



Award Winning Model Designs™

Piper Cherokee



Herr Engineering Corp. HRR504



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

Wood Bag:

1 LC-504-01	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-504-02	3/32"x4"x24" Laser Cut Balsa Sheet
1 LC-504-03	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-504-04	3/32"x4"x24" Laser Cut Balsa Sheet
1 LC-504-05	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-504-06	3/32"x4"x24" Laser Cut Balsa Sheet
1 LC-504-07	1/16"x3"x4 1/2" Laser Cut Birch Ply	6 Leading Edge and Spars	1/4" sq.x24" Balsa Strip
7 Leading Edge & Fuselage Stringers	3/32" sq.x24" Balsa Strip	2 Wing Tips	3/4" Balsa Triangles 7 1/4"
4 Trailing Edge	1/16"x1"x24" Balsa Sheet	2 Rudder Fairing Block	3/4"x3/4"x3 1/4" Balsa Block
2 Main Landing Gear Blocks	3/8"x1/2"x3 1/2" Grooved Hardwood Block	1 Cowl Blocks and servo rails	1/4" sq.x12" Spruce
2 Control Surface Pushrod	1/16"x18" Wire, Threaded One End	2 Throttle and Nose Gear Pushrod	1/16"x10" Wire, Threaded One End

Misc. Parts Loose in Box:

1 Center Section & Fuselage Sheet	1/16"x3"x36" Balsa Sheet	1 Fuselage Stringer	3/32"x3/16"x36" Balsa Strip
1 Plan Sheet # 1		1 Plan Sheet #2	
1 Decal Sheet		1 Instruction Book	
2 Main Landing Gear Wire		1 Molded Plastic Cowl	
1 Molded Plastic Canopy			

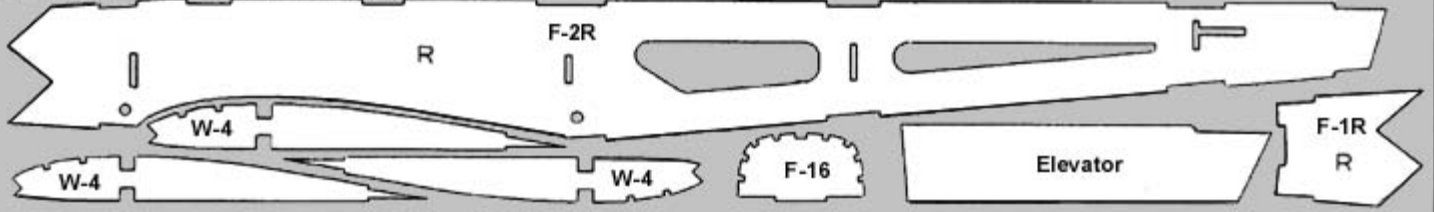
Hardware Bag:

2 Control Horn	Small Nylon Control Horn	4 HornScrew	2-56 x 3/8" Machine Screw
1 Elevator Joiner	1/8" x 3" Birch Dowel	4 Cowl Attach Screw	#2 Sheet Metal Screw
4 Nylon Clevis	Small Nylon Clevis	2 Wing Dowels	3/16" x 4" Dowels
4 Main Landing Gear Attach Screw	#4 Sheet Metal Screw		

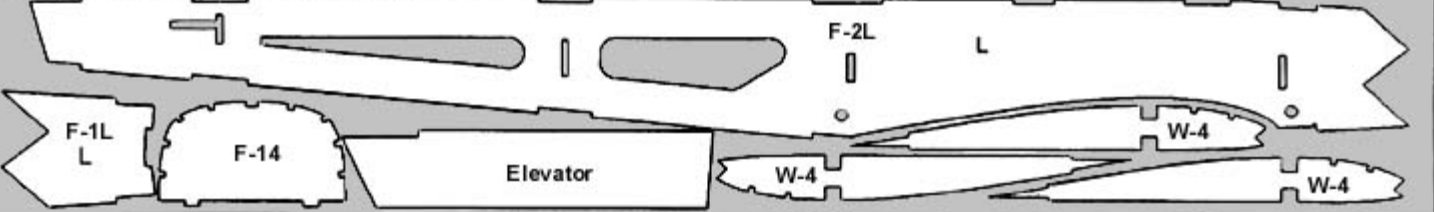
Nose Landing Gear Bag:

