



Award Winning Model Designs™

Helio Courier



Herr Engineering Corp. HRR112



ASSEMBLY INSTRUCTIONS

Your kit contains the following parts. Please check your kit for any missing or damaged parts before starting construction.

COMPLETE KIT PARTS LIST

1	Plan Sheet	1	Decal Sheet	2	White Tissue
1	Red Tissue	1	1/16"x12" Landing Gear Wire	3	6"x3 1/4" Windshield Plastic
16	1/16" sq. x18" Balsa Strip	18	3/32" sq. x18" Balsa Strip	2	1/8" sq. x18" Balsa Strip
6	3/32"x1/4"x18" Balsa Strip	1	3/16"x1 3/4" Birch Dowel	2	1/2"x3/4"x4 3/4" balsa wing tip block
1	Tail Wheel Assembly	1	Instruction Manual	1	Molded Plastic Propeller
1	Propeller Shaft	2	Brass Washer	1	Nylon Propeller Bearing
2	Plastic Wheels	1	3/16"x60" Rubber Strip	2	Plastic Wheel Retainers
5	Laser Cut Sheets				

Tools and Building Supplies

You will need the following items to assemble this model. You must read and follow all of the manufactures instructions provided with these items!

-Glue

CA, White Glue, Sigment or Ambroid all work well.

-Cutting Tools

A hobby knife with a #11 blade is used for general cutting. A single edge razor blade is also a useful cutting tool.

