P-51 Mustang

250 Warbird Series

LESS THAN 250 GRAMS! NO FAA REGISTRATION REQUIRED!

BETA KIT

WARRANTY

Willy Nillies guarantees this kit to be free from any defects in both material and workmanship at the time of purchase. This warranty does not cover ANY components or parts damaged by use or modification. In no case shall Willy Nillies' liability exceed the original cost of the purchased kit. Willy Nillies reserves the right to modify or change this warranty without notice.

LIABILITY RELEASE

In that Willy Nillies has no control over the final assembly or material used for final assembly, no liability shall be assumed or accepted for any damage resulting from the use by the user of the final user assembled product. By the act of using the user assembled product, the user accepts all resulting liability. If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return the kit immediately in new and unused condition.

PRODUCT SUPPORT

This product has been designed to function properly and perform as advertised with the SUGGESTED power system, speed control, and servos, as described in advertisements and in this manual. For the proper electronics to complete this model, replacement parts, and product assembly questions, please contact us online at www.WillyNillies.com

Our aircraft are built from self-jigging interlocking laser cut. balsa and plywood parts. It's like a 3D jigsaw puzzle with instructions. Full size plans are NOT INCLUDED or needed to assemble our kits. If the instructions are read beforehand and followed during the build, our kits can be built up and ready to fly in only 2 to 4 evenings. We think you'll like the super simple construction and flying qualities of our kits and look forward to any feedback you might have.

Sincerely,

Douglas Hart
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PLEASE VISIT OUR WEBSITE and Builders Group FOR CURRENT BUILD INSTRUCTIONS, VIDEOS AND UPDATES

Introducing the Warbird Series P-51 250 Wing Planform

This wing is designed around the .020 size Nitro and Brushless Electric Motors for single Wing Models. The Clark Y airfoil is a versatile planform, and the airfoil basis has been used on many popular designs throughout Aviation.

This wing was designed for our Warbird Series of Aircraft and has been made available for our Customers to design their own aircraft around as this Dual Taper design and slightly smaller size to come in well under the 250 gram weight limit for the proposed FAA RID rules. This means NO FAA rules or regulations for designs with this wing in the 250-gram Class! Fly it at your local park or school yard (with permission of course) or your own large yard!

As with all our designs, we have designed it to have interlocking parts. Building the wing is a snap and takes less than 1 hour for experienced builders to frame up and have ready for covering! Beginners should allow a couple of hours and maybe a visit to our builders group to get any questions they have answered quickly.

P-51 250 Wing specs:
Wingspan: 23"
Wing Chord: Root – 5.5", Tip – 3.75”
Wing Area: 106.375 in/sq
Dihedral: 0 to 6 degrees
Recommended Design Flying weight: Brushless or Glow: 5.0-6 ounces.
Wing loading: 6.76 oz/sq ft to 8.11 oz/sq ft.
Wing CUBE Loading: 7.9 to 9.4

Features:
Clark Y flat bottom airfoil
Laser cut self-jigging construction - The entire Wing can be built and ready to cover in less than 1 hour!
Full length shear web style main spar.

Includes:
All wood pieces to build the entire Wing
3 Styles of Wing Tips

Recommended Additions:
2 cover packs for a 2-color covering scheme to cover entire Wing, 1 Cover pack would be required for a single color.

General Practice for assembly:
Join all your pieces using thin CA (Cyanoacrylate) glue, unless we tell you otherwise. In general, only a small amount of CA is necessary to glue parts together. Use of a capillary tube is HIGHLY recommended.