1 Nose Gear Wire	3/32" Pre-Bent Wire	1 Nose Gear Bearing	Molded Nylon Bearing Block
1 Steering Collar	3/32" Collar	1 Steering Arm	2-56 x 1/2" Threaded Stud
1 Steering Arm Fitting	Molded Nylon Fitting	4 Mounting Screws	2-56 x 3/8" Machine Screws
4 Mounting Nuts	2-56 Nuts		

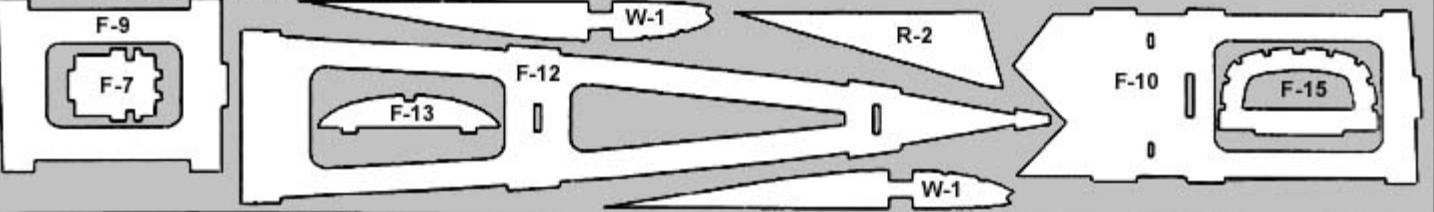
LC-504-01 3/32"x4"x24" Balsa 1 Req.



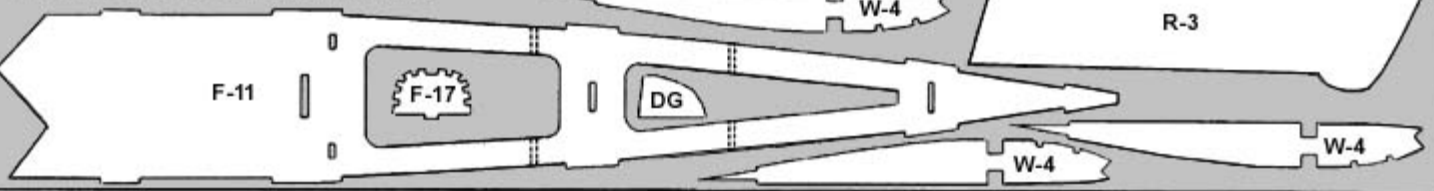
LC-504-02 3/32"x4"x24" Balsa 1 Req.



LC-504-03 3/32"x4"x24" Balsa 1 Req.



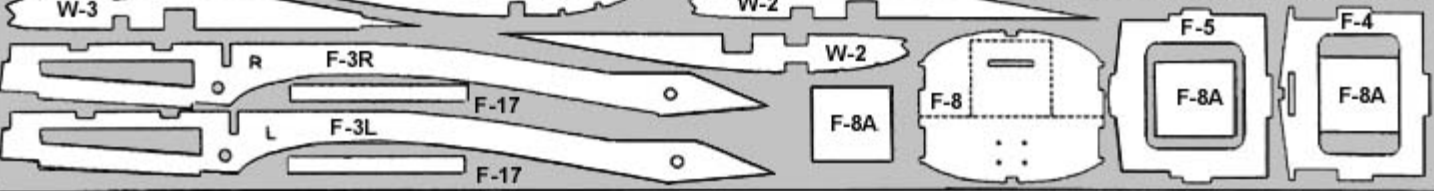
LC-504-04 3/32"x4"x24" Balsa 1 Req.



