quality paper, which greatly reduces the possibility of shrinkage.

Since you're going to build directly on the plans, they ought to be the proper size! Also, parts placement is guaranteed to be accurate, so you can build a better, straighter model.

Small and hard-to-produce parts are simply a computer file away, so you get a more accurate airplane.

Lightening Holes

Lightening holes are cut into all ribs and formers where possible and justified. This allows us to keep the weight on each plane to a minimum without sacrificing strength.

The same program that generates the design and plans also drives the cnc cutter, so every part is reproduced exactly as it was designed. Cnc cutting also allows us to fit more parts on each sheet of

wood, reducing the waste, and lowering the cost to you.

Plastics

Several parts are accurately reproduced high quality Polystyrene, the canopy is made from PETG or Lexan

General Building Information

The Hawker Hunter 90MM can be built by a person with experienced building skills. It is not designed for someone who has built a trainer or low wing sport plane. No unusual building techniques are required, although more difficult areas are explained in detail where necessary. Certain steps in the building process must be followed as depicted, or you might find yourself digging back into the structure to redo something. These areas are outlined when necessary. Occasionally hints will be included at certain building steps. These are not required for completion, rather they are tips intended to ease a particular process. The cnc router does cut through the wood, as a result of this, occasionally there will be fraying on the surface of the wood. This is normal, and is only a surface problem and does not affect the wood in any other way. Similarly, the cnc settings are optimized for wood thickness averages, so occasionally, due to variations even in individual sheets, some areas might not cut through completely. Simply use care in cutting the parts from the sheets; most of the time, the parts will break out of the sheets!

Note that due the differences in wood thickness per sheet it is advisable to sand the tabs a bit so they slide in easy , also sand the openings so parts slide in easy , hard pushing parts have a high risk of breaking

Hardware and an edf unit are not included in the kit. There are so many choices for quality hardware that these choices are left to the individual preferences of the builder, rather than include something in the kit that you'll probably throw away anyway.

This aircraft is not a toy. It must be flown in a responsible manner according to the rules set forth by Law. The builder assumes the responsibility for the proper assembly and operation of this product. Rbckits shall have no liability whatsoever, implied or expressed, arising out of the intentional or unintentional neglect, misuse, abuse, or abnormal usage of this product. Rbckits shall have no liability whatsoever arising from the improper or wrongful assembly of the product nor shall it have any liability due to the improper or wrongful use of the assembled product. Rbckits shall have no liability for any and all additions, alterations, and modifications of this product.

Having said that, turn the page and start building the best airplane kits on the market!

Material you might need:

Balsa knife, Stanley knife, straightedge, building board 1500mm, ca glue medium, thin, thick you need approx. for wing and vertical stabilizer sheeting 4 bottles thick and 2 bottles medium for rib gluing,, fuselage 1 medium for formers ... thick for sheeting building nails, tape

Also use white glue, and canopy glue, epoxy for the canopy and cowls
Some drilling and bending tools, wire cutter, safety goggles etc. etc.

For finishing you need:

Glass 25 gram or japan paper 12 gr 3mtr and filler dope 1 litre, brushes sanding paper 60,120,180, paint of your choice

Wheels as on the drawing, controls, motor, battery etc.

All vacuumformings should be roughened up before gluing and primed before painting

Check the pictures for additional information; a picture says more as a 1000 words so do look at the pictures on the cd

Study the drawing and pictures to understand how the Hunter is build

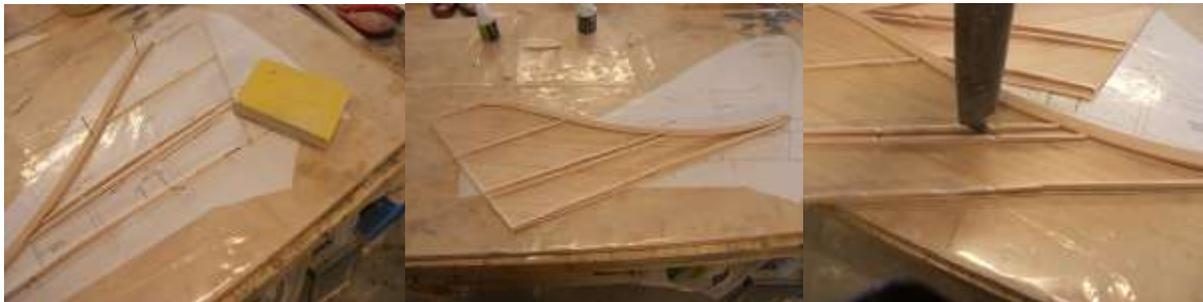
Important ! do mark all parts on the cnc sheets as per drawing there are a lot of parts that are looking similar, so mark them clear

