Chin Model Air Craft
www.chinmodel.com

Piper Cherokee Arrow III Turbo Instruction Manual

Specifications:

- Wingspan: 42 in.
- Fuselage Length: 29 in.
- Flying Weight: 660 - 720 grams

Recommended Power and Radio System:

- Brushless Motor BL 2215/1400-1600 Kv or 2 – Stroke Engine .15 cu in
- ESC 30 A
- Propeller 8040-8060
- Spinner 40 mm.
- Battery 11.1 V 2200 mAh
- 4 Channel Radio system with 4 mini servos (2 for Aileron)

Kit Features:

- Steerable Nose wheel
- Complete hardware pack
- CAD-CAM design and CNC cut parts
- Balsa/Plywood construction
- Photo illustrated Instruction Manual

Open the Box

Opening the box you will found the following kit package;

1. Auto Cad plan sheet A1 1:1 and CNC cut parts diagram
2. Step-by-step instruction manual
3. Fuselage and wing content pack
4. 3.0 mm and 6.0 mm. balsa wood pack
5. Epoxy adhesive 30 grams 1 set
6. Hardware pack
7. Decals set and molded windshield

Before Assemble

Thank you for Purchasing the Chin Model AirCraft Piper Cherokee Arrow III Turbo. Piper Cherokee is the third model in an R/C scale airplane kits from Chin Model AirCraft

Since this is a scale model taken outline from the original Cherokee with accurate construction and attention to details, but it's not a difficult model to build. You'll find it takes approximately 30-40 hours to complete and it isn't more difficult to build than the Cessna 182, Cessna Caravan and PC-6 Porter. If you are already experienced R/C pilot, you should be able to fly the Cherokee without difficulty.

Take your time to studied this instructions manual before you starting to build, this will show you step-by step how to built your Cherokee straight and true from the beginning until covering and installing accessories. The CAD-CAM designed and CNC cutting, interlocking parts allow you to build fast and accurate. Moreover, all hardware are fully comes with the package, which will help you to decrease the time in the preparation and procure the equipment.

Hope you enjoy building and flying our products. Should you have any questions about building your Cherokee, please do not hesitate to e-mail us at chin_model@yahoo.com

Thank you for purchasing copyright product that invents and produces by Thai,

Chinnathon Akarapat

Building tools and Accessories

This is the list of tools and accessories required to finish your Piper Cherokee

Building and Finishing Tools

1. Cutter and sanding tools
2. Ruler, Pen, small set square
3. Razor saw, Small File set
4. Masking tape
5. Hand drill with 1, 2, 2.5 mm. drill bits
6. Screwdriver , Pliers with wire cutter, pins
7. CA glue, UHU HART (Wood glue), UHU ALL PLASTE (Plastic glue)
8. Balsa filler
9. Paintbrush , Black enamel paint , Thinner
10. Monotoke and sealing iron

Power and Radio system

1. 4 Channel Radio system
2. 4 mini servos with 5 connectors
3. Y-Harnesses (Aileron)
4. Brushless Motor BL 2215/1400-1600 Kv
5. Propeller 8040-8060
6. Propeller spinner 30-40 mm.
7. ESC
8. Batt Li-Poly 11.1V 2000 mAh
9. Battery charger