-Clear Dope, Thinner & paint brush

-320 and 400 grit sandpaper

-Straight Pins

-Wax Paper

-Needle nose pliers

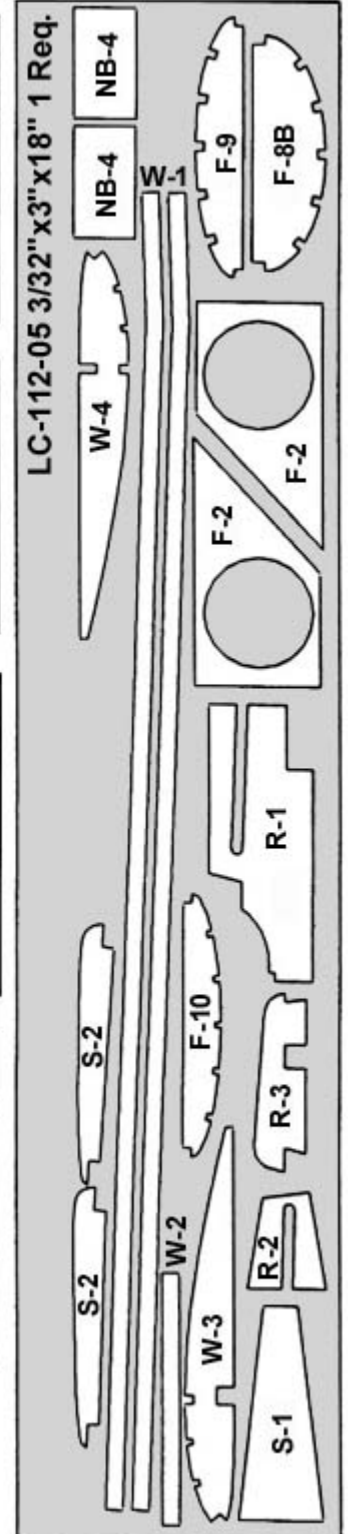
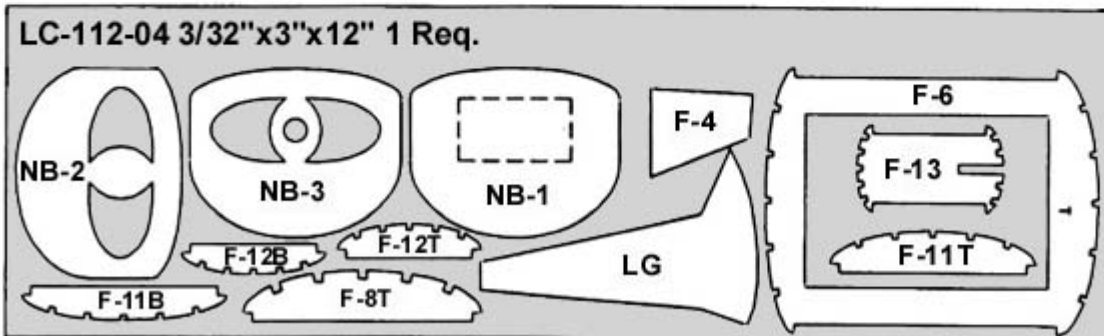
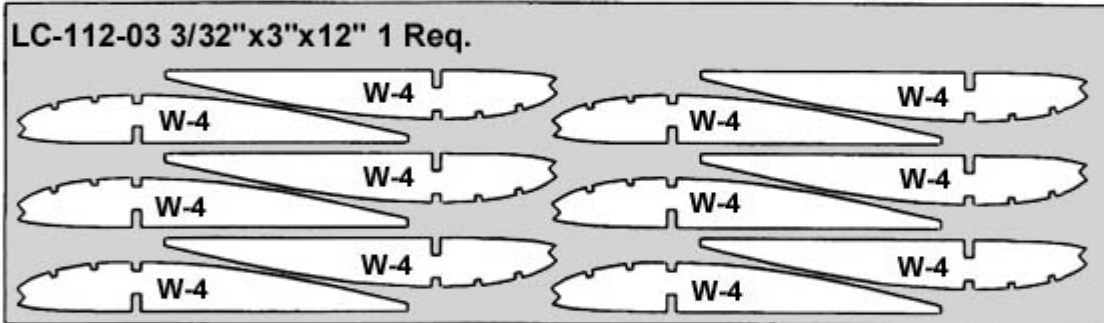
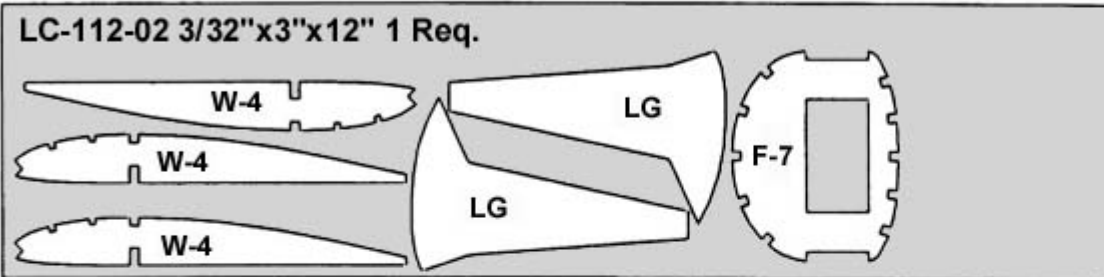
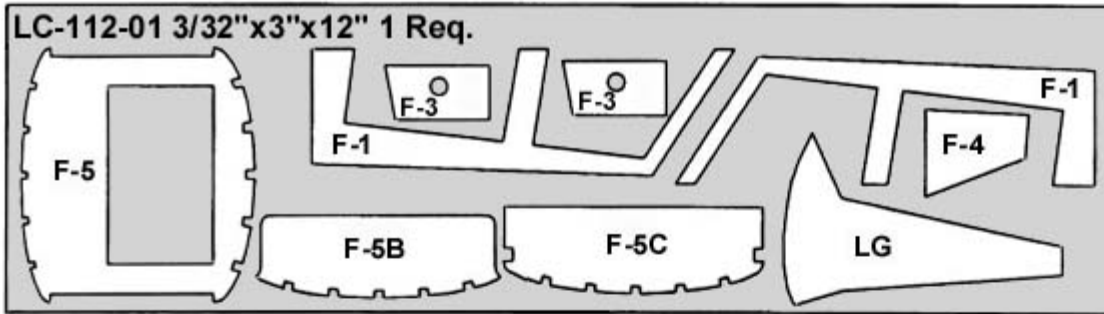
-1/4" Drill Bit

-Building Board

The first thing that you need to do is to identify and mark the part numbers on the laser cut parts using the drawings on the following pages as a guide.