LC-504-05 3/32"x4"x24" Balsa 1 Req.



LC-504-06 3mmx4"x24" Poplar Ply 1 Req.



LC-504-07 1/16"x2"x4 1/2" Birch Ply 1 Req.
Dihedral Braces

Cutout patterns for LC-504-07, a Birch Ply part. The patterns are three parallel, slightly curved rectangular strips.

Additional Items Required (Not Included in Kit)

Note: These are parts that we have used and are familiar with. There are many other brands available and you may substitute other items that you are more comfortable with or have on hand.

1	Engine	Norvel Big Mig .049 or Norvel Big Mig .061	3	Hinges	Sig Easy Hinges # SH-710 or Du-Bro Kwik Hinge #537
1	Motor Mount	Dave Brown #0506	4	Motor Mount Screws and Blind Nuts	4-40x3/4" Machine Screws and Blind Nuts Sig #SH-111 or Du-Bro #129
1	Fuel Tank	Sullivan loz. #SS-1 or 2oz. #SS-2	1	1/2-A Fuel Line	Sig #SH-288 or Du-Bro #221
4	Servo Connectors	Sig #SH-736 or Du-Bro #121	1	White Covering Material	1 Roll Top Flite Monokote and matching paint
1	Red Covering Material	1 Roll Top Flite Monokote and matching paint	1	Propeller	Grish Tornado 6-3 Nylon Propeller #GRIQ1050
8	Rubber Bands (wing attach)	Sig #SH-340	3	3/32" Wheel Collars	Sig #SH-585 or Du-Bro #138
2	Main Wheels	Dave Brown Lectra Lite Wheels #5620	1	Nose Wheel	Dave Brown Lectra Lite Wheel #5617
3	Wheel Bushings	Make from K&S Brass Tube #127			

General Note: Cover the plans with wax paper before assembling your model to prevent the parts from sticking to the plan.

Building the Tail Surfaces

1. Join R-1 and R-2 together over the plan. Temporarily hinge the rudder (R-3) to the fin. Do not glue the hinges at this time.
2. Join the elevators using the 1/8" dowel. Use the plan and the stabilizer as a guide. Trim the dowel if required to achieve the proper length.
3. Temporarily hinge the elevators to the stabilizer. Do not glue the hinges at this time.
4. Sand the tail surfaces smooth and round all of the edges except the bottom edge of the fin.

Building the Fuselage

5. Assemble the left fuselage side. Glue parts F-1 (L) and F2 (L) together as shown on the plan. The letter "L" is on the inside of the left fuselage side parts and should face up on all the parts. When the glue is dry, glue part F-3 (L) into position on the inside of the left fuselage side.
6. Build the right fuselage side as you did the left. The parts for the right fuselage side are marked with an "R" on the inside of each piece.
7. Place the right fuselage side on the building board and place formers F-4 and F-5 into position. These formers should be 90 degrees to the Fuselage side. Glue the formers to the fuselage side. Now place the left fuselage side into position and glue to the formers.
8. Gently squeeze the aft end of the fuselage sides together and hold with two clothes pins. Glue the 3/32"x3/16" braces to the front of former F-6 as shown on the plan. Place the formers F-6 and F-7 into position and glue them to the fuselage sides. Glue the aft end of the fuselage sides together making sure that the joint is straight and not leaning to the left or right.
9. Glue the firewall (F-8) into position on the front of the fuselage sides. You must crack the firewall at the dashed line cut into it so the bottom half angles forward as shown on the plan. When the firewall is in place, apply a line of glue to the front and back at the cracked line.
10. Glue part F-9 into position.
11. Glue parts F-10 and F-11 together to form the fuselage top.
12. Place the fuselage top into position. Glue the fuselage top to formers F-4 and F-5 and to the fuselage sides between these two formers.
13. Glue the fuselage top to F-8 and to the fuselage sides from F-8 to F-4.
14. Working from the F-5 to the rear, gently pinch the fuselage sides into contact with the fuselage top and glue together. Now glue the fuselage bottom (F-12) into position.