Vertical Stabilizer:

Start by laying out all parts as on the drawing , you have to build 2 halves place formers and ribs as per drawing , cover drawing with plastic,carefully nail down parts.

Sheet the front with the cnc cut sheet part , sheet the back with a piece of 1,5mm balsa

Take off assembly from the drawing and clean up sides etc , etc , make the other half of the vert stabilizer.



Make a few cuts through the opening for the horizontal stabilizer , so it is easy found after assembly.

Join them with help from the dowels , do not glue dowels in yet .

Sand leading edge as per plan , place tip , place trailing edge capping, sand all to shape.



We finished the vert stabilizer with glass before adding the horizontal stabilizer

Cut out servo opening and place servo , cut wire openings both sides,

Place dowels , cut dowels to size after test fitting to fuselage

Horizontal Stabilizer:

Sand all edges as per plan , place 10x6 spruce in one side , place that side through vertical stabilizer, and place other side , use slow glue .

Elevator steering , both sides,



Use 1,2 or 1,5mm steel wire make Z-bends both sides , solder other side to main steering wire with help from some wire or brass tube , make sure travel is the same and aligned, when all is satisfying then glue steering arms into elevators

Wing:

Place wing drawing under a sheet of clear plastic.

Start by making the wing sheeting from 1,5mm balsa as per plan , see the templates for cutting the sheets and the wing top view for the glue template , do make oversize !



Take out all parts that are needed for the wings and clean them up with a sanding block from the small

holding tabs.

Set up the frame work with ribs and mainformers for the inner section first
(note if you do not want to make the split wing just make it in one piece use all parts)



Make sure the parts are sliding in smooth , to tight a fit can warp the parts , so sand if necessary.
Place formers without glue , when all parts are in ad a drop of glue here or there to hold the set.
Align all with the drawing , place the 6x12 helpformer under the set and nail down the parts onto the drawing.

Glue ribs and mainformers.

Place retract formers doublers from 12x3 ply, laminate a piece of 200gr glass between them for added strength , use white glue or epoxy for this ,adjust R4 and R5 to your retract size and sand top smooth to wing ribs.

place wing joiner formers as per drawing, with help from the spruce 15x6 and 12x3 do not glue the spruce into the formers !

Place scrap fill in bottom of retract formers and onto WJ2 to get a good connection with the bottom sheeting.

Make the outhter wing panel the same way on the drawing with help from the spruce wing joiners, make sure for straightness.

We decided to cut the sheeting as the wing parting line a bit oversize is very helpful.

Now draw up all formers and ribs onto the bottom sheeting as per drawing and place rib and former assembly on the sheeting , with the helpformer as it is a stiff set allready , line it out and glue middle parts with medium ca to the sheeting as start then glue on till all is glued to the formers, place sub leading edge to rib assembly , Note do not glue R2 to flap section bottom sheet if you are using flaps. Place outer sheet to bottom sheet so it lines up nicely,and place outhter panel with help from spruce joiners to inner panel carefully glue ribs and formers to sheet.Place MJ1 with some scrap balsa to TR1



Make the wing joiner fastener from the M3 set and ring with help from M3x30 fastener glue to the wing joiner parts .Place the outer wing part with the Joiner into the inner part , make sure it slides easy , mark WJ1 with help from the M3 fastener , drill 3mm.

Place fills into flap and aileron sections from 6x12 balsa strip.

Take of wing from building board , mark flaps and ailerons with your balsa knife sticking through the bottom sheeting.