It is possible that several of the laser cut parts may not be completely cut through. If this is the case you can free the part from the sheet quickly using an X-acto knife.

NOTE: The slight discoloration on the edges of the laser cut parts may be removed by lightly sanding the edges with 400 grit sandpaper.



Building the Tail Surfaces

1. Always cover the plan with wax paper before building any parts over the plan. This will prevent the parts from sticking to the plan.
2. Build the rudder over the plan using parts R-1, R-2 and R-3. The remainder of the structure is made from 3/32" sq. balsa strip and 3/32" x 1/4" balsa strip as shown on the plan.
3. Build the stabilizer over using parts S-1 and S-2. The remainder of the structure is made from 3/32" sq. balsa strip and 3/32" x 1/4" balsa strip as shown on the plan.
4. When the glue is dry, remove the rudder and stabilizer from the plan and sand the surfaces smooth and round the edges. Test fit the stabilizer into the slot in the rudder. Now set these parts aside until needed later.

Building the Wing

5. The wing is built in one piece. The first step is to pin the main spars W-1 to the plan and join them using part W-2. This will also establish the proper dihedral angle.
6. Pin the center section of the joined spar into position over the plan. Cut and pin into position the 3/32" x 1/4" trailing edge for the center section.
7. Glue rib W-3 and the adjacent two W-4 ribs to the lower spar and the center section trailing edge.
8. Cut the 3/32" sq. top spar, the 1/16" sq. strips and the 1/8" sq. leading edge to length and glue into position on the wing center section.
9. Remove the pins from the wing center section and rotate the wing so that the right bottom spar is in full contact with the plan. Place this spar in the proper position on the plan and pin the spar to the plan.
10. Cut the 3/32" x 1/4" trailing edge to length and pin it into position over the right wing plan.
11. Glue seven W-4 ribs into position to the bottom right spar and the trailing edge.
12. Glue the 3/32" sq. top spar into position.
13. Glue the 1/8" sq. leading edge into position. Glue the 1/16" sq. strips into the notches in the top front of the ribs.
14. Remove the pins from the wing assembly and rotate it so that the left bottom spar is in the proper position over the plan and pin the wing into position.
15. Build the left wing panel as you did the right.
16. Remove the wing from the plan and glue the wing tip blocks into position.
17. Sand the wing smooth all over. Sand the wing tips to shape, taper the trailing edges and round the leading edges.
18. Set the wing aside until needed later.

Building the Fuselage

19. Build the two fuselage side frames over the main plan using parts F-1, F-2, F-3 and F-4. The remaining pieces of the side frames are made from 3/32" sq. balsa strips.
20. Glue the 3/32" sq. strips to the rear face of formers F-5 and F-6 as shown on the plan.
21. Position Formers F-5 and F-6 onto one of the side frames. Make sure that they are 90 degrees to the side frames and glue them into position.
22. Glue the opposite side frame to formers F-5 and F-6.