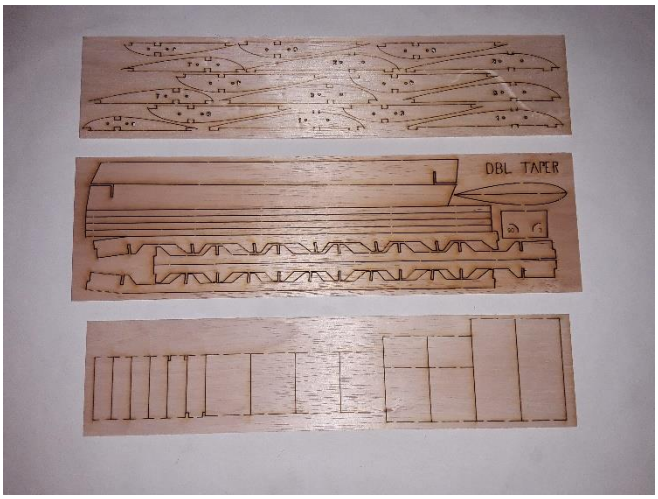
Do not over force your pieces together. If they are not fitting together properly, make sure you have the right pieces and they are oriented correctly. If needed, you can lightly sand the part to fit. On balsa "tabs", you can "pinch" the wood with your fingers to get them to fit in slots. (The tabs might be tighter sometimes, due to tolerances in wood thickness)

Video Instruction:

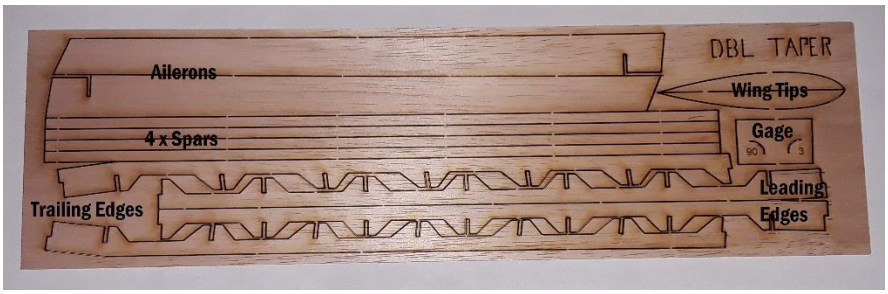
Wing Assembly Guide:

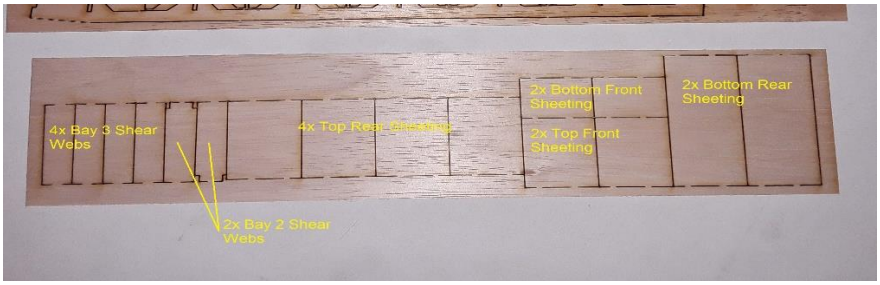
This guide is a list of steps accompanied with photos on how to assemble the Willy Nillies Wee Series Sioux Wing and follows the information provided by Willy Nillies with input from the FaceBook Builders Forum. All our kits share nearly the same construction techniques with only very minor differences. As with any Beta Kit there may be recommended modifications and updates available. **Always** check the documentation that comes in your kit.

Like all the Willy Nillies kits, the wings have been designed to be self-jigging and can be assembled on a flat surface without pins or weights.



Top Row: Wing Ribs, numbered for convenience.
Second Row: Spars, Leading and Trailing Edges, Ailerons, Wing Tips, Dihedral Gage 90/3 degree.
Third Row: Wing Center Section Sheeting, Shear Webs