Place servos for aileron and flaps, we wrap them in cellotape and glue them to the wing sheeting with a 1,5mm balsa doubler on the bottom sheeting and a 6x12 doubler at the top , sand flush with ribs , cut the servo arm openings and lead the wires through the openings.

For the outer panel servo we add a connector holder so you can glue in a servo extension wire to R3 so it is easy to plug in your tip panel servo wire.



sand all so there are no high spots and pin down the inner panel to the building board with help from the 6x12 helpformer for the correct washout, pin down the wing at the X marked points.



Cut the top sheeting , mark it with some lines from the inner panel as lead .

and glue top sheeting to inner panel assembly with thick ca or use slow white glue .

Take of panel and sand edges , place panel to building board.

Place tip panel with the wing joiners into inner panel ,pin down tip panel at the X marked spots remove inner panel,and place top sheeting, make sure it is close to the edges of the inner panel as this looks a lot better.

Sand all edges and place leading edge from 6x18 balsa , sand to shape as per plan



Join tip blocks and place to tip note that the leading edge at the tip curves a bit back so the tip should not be place at the front of the leading edge but a few (2)mm back sand tips with course paper and razorplane ,



Join wing parts with spruce joiners outer panels have the joiners glued in, they slide into the inner panels.

Now mark trailing edge as per plan and cut clear the trailing edge and sand , the wing is ready to place to the fuselage, or you can glass or paper it first , as it is easy to work on , also you can after finishing take out flaps and aileron .check disk for flaps and parts pictures.

For a close gap between the wing halves , tape inner panel with thin plastic and fill the edge of the outer panel with 5min epoxy , sand flush ..

Fuselage:

Take out all parts and clean up the small tabs on the parts .

Start with joining the formers that need to be joined,



Now start by adding formers to F11 , do not glue yet. The front part of the fuselage can almost complete done.



**Place the Duct formers F19 and F20 Place F25 with some puzzling and place formers . F29 and F30
Now F25 can carefully slide in place .**



**You can glue most formers in the nose section with thin ca , do not glue F19 and F20 yet
Place F46 and place all formers and sections as you can , you can add a drop of glue at some points if it
is helpful.
Place F34 both sides and place F24.**



Align Fuselage as much as you can and glue other parts with thin or medium ca.

Place duct insides from the cnc cut sheet 1,5mm balsa

place the wing joiner parts as per plan to formers F25 and F31.

Place the 3x6 balsa stringer on top and bottom of the fairing section.

Place the 3x8 spruce stringers in the fan section



Now place the duct lining ,cut as per plan from thick paper in 2 pieces , it can be done in 1 piece but it is a hard job.



When done place scrap 6x12mm balsa on the intake lips place 3x balsa on the ducts for strengthening as per plan.



Place 2x 2x12 sheet strip to bottom of fuselage use the centre former for aligning the strips.



Now nail down the fuselage assembly with help from some spare balsa scrap at the wing sections and tail section, btw better take out the inside of F42 before gluing to fuselage.

Place 2 strip sheeting 2x12 to top of fuselage , sand flat at stabilizer position and make openings for dowels and servo wire.

Temporarily Place Vertical stabilizer and Horizontal stabilizer assembly align with fuselage and use scrap balsa to nail down on work table

Make the outlet duct as per plan from stiff paper , carefully align with formers and fan section, note that the outlet of the fan is from plastic that slides into the outlet ducts.



When ducts are glued to the formers the fuselage is twist stiff so take care for alignment.

Place all wires you need for servo and motor

Place 3x6 stringers place F23 left and right, sand to shape

Place 3x8 spruce , place 3x12 ply at fan position

Now start sheeting fuselage with the 2x12 strip , join them with a diagonal joint when needed.

Mark fan unit hatch , the formers F35 will be ad in when hatch is cut out



Mark front retract hatch , , you can make a working hatch or make a tight fit hatch around the retract .
 Clean up at the wing fairings and place scrap balsa at the intake to take the sheeting, sand to the formers ,Place wing fairing top and bottom..clean edges sand strip planking.
 Place stabilizer set.
 Place nosecone with Dowel.