Hardware set
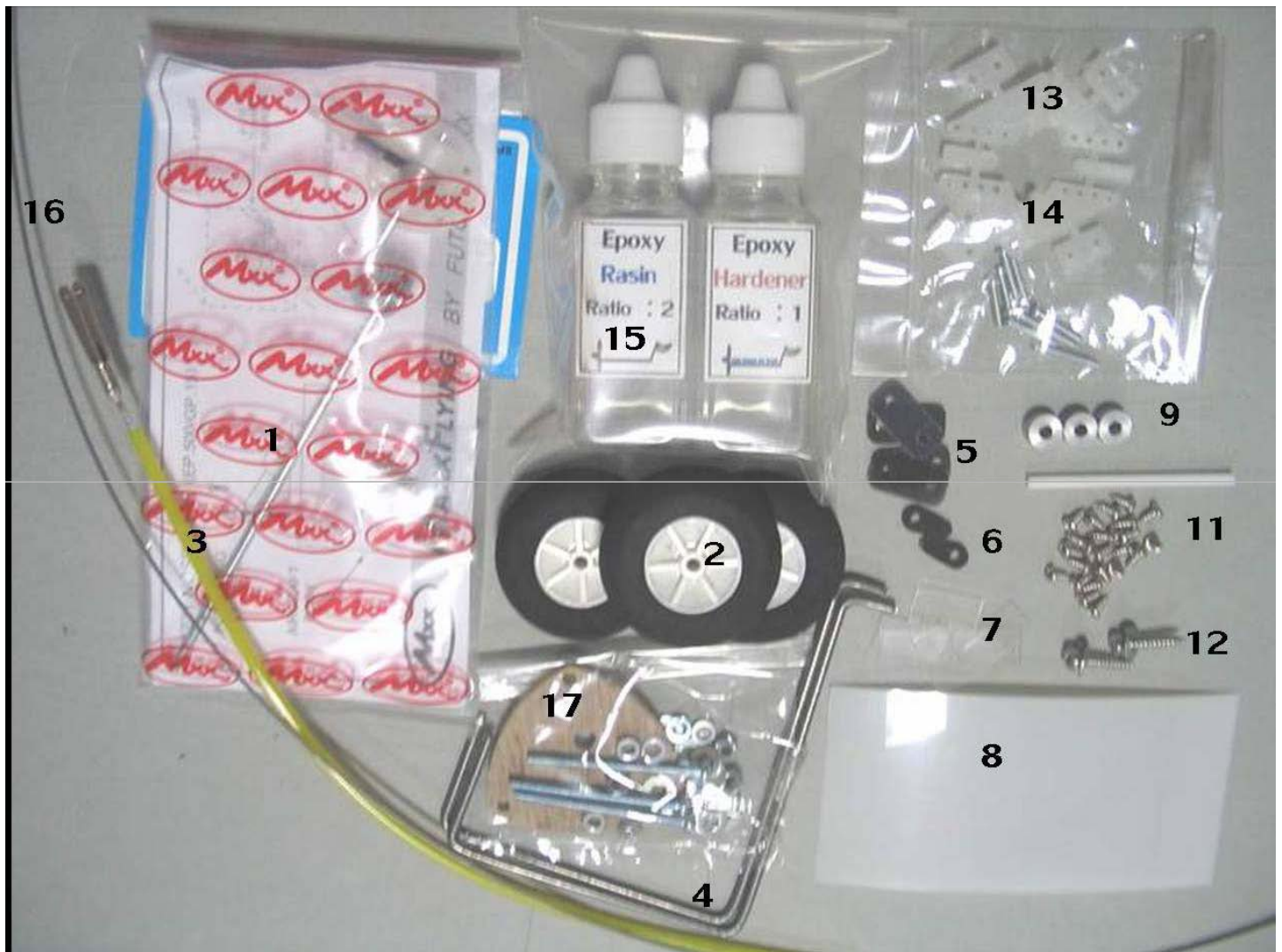
1. Nose gear set   1 set
2. 40 mm. foam wheels   3 pieces
3. Flexible nose wheel push rod with metal clevis   1 set
4. 2.5 mm. main landing gear wire   1 set
5. Main landing gear straps   4 pieces
6. Plastic tab (battery hatch)   2 pieces
7. CA Hinges   13 pieces
8. Plastic sheet for Aileron servo cover   1 piece
9. Wheel collars   3 pieces
10. Antenna tube   1 piece
11. Sheet metal screws   22 pieces
12. Wing bolt with washer   1 set
13. Aileron control horn   1 set
14. Rudder-Elevator control horn   1 set
15. Epoxy adhesive Set in 30 minutes and cure in 6-8 Hours   1 set
16. Pushrod wire   1 piece
17. Motor mount set   1 set

Decal set, windshield and windows

1. Windshield with screws   1 piece
2. Side windows   1 piece
3. Silver stripe tape   1 roll
4. Chin Model AirCraft Logo   1 set
5. N3464Q decal (left fuselage side and right wing)   2 pieces
6. N3464Q decal (right fuselage side)   1 piece
7. Cherokee decal (wing)   1 piece

BUILD THE FUSELAGE
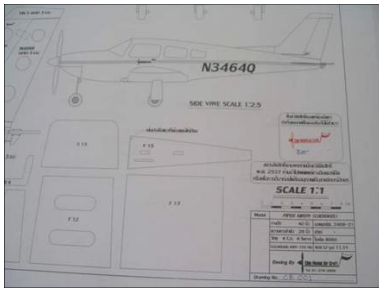
Prepare the plan sheet (Genuine product must have the owner stamp and authentic sign)
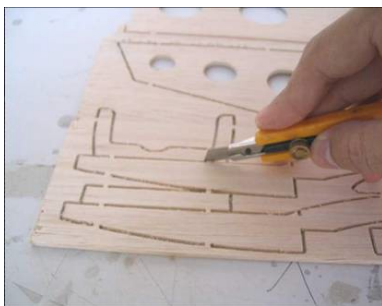
Remove fuselage parts from the Plate

Lightly sand the edges to remove any excess CNC cutting

Prepare fuselage parts

Glue P1 – P2 with UHU Hart in position on B1 (Be sure to make a left and right side)

The photo of P1- P2 on both sides

Use a cutter to cut a notch on F3 as shown

Bend F3 as shown
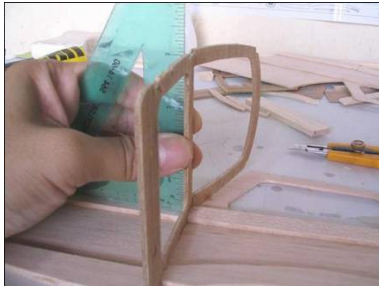
Install F3 – F4 in position to the fuselage side, use square to hold it perpendicular to the fuse side while apply a few drops of CA to hold former in place

This side must also at the right angles

Join the right fuselage side to the left

Make sure the sides are straight
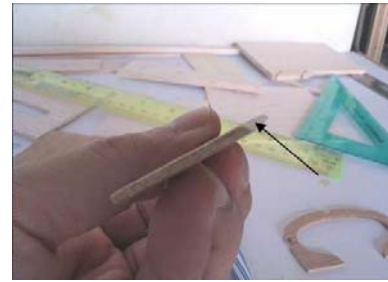
Indicated by the arrow, sand a bevel on the edge of F9 to fit with F5

Position F5, F8, F9 in place (apply a drop of CA to glue it in position)

Double check that the fuselage is still straight

Glue P4 to the tail in position where the rear of the fuselage sides met

While gluing P4 in position, visually center the tail to the centerline of the fuselage