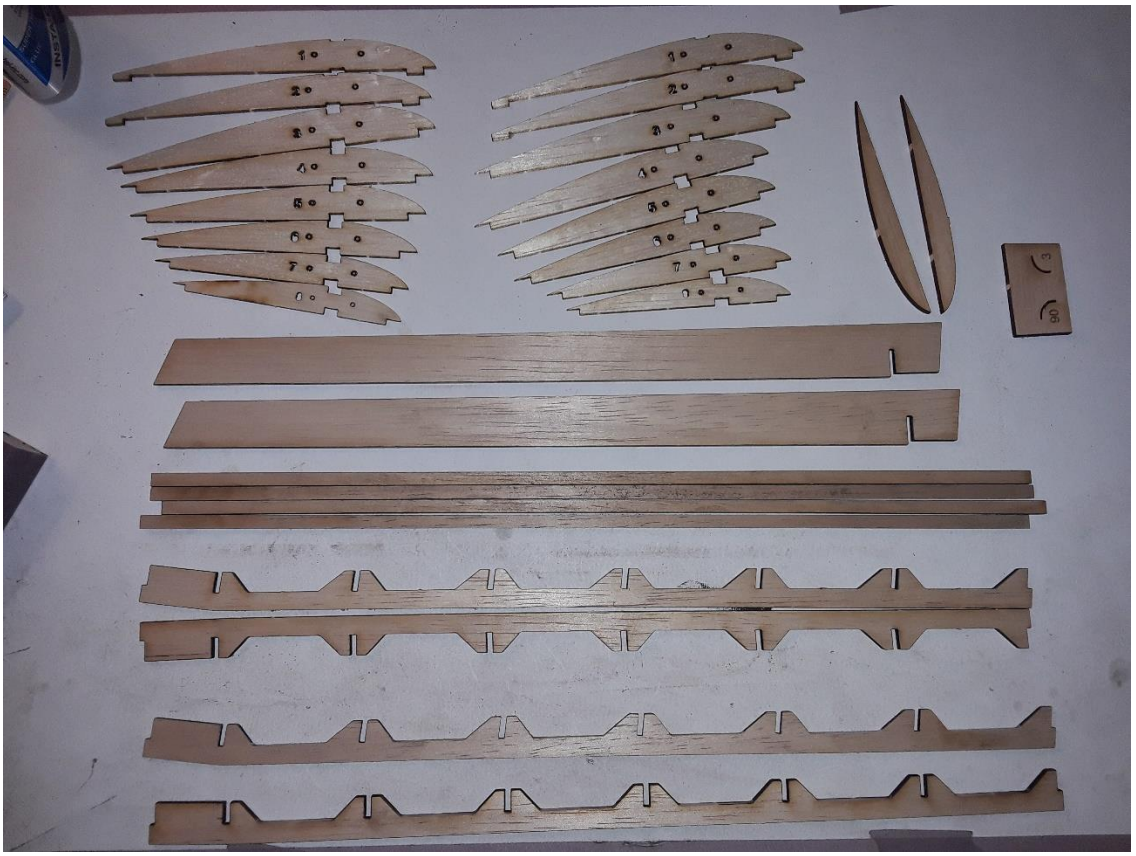




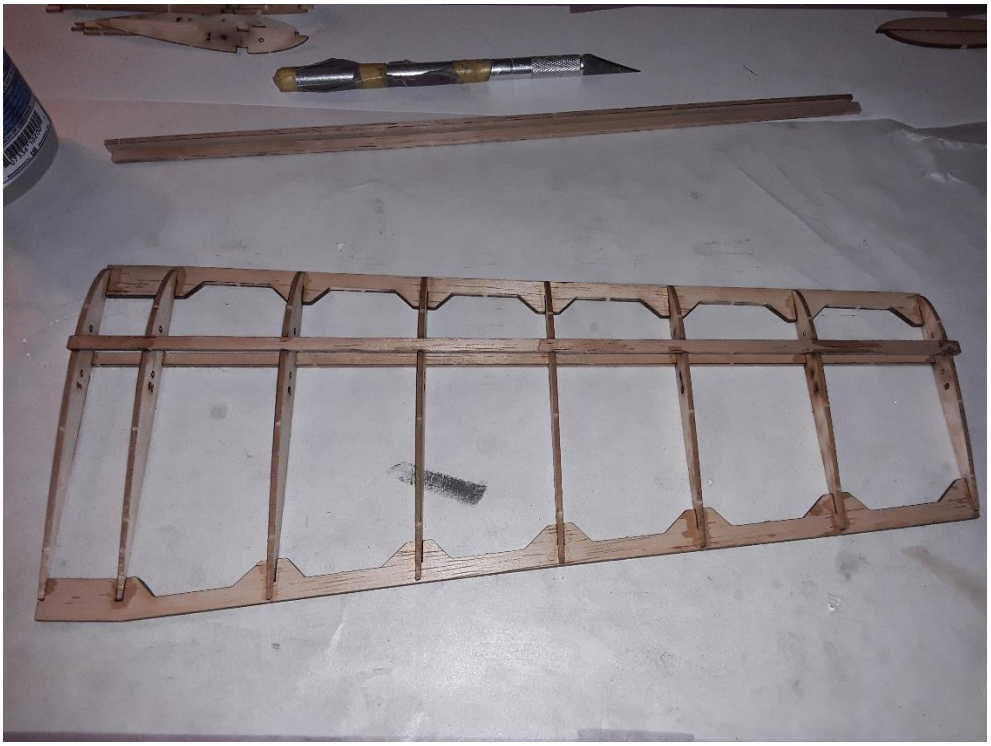
Carefully punch out the parts. A light sanding will remove any nubs from the laser process so that parts will lay flat in position.