15. Fit parts F-13, F-14, F-15 and F-16 into position on the fuselage top. The formers should be 90 degrees to the fuselage top. Glue both parts F-17 (fuel tank supports) into position.
16. Glue the 3/32" x 3/16" top stringer into position between formers F-14 and F-17. Now glue the 3/32" sq. stringers into position.
17. Glue the three parts F-8A into position on the front of the firewall.
18. Mount the motor mount on the front of F-8A. Use 4-40 screws and blind nuts. Glue the blind nuts to the rear of the firewall to hold them securely into position. Mount the nose wheel bearing to the firewall with the screws and nuts provided. Notch out F-9 as required for clearance around the lower nuts.
19. Glue parts F-17 into position.
20. Assemble the fuel tank. Drill holes in the firewall for the fuel line, the vent line, the nose wheel steering pushrod and the throttle pushrod.
21. Mount the fuel tank and the fuel and vent lines into the model. The fuel tank can be held into position with thin servo tape between the tank and parts F-17.
22. Remove the motor and mount from the model.
23. Glue the 3/32" x 3/16" strips into position between F-8 and F-3 on the top of the fuselage and between F-8 and F-4 on the bottom of the fuselage.
24. Sheet the top of the fuselage with 1/16" balsa sheet between F-8 and F-13. Sheet the bottom of the fuselage between F-8 and F-4.
25. Sand the entire fuselage smooth all over.
26. Mount the servo rails and servos into position. Make cutouts as required in fuselage top for the servos.
27. Carve and sand the rudder fairing blocks to shape. Glue the stabilizer and the fin fairing blocks to the fuselage. Slide the fin part way into position between the fairing blocks to make sure it will be properly aligned and to maintain the proper spacing between the blocks.
28. When the glue is dry, slide the fin completely into position (do not glue).
29. Temporarily hinge (do not glue) the elevators to the stabilizer.
30. Cut the lower hinge slot in the rudder and the fuselage and then temporarily hinge (do not glue) the rudder to the model.
31. Attach the control horns to the elevator and rudder with 2-56 screws. Install the rudder and elevator pushrods with clevises at the horns and servo connectors at the servos.
32. Install the nose landing wire and steering arm so the arm is on the right side of the firewall. Install the engine and mount back on the firewall.
33. Bend and install the throttle pushrod and the nose gear steering pushrod. Attach these pushrods to the servos with servo connectors.
34. Glue the 1/4" sq. spruce cowl attach blocks to the front of F-8.
35. Carefully trim the cowl and fit it to the fuselage. With the cowl on, attach the propeller to the motor and make sure the cowl is far enough aft to allow propeller clearance. The dimples for the cowl screws on each side of the cowl should line up with the center of the 1/4" sq. spruce strips. Sand the lower corners of F-1 on each side as required to obtain the proper fit.
36. Attach the cowl to the model with the 4 screws provided.
37. Trim the canopy and test fit it to the model. Do not glue it into position at this time.

Building the Left Wing

38. Pin the lower 1/4" sq. spar and the lower trailing edge sheet to the left wing plan.
39. Glue the lower plywood dihedral braces to the front and rear of the lower spar. Cut the lower 1/16" sheet for the lower inboard end of the wing and glue in place between the trailing edge and the dihedral brace.
40. Place rib W-1 into position. Use the dihedral gauge to angle the top of this rib toward the tip and glue the rib into position.
41. Glue W-2, W-3 all of the W-4 ribs into position. These ribs should be 90 degrees to the building board.
42. Glue the top 1/4" sq. spar into position. The inboard end of the spar should end flush with the face of the W-1 rib. Glue the top plywood dihedral braces to the front and rear of the top spar.
43. Glue the 1/4" sq. leading edge, the 3/32" sq. strips and the top trailing edge sheet to the wing.
44. Add the 1/16" sheet to the inboard end of the wing between the spar and the trailing edge. Use three pieces of 1/16" sheet to sheet the inboard top of the wing from the spar to the leading edge. These pieces go between the 3/32" sq. strips and not on top of them.
45. Remove the wing from the plan and add the lower 1/16" sheet to the inboard end between the spar and the leading edge. Glue the landing gear block into position and drill the 3/32" hole in the landing gear block.
46. Trim and sand the spars, leading edge and the trailing edge flush with the last W-4 rib.