Position F6 in place (apply a drop of CA to glue it in position)

Place F2 between the fuselages sides (B1), hold the fuse sides together and keep the fuselage in alignment

Visually check the alignment from the top view

Place F1 in position (Temporarily install balsa stick inside to prevent F1 broken during holding the fuselage

Visually check the alignment

Trim P2 to fit against F7
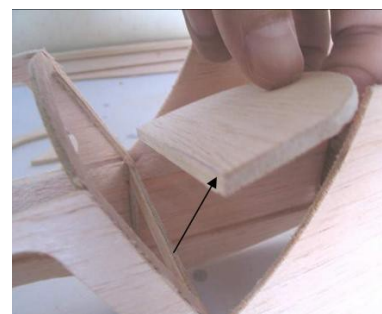
Indicated by the arrow, sand the edge of F7 to fit with F3

Glue F7 and P3 in position

Wet outside of the nose sheet with water

Carefully pull the sheet around the nose and glue inside the sheet with CA, and then mark where the sheet crosses the centerline of the stringer. Cut the sheet at the line you marked

Apply the other sheet in the same manner

Trim the sheeting flush with F7

Lightly sand the nose to remove any glue

Lightly sand the front of F1 smooth and then glue F0 in position with UHU Hart

Glue F10 - F11 into position and then glue F12 in place. Do not glue F12 to F10 - F11

Trim flush with the side of the fuselage

Lightly sand the edges

Glue P6 into position as shown on the plan

The photo of P6 in place

Glue P4 – F14 into position as shown on the plan

Trim F14 for a good fit with F5

Glue a 3 mm. scrap balsa to the bottom and sand as shown
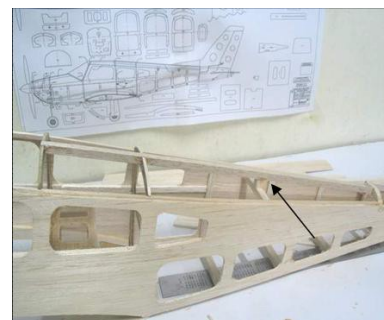
Glue P4 and P5 into position (indicated by the arrow, use a balsa stick to support P4)

Slightly beveled P5 to fit against F16
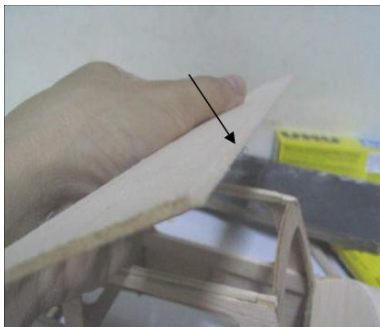
Indicated by the arrow, slightly beveled F16 to fit against B1 and P5

Wet outside of the rear sheet (F16) with water

Carefully pull the sheet to the stringer and glue inside the sheet with CA, and then mark where the sheet crosses the centerline of the stringer. Cut the sheet at the line you marked. Apply the other sheet in the same manner

Shape a piece of P4 to triangle stick as shown

Sand to fit with F 15
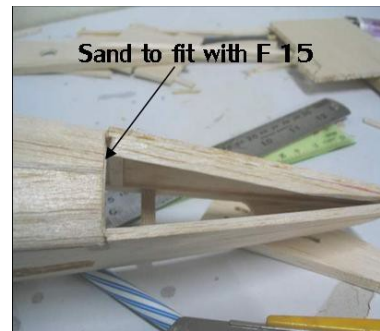
Glue P4 into position as shown

Glue F15 into position as shown on the plan

Trial fit Fin 1 into position

Use a cutter followed by a bar sander to round and shape F15 even with the top of the aft end of the fuselage

Glue together Fin 2 and Fin 1 to mark a slot for Fin 2
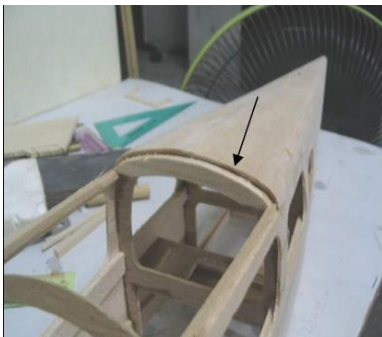
Indicated by the arrow, trim F16 flush with F4 and glue F 4/1 into position as shown

3 m.m.
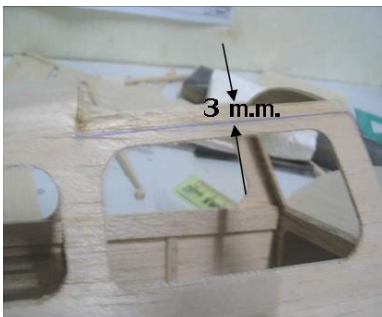
Draw a line parallel to the top edge as shown
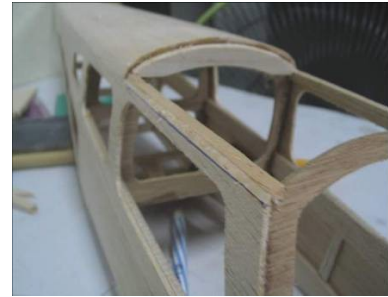
Use a cutter followed by a bar sander slightly beveled to match the curvature as shown