23. Crack the side frames just behind former F-6 at the locations shown on the plan. Pull the rear of the fuselage together and carefully glue together making sure that the aft fuselage is straight and true.
24. Glue former F-7 into position at the front of the fuselage.
25. Glue formers F-8T and F-8B into position.
26. Glue F-9 into position on the fuselage as shown on the plan.
27. Glue the two 3/32" sq. cross pieces into position between the fuselage sides in the upper cabin area.
28. Glue F-10 into position. Glue two 3/32" sq. reinforcements inside the side frames between F-10 and the cross piece at the top of the cabin.
29. Glue F-11T and F-11B into position.
30. Glue F-12T and F-12B into position.
31. Glue F-13 into position.
32. Bend the landing gear wire to the shape shown on the plan.
33. Glue the landing gear wire into position on the front of F-5.
34. Glue F-5B and F-5C into position trapping the landing wire into place.
35. Glue the 3/32" sq. strips into position on the top of the nose between F-7 and F-9.
36. Glue the 3/32" sq. strips into position on the bottom of the nose between F-7 and F-5B.
37. Glue the 1/16" sq. strips into position on the bottom rear fuselage between F-5 and the aft end.
38. Glue the rudder to the rear of the fuselage. The forward end of R-1 fits into the slot in F-13. Use care to make sure that the rudder is straight and aligned properly.
39. Glue the 1/16" sq. strips to the top rear of the fuselage between F-6 and the tail.
40. Glue the nose block pieces NB-1, NB-2, NB-3 and the two NB-4's together.
41. Fit the nose block to the front of the model. Now sand the nose block to shape. Also, sand the entire fuselage smooth at this time.
42. Drill the nose block for the 1/4" dia. nylon nose bearing. Be careful to maintain the proper amount of right and down thrust.
43. Laminate two pairs of parts LG. Sand them to a streamline cross section and test fit into position on top of the landing gear wire. The top edge of these parts will need to be beveled to fit flush with the side of the fuselage.

Covering The Model

44. Sand the entire model with 320 grit sandpaper.
45. Coat the outside edges of all parts with 2 coats of clear dope.
46. Attach the tissue to the model with clear dope mixed 50/50 with thinner.
47. Lightly mist the model with water to shrink the dope.
48. Apply 2 coats of thinned clear dope to the entire model.
49. Attach colored trim tissue with clear dope.

50. Apply the decal numbers to the model.
51. Draw additional detail onto the model with a waterproof marker.

Final Assembly

52. Glue the wing to the model.
53. Cut P-1 from the plan and glue it to the top of the wing at the center section trailing edge.
54. Cut, fit and glue the 1/16" sq. strips into position from the front edge of P-1 to F-6.
55. Cover this area with tissue as you did the rest of the model.
56. Glue the stabilizer into position making sure that it is straight and aligned properly.
57. Cut, fit and glue the side windows into position.
58. Cut the windshield to the shape shown on the plans and fit it to the model. When the proper fit has been achieved, glue the windshield to the model.
57. Glue the landing gear fairings to the model.
58. Assemble the plastic wheels and secure them to the model with the plastic wheel retainers.
59. Assemble the tail wheel and glue to the fuselage.
60. Assemble the propeller. Glue this assembly into the removable nose block.
61. Tie the rubber motor and install it along with the nose block. Retain the motor at the rear of the fuselage with the 3/16" dowel provided.
62. Balance the model at the position shown on the plan.
63. Your Helio Courier is now complete.

Beginners Note

These instructions were written assuming that the builder has previous building experience. If this is your first model then we recommend that you purchase a copy of the following book:

Rubber Powered Model Airplanes By: Don Ross

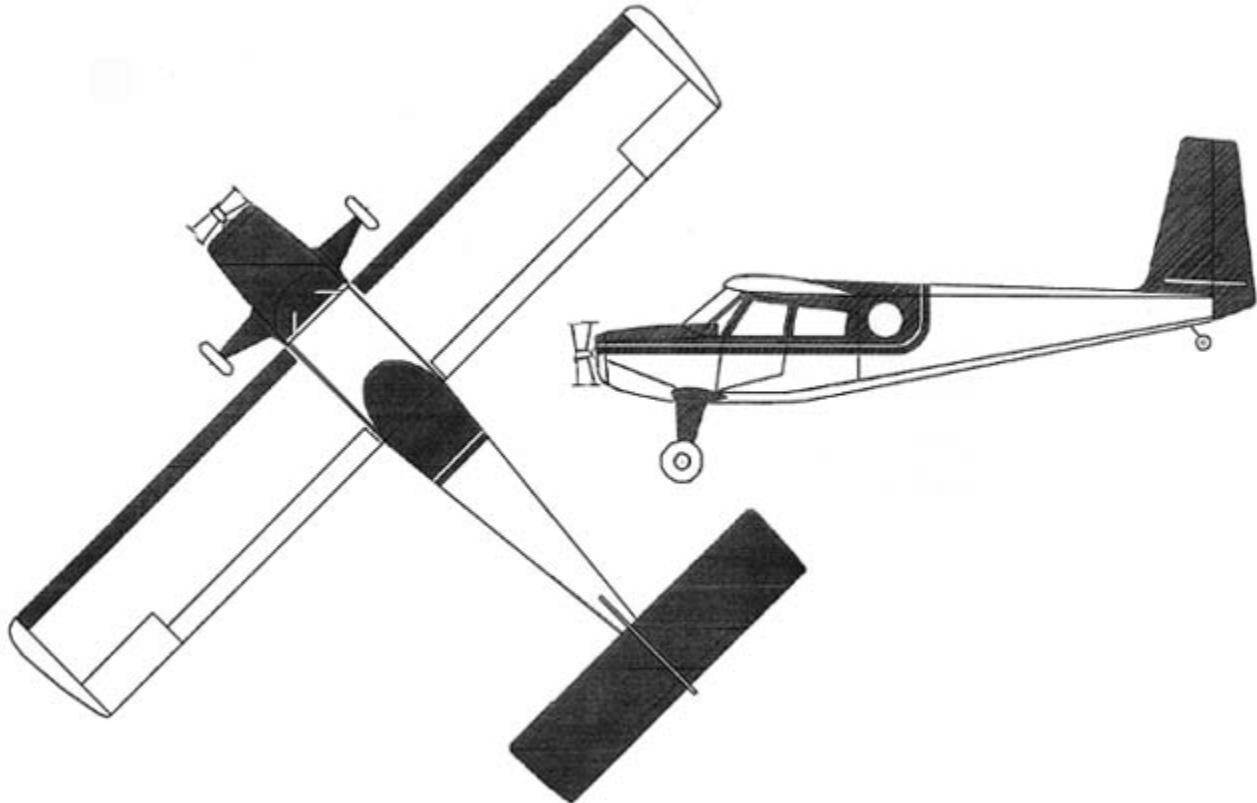
This excellent book covers basic building and flying procedures and provides valuable information about all aspects of building and flying rubber powered model airplanes.

Safety Rules

1. Fly your model in a large open area that is free of obstructions, people or their property.
2. Do not fly your model in the vicinity of power lines, trees, streets or buildings.
3. Never try to retrieve any model stuck in power lines, in trees or on a roof or other high place. Never run into the street to retrieve your model.
4. Position yourself at least 150' from spectators before launching model.
5. Never launch model directly at another person or other object.
6. Never stick your fingers into a spinning propeller. Do not try to stop a spinning propeller with your hand or fingers. Never stick any object into a spinning propeller.
7. Fly your model only on calm days. Do not fly when the wind is blowing.
8. Get proper permission before retrieving your model from private property.

Your First Flights

1. Make sure that all flying surfaces are straight and warp free.
2. Wind the motor about 100 turns.
3. Point the nose of the model into any gentle breeze that may be blowing.
4. Release the propeller and after it starts turning gently toss the model aiming the nose at a point on the ground 100' in front of you. Adjust the model to circle while gradually increasing the number of turns in the motor. Adjustments can be made by gently bending the tail surfaces and wing trailing edge.
5. A properly trimmed model will circle to the left while climbing under power, level out as the power runs down and transitions into a right hand circling glide.



WARRANTY

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If the buyer and/or user is not prepared to accept all of the liability associated with this product, he is advised to immediately return this kit in new and unused condition to the place of purchase for a full refund.

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