Building the Right Wing

47. Place the left wing into position on the end of the right wing plan. Place a spacer under the last W-4 rib to raise the tip 3/4" above the building board. The lower 1/16" plywood dihedral braces for the right wing should be flat against the plan. Pin the left wing into this position.
48. Pin the lower spar and the trailing edge sheet into position for the right wing. Glue the spar to the dihedral brace and glue the trailing edge to the left wing.
49. Add the lower rear inboard sheet to the right wing and finish assembling the right wing as you did the left.
51. When the right wing is finished, sand the entire wing smooth and sand the leading edge round .
52. Glue the 3/4" triangle wing tips to the ends of the wing. The front of the tip block should be flush with the leading edge, and the bottom should be flush with the bottom of the W-4 rib. Sand the tip blocks to match the airfoil section of the ribs and then sand them smooth.

Covering

53. Remove the cowl, engine, control surfaces, pushrods, landing gear and other items. Sand the entire model smooth with 320 grit sandpaper.
54. Cover the model with your choice of iron on covering materials.
55. Paint the the top of the fuselage and the formers in the cockpit area with black paint.
56. Fit the canopy into position and cut away the covering from the wood where the canopy will fit. Now glue the canopy to the fuselage.
57. Mask off the windows on the canopy and the rest of the fuselage and paint the canopy to match the color of the model. When the paint is dry you can remove the masking.
58. Paint the firewall with fuel proof paint.
59. Apply the decals and other markings as desired. An ultra fine Sharpie Marker can be used to draw panel lines and other details. Paint the wing hold down dowels and the cowl.

Final Assembly

60. Install the elevators and then the rudder to the model and glue the hinges in place.
61. Install the pushrods and control horns and connect the pushrods to the servos.
62. Glue the wing hold down dowels into position.
63. Install the landing gear.
64. Install the engine mount to the firewall and bolt the engine to the mount.
65. Install the throttle pushrod and nose gear steering pushrod.
66. Attach the fuel and vent line to the engine and then attach the cowl to the front of the model.
67. Install the receiver and battery pack so that the model balances at the point shown on the plan. Wrap the battery and receiver with foam rubber. If necessary, add weight to the nose or tail until the model balances at the point shown on the plan with the fuel tank empty. Mount the switch in the left fuselage side. Run the receiver antenna through the rear fuselage and out a small hole in the fuselage side just behind F-7 and below the stabilizer.
68. Attach the wing to the model with a minimum of 4 rubber bands on each side. Set the control throws to the measurements shown on the plan.
69. Verify that the model balances at the point shown on the plan before flying. Verify that the control throws are set and that the controls move in the proper direction.
70. Always pre-flight your model thoroughly before each flight. It is your responsibility to verify that your model is airworthy. Always follow established safety guidelines while starting and operating the engine, radio and while flying the model.

WARRANTY
<p>Herr Engineering Corp. guarantees this kit to be free from defects in both materials and workmanship at the time of purchase. This warranty does not cover any component damaged by use or modification. In no case shall Herr Engineering Corporation's liability exceed the original cost of the purchased kit. Further Herr Engineering Corp. reserves the right to change or modify this warranty without notice.</p> <p>In that Herr Engineering Corporation has no control over the assembly or use, no liability shall be assumed or accepted for any damage resulting from the use by the user during construction of the kit or the use of the final user assembled product. By the act of building this kit and/or using the final user assembled product, the user accepts all liability.</p> <p>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.</p>

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