Apply the other side in the same manner

Place F 17 into position and apply CA glue inside

Trim off the excess wood and sand

Glue F18 into position as shown on the plan

Trim F18 even with F17 as shown

Sand the skins flat and even

Use bar sander to round the corners
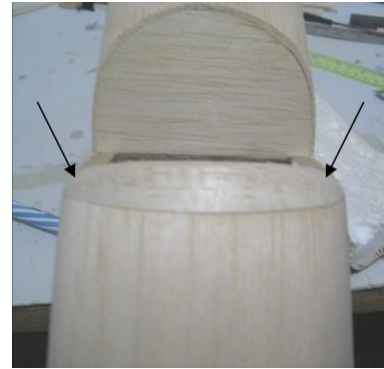
As indicated by arrow, the corner of F18 must curve equally
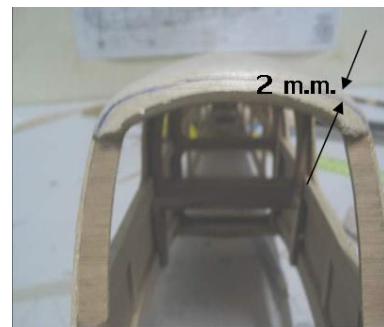
Draw a guideline on F18 as shown

Carve F18 from guideline to F3 as shown

Sand F18 with round sander

Glue B4-B5 in position
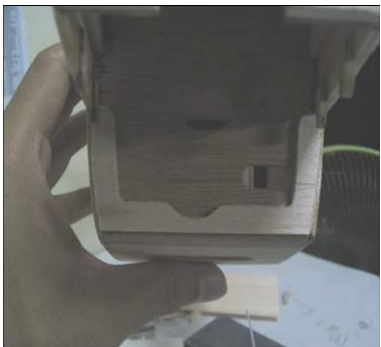
Place B6 in position, use only a spot of CA to glue B6 to F2

Carefully glue B3 to B2 and glue B2 to B6 with a drop of CA (attaching it to the fuselage It will be much easier to sand)
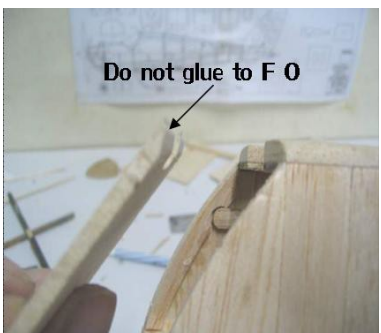
Do not glue to F 0

Bevel the front of F13 to meet F0

Align F13 with F0 (do not glue the front of F13 to F0)

Mark the edge of F13 to match B6 and cut for the perfect fit and then apply CA glue inside
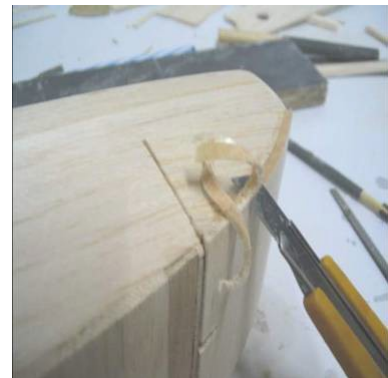
Trim F 13 flush with B2

Round the corners by sanding
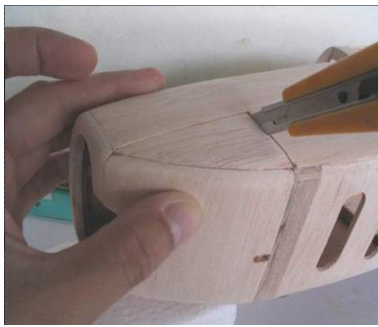
Use cutter to carefully lift out of the frame. You didn't glue it in F2?

Add a few drops of CA to the joints

Trim to accommodate nose gear

Attaching it to the fuselage and mount with sheet metal screw
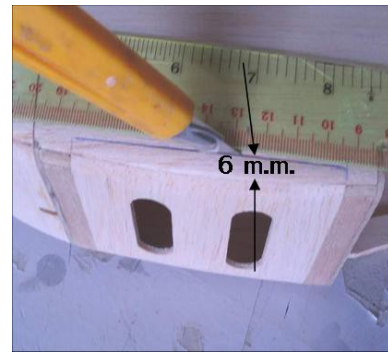
Draw a line as shown for making battery hatch. Use a straightedge and a cutter to slit along the line

Remove battery hatch from the fuselage
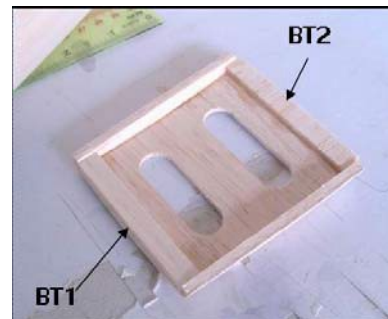
Assemble BT1-BT2 to battery hatch
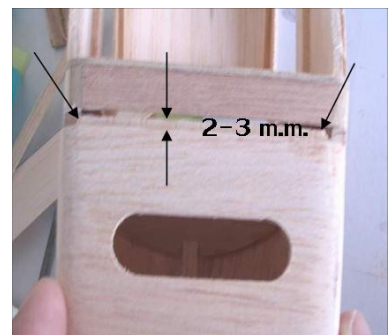
BT2 should extend about 2-3 mm. for the hatch locking and round the corner (indicated by arrow)