The Leading and trailing edges are identified in the above pictures, there is more Taper in the Trailing Edges than in the Leading Edges. You will need to ensure that when you assemble the wing panels that the ends with the Angles are at the Root (Center) of the wing. Make sure you lay out a Right and Left.

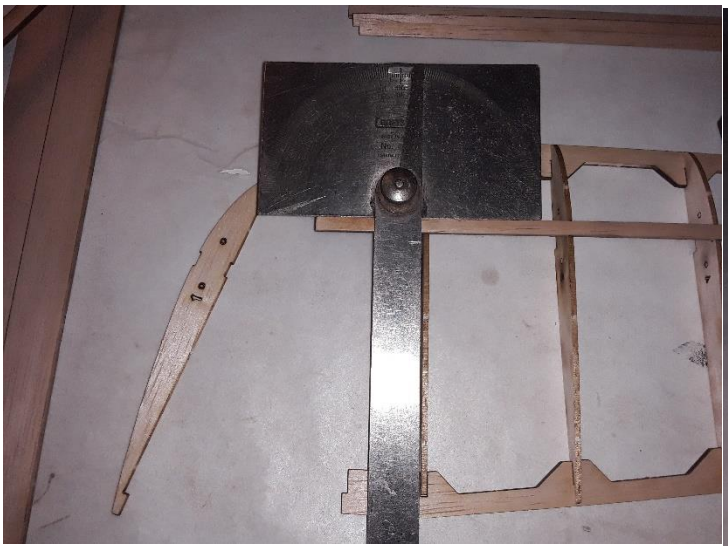
This picture shows the Ribs are numbered and laid out in order.



All the punched-out parts of the Wing laid out in preparation to build. Note the Dihedral gage imprinted with the angles on the right of picture.



The first picture shows the layout of the wing panel as a Right, with the smaller ribs for the center section sheeting placed at the Root ends of the Leading and Trailing Edges.



A good building habit is to ensure the squareness of the wing before gluing. Once you are satisfied with the fit and squareness, glue up the assembly using Thin CA.

Once you have the assembly glued up you can install the Root and Tip Ribs and glue them in place. Ensure that the Root Rib is the smaller undercut center section Rib and set the preferred Dihedral angle. The Gage gives you a choice of 3 degrees, this will be 6 degrees total when finished, or, 90 Degrees for a Flat wing with no Dihedral.

With the Ribs in place, the bottom Sheeting can be fit and glued setting the edge flush with the edge of the Root Rib.

These pictures show the sanded angle in the top sheeting where it meets the Leading and Trailing Edges. Medium CA was applied to the sanded edge and installed. You can see how the angle fits the junction of the Leading Edge and the Rib. Apply Medium CA to the top of the Spar and roll the sheeting down. Use Thin CA along the Rib/Sheeting edge to finish the bond. (File pictures used for Reference)

The Rear Sheet is sanded and installed in the same manner to finish the Top Sheeting.

The completed sheeting will overhang slightly because of the Dihedral angle of the Rib. Block sanding the sheeting flush to the Rib will clean up the overhang and prepare the Wing Panel for joining.