We finished the Hunter fuselage with thinned superlight filler , brush it on , sand with 60 grit, the glass the fuselage.

Place inner wing panels to fuselage making sure for alignment, use slow glue or epoxy to glue spruce joiners in, you can do a bit of aligning without the 6mm dowel.



Glass the wing joint with epoxy and 120gr glass,
 Fill the epoxy and sand all smooth panels should be glassed before this

Canopy:

Make the canopy frame as per plan , split the canopy at the fuselage backbone,glue the canopy closing with epoxy to the formers.



**Make the canopy fit to the frame and fuselage , cut oversize and make fit
place canopy instrumentpanel top sheet from paper**

Clean canopy with window cleaner so you greasy fingers do not show up on the canopy when the ca is fogging,

Place canopy to fuselage with canopy frame with a few drops ca when satisfied take of assembly and ca canopy to frame .

Fitting the edf unit:

You have to make a cut in the side stringers to put in the edf unit so a extra layer of 3mm ply is added to that side.



Make the outlet tube from the supplied pvc sheet as per plan , do fit and try , we use cello tape to yoin the plastic, make openings for wiring , place tube into exhaust tube in fuselage , then slide forward over fan unit and fasten with tape ,



Finishing:

The whole wing is covered in 12gr japan paper and doped with filler dope, **DO NOT USE SHRINKING DOPE EVER.**

Filler dope is not too hard to sand, and filled with some extra talcum powder sands great and smooth, when ready a thinned layer of sanding dope is OK

The airframe is filled with lightweight filler thinned down to ad it with a brush , sand with 60grit, then finish with 25gr glass and polyurethane 1K add a bit of talcum powder to get a smooth finish
Now finish with... Vallejo, humbrol or we used cheap spray cans... take care for the vacuumformings as some paints will not hold as good, or worse will dissolve or make it brittle, use a primer

Canopy:

Cut oversize... And test fit to fuselage, clean with window cleaner , do not ad your greasy fingers to it,glue with canopy glue, or ca and make it lively with pilot, radios, etc. The canopy framing can be painted on.

The retract legs are made from bend steel wire that works best on a grass bouncing airfield, the front leg is a commercial product, you can use any as long it is not to flex .

The scale wheel cover for the main wheels are to large for a grass field , shorten them or suffer.

The front retract hatch is closed with wiring as per plan do try with a thin plate to close , we also used a wire glued to the front leg for opening and holding the hatch.

Alternative, you can cut out the hatch , place retract , and make a narrow fitted opening around the wheel set place hatch with tape to hold , so no moving hatch then.

Have you found an error in the drawing or parts or instructions, just mail us at info@rbckits.com

I am sure we can find a solution for your build.

Some tips:

We used electric retracts for the Hawker Hunter 90mm, and we used a separate battery for the retracts this makes it safer, air set is also possible, the weight difference is none

Flying:

The Hunter 90mm easy lifts of and is easy to fly and is very fast,you do need flaps for take-off 12mm!, landing: plan it in and land it as usual but do not make it to slow flaps working 12-20mm more flap will make the hunter very sensitive on the ailerons .the Hunter 90mm glides very well with wheels in in case of

A 8S battery is powerful enough, or Turbine

Throws of the rudders etc., we like them big, we steer just around the centre of the sticks but it might be too much for you, so always, make them large and have a dual rate button in your fingers, to small throws is most of the time problems, to large... it is in your fingers

If you need additional pictures,check the disk or just ask.

Have Fun with the Hawker Hunter 90MM

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Some items used in the Hunter.

Servoless Retract with Metal Trunion 44mm x 41mm Mount (2pcs)

https://hobbyking.com/en_us/servoless-retract-with-metal-trunion-44mm-x-41mm-mount-2pcs.html

Servoless Steerable Nose Retract with Metal Trunion 44mm x 41mm Mount

https://hobbyking.com/en_us/servoless-steerable-nose-retract-with-metal-trunion-44mm-x-41mm-mount.html

Servo Corona CS939

https://hobbyking.com/en_us/catalogsearch/result/?cat=&q=cs939