Position battery hatch on the fuselage

Glue S14 into position

Sand S14 as shown

Glue A1 into position

BUILD THE WINGS

Prepare wing parts

Use small flat file to file S2-S3 notches to allow the ribs fully seated on the spars
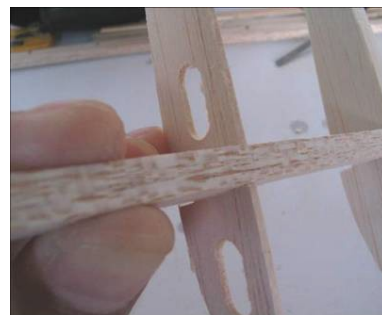
Test fit wing ribs onto Spar S2-S3 (except W1). Make sure that S2-S3 is flush with the edge of the top ribs

Place all ribs in position on S3
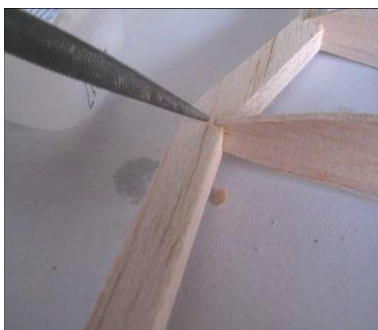
Place rib W1 on S1 as shown and apply a drop of CA

Apply UHU hart on S3 and then place S 2 into position

Join spar S2-S3 together

Glue WP3 in position

Glue S8 and S14 in position as shown on the plan

Place a straightedge against W5 and W10 and drawn a line on S8 all the way
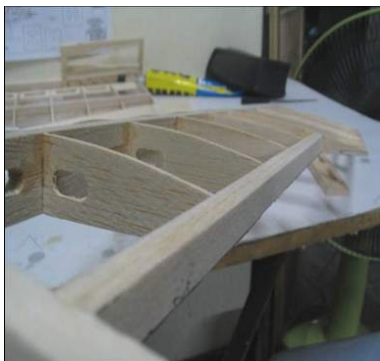

Trim S8 to match angle of the ribs (Top)
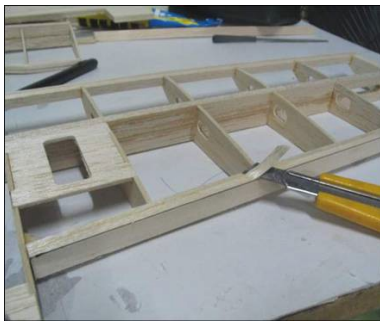
Trim S8 to match angle of the ribs (Bottom)

Use a bar sander to sand S8 smooth on the top and bottom

The photo of finished sanding S8

Glue S 9 in position and trim S 9 even with W 10

As indicated by arrow, place S10 in aileron bay and draw a line on S9 and then sand the tip to blend with the aileron

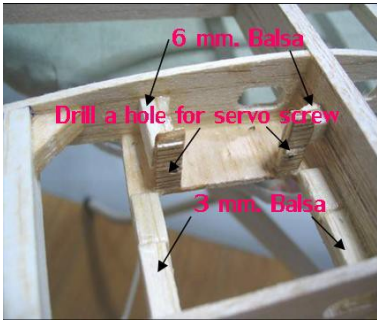Draw a line on W 10 as shown on the plan as a guide to shape the wing tip

Use sandpaper to final shape the wing tip

Draw a reference along the S1. Trim and sand to round the leading edge along the lines

Sand the leading edge (S1) to shape as shown

Drilling pilot holes into the servo mounts and assembles servo mount support as shown

JOIN THE WINGS

Trial fit S 4 in place, cut a slot in rib W 1 to allow S4 to be inserted and even with S3
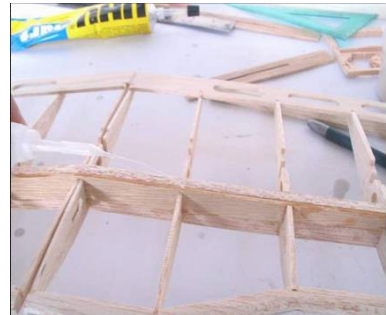

Apply UHU Hart to the main spar

Place dihedral brace (S4) in position. Makes sure the bottom edge of S4 even with S3
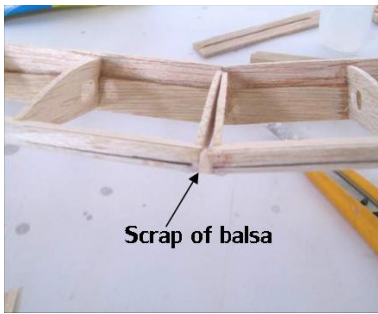

Apply UHU hart on the right wing panel the same way to join the wing panel
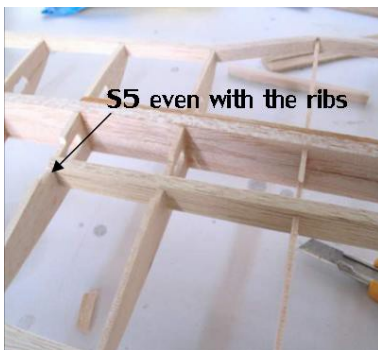

Join two wing halves together with the dihedral brace in place. Makes sure the bottom edge of S4 even with S3

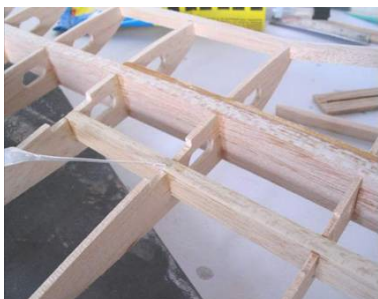

Use CA to glue trailing edge of S 7 together

Fill the gap between leading edge with a scrap of balsa

Trial fit S5 in place, cut a slot in rib W 1 to allow S5 to be inserted and even with the ribs

Carefully trim the ribs if necessary for the best fit

Glue S5 in place

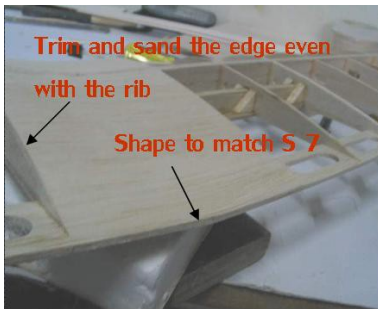Glue landing gear rail (S 6) into position as shown on the plan using CA

Glue the gusset (S14) into position to support landing gear rail as shown on the plan using CA

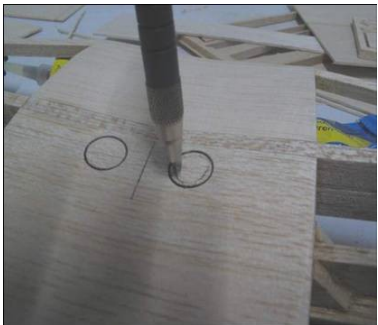Cut and glue S 7/1 into position as shown using UHU

Sheet the wing center section with WP1

Sand the wing center section WP1 smooth

Sand WP1 to match with the leading edge (S1)

Cut two holes out of the top center sheeting for the aileron servo leads as shown

Use a drum sander to sand the holes to the circles as shown
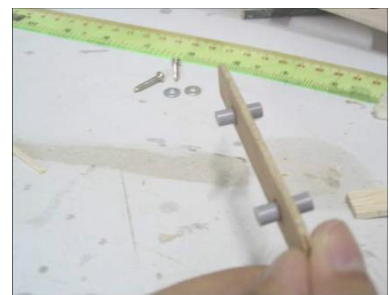

Bevel the aileron (S 10) as shown

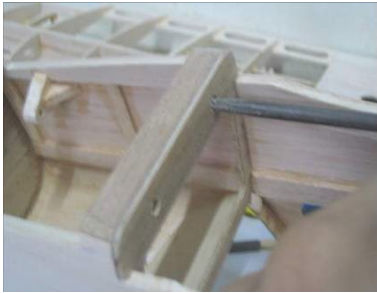Sand the entire aileron TE the same thickness

Trial fit the wing and empennage to the fuselage
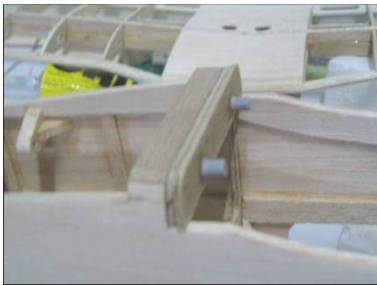
MOUNT THE WING AND EMPENNAGE

Insert the wing dowels (S11/1) into the wing dowel plate (S11) and protrudes 6 mm. out of the wing dowel plate. Use CA to glue the wing dowels.

Use round file to enlarge the holes in the F3 to assure easy wing dowel fits.

Assemble wing dowel plate with F3

Use a round file to grind a half-round notch on the leading edge as shown

Install the wing and align it with the fuselage. Measure distance from the fuselage to wing tip. Then, measure the distance from the other wing tip to the fuselage and check if the distances are the same. Adjust the wing until both distances are equal

Measure the distance from the aileron bay to center of the tail, then measure the distance from the other aileron bay and check if the distances are the same. Adjust the wing until both distances are equal

Being careful not to disturb the wing alignment, drill the holes through the wing and the wing bolt plate (F9) in the fuselage.

Apply a few drops of CA to the leading edge and the wing dowel plate
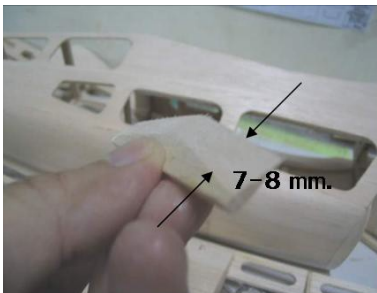

Glue S 13 in place using UHU hart

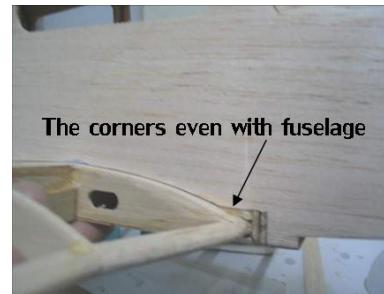Trim the rear of S13 flush with the wing center skin

Sand the rear of S13 flush with the wing center skin

Bevel S12 as shown to make a good contact with the wing center skin

Assemble S12 to S11 as shown


Trial fit the wing on the fuselage

Glue the stab tip to the stab and then round the edge of the stab LE and the stab tip. Insert the stab into the slots in the fuselage. Measure the distance from the tip of the stab to the fuselage. Adjust the stab until both sides measure the same

Measure the distance from the tip of the stab to the tip of the wing on the right side of the fuselage. Measure the same point on the left side of the fuselage. Adjust the stab until both sides measure the same.

View the alignment of the stabilizer if the stab is parallel with the wing.
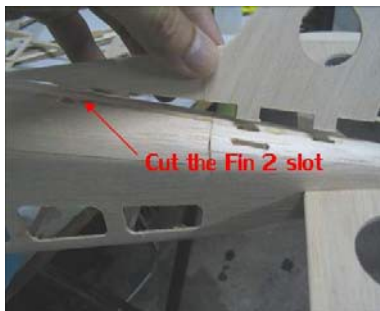
Glue Fin1 to Fin2 and lightly sand to remove any excess glue. Fit the fin in place and cut a slot for Fin 2.
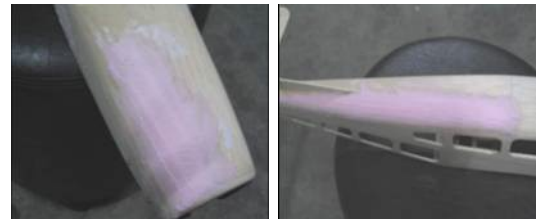

Check that it is perpendicular to the stab with a square. When satisfied with the alignment of the fin, glue it in place.

Prepare the parts for the next step

FINISH THE MODEL

Fill all dents, seams, low spots, and notches with Balsa Filler

After the filler has dried, use finer grades of sandpaper to even all the edges and seams and smooth all surfaces.
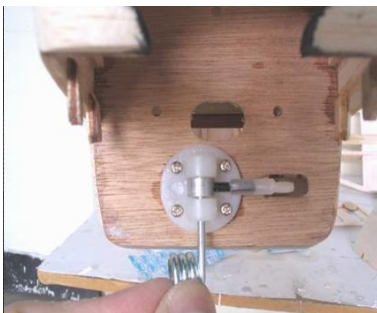

Paints black enamel as shown
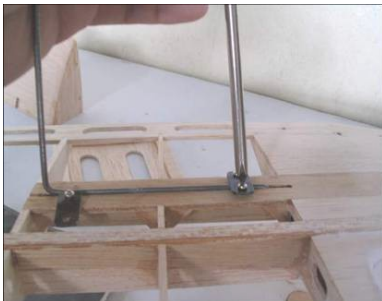
Install the hardware

Fit the nose gear pushrod tube in the fuselage side

Install nose gear in place through the holes on F2

Drill a 2 mm. hole through the landing gear rail

Mount the landing gear wire with two landing gear straps and sheet metal screws

Round the edge of the landing gear fairing (G 1)



Hold the landing gear fairing to the landing gear

Mix 2:1 of Epoxy provided to coat all seams and joint, inside the fuselage and allow it to dry

COVERING

We recommend you get the trim schemes on full size Piper Cherokee Arrow III Turbo quite simple and should be easy to duplicate with MonoKote film.

If you plan to compete with the trim scheme as the prototype, here are a few things to consider:

The full-size Piper Cherokee Arrow III Turbo, N3464Q, that was modeled for this kit Use the following photo as a guideline for the covering sequence or use your own proven methods to finish your Piper Arrow.
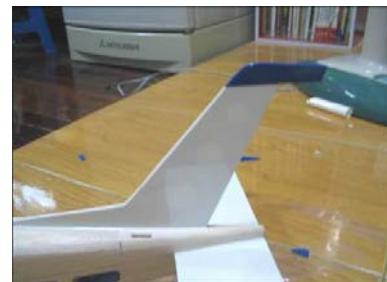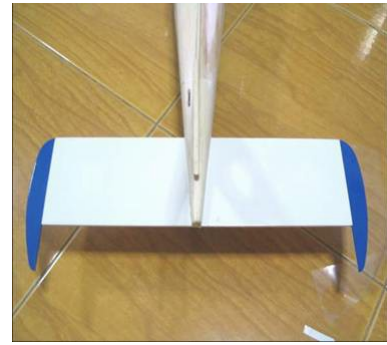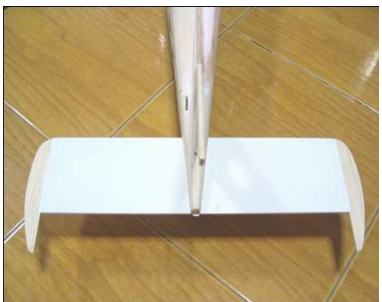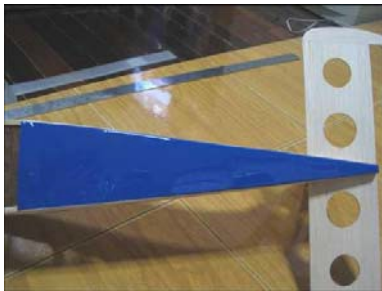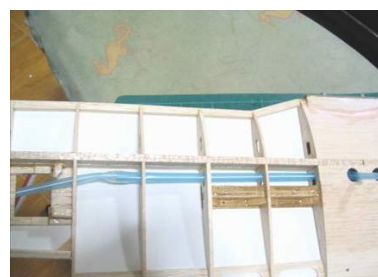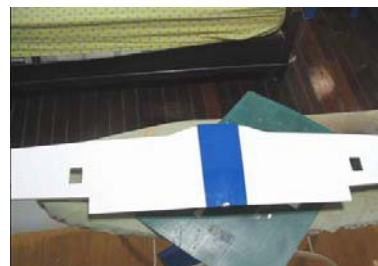
Locate straw in the wing as shown in the photo; use it to pull Y-connector through the wing

FINAL ASSEMBLY

Hinge the aileron, the hinge locations are shown on the plans.

Tape Y-connector with straw and route them through the wing

Route the servo cord back through the wing,

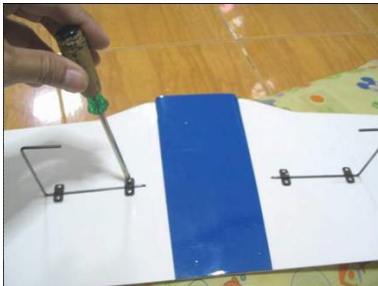Hinge the elevator and rudder, the hinge locations are shown on the plans.

Mount the aileron servo to the servo mount (Install connector and center servo arm before mounting servo)

Cut plastic sheet for Aileron servo cover and mount it on the wings with sheet metal screws

Connect the aileron servo to the aileron with the hardware shown on the plan and in the photo.

Secure the main landing gear to the landing gear rail with the landing gear straps and sheet metal screws.

Hold the landing gear fairing to the landing gear, glue them with CA and install the wheels and wheel collars

Install the wheels and wheel collars to the nose gear
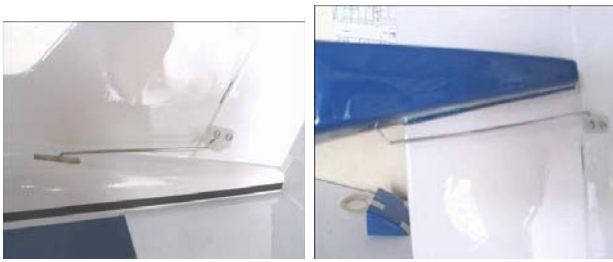

Attach the hatch locking tab with sheet metal screw.

Mount the control horn on the rudder and elevator

Make the pushrods from 1.0 mm. push rod wire and balsa push rod stick P4 as shown on the plan. Mark one of them "rudder," the other "elevator"

Connect pushrod to the control horn
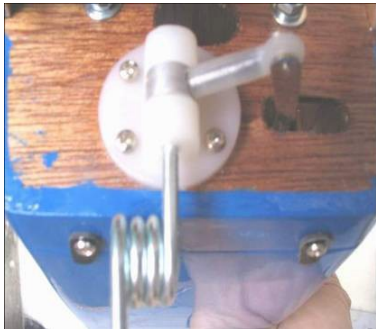
Clip the Metal Clevis onto the Steering Arm
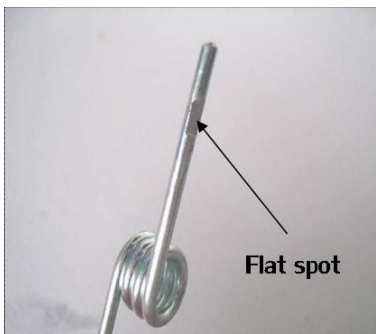
Flat spot

When the Nose Wheel Steering Arm is adjusted, remove the Nose Gear Wire. File a flat spot where the steering arm locking screw contacts the wire so the steering arm can be locked in position.

Connect the pushrod wire to the servo arm

MOTOR MOUNT

Use the following photo as a guideline for mounting your motor
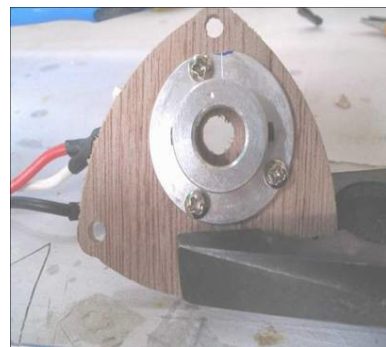
Install Propeller and spinner

Finish the windshield and windows

Prepare windshield and side window
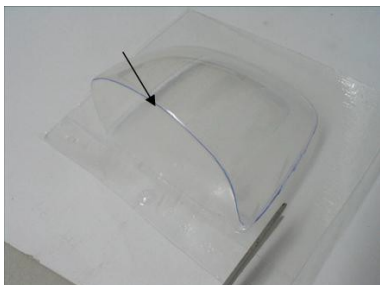
Use a pen to accurately trace the windshield outline

Cut the windshield on the cut line.

Secure the windshield in place with small sheet metal screws as shown

Apply silver strip tape as shown

Iron the strip into position

Cut each of the molded clear plastic windows along cut lines which are approximately 2 mm. outside of the edges and fit the windows in the matching window

GET READY TO FLY

NOTE

<u>Piper Cherokee Turbo Arrow III at the Flying Site</u>

Before first flight at flying field with 40 mm. spinner

As taking outline from an original Cherokee, battery and receiver is designed to locate near the wing to keep CG properly balanced

When C.G. at balance point the model should nose heavy 4-5 degree

For the best performance the flying weight should not exceed 720 grams and thrust should be at least 500 grams

We recommend Brushless Motor BL 2215/1400-1600 Kv so you can perform Out Side Loop easily

To fly Cherokee, you should have mastered a trainer

The rough runway may damage the main landing gear

Thank you and hope you enjoy with building and flying Cherokee

Other Kits from Chinmodel

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Cessna 182

- Wingspan 42 in. Fuselage length 29 in.
- Brushless Motor BL 2215 (1000 Kv) or .15 cu in engine
- Propeller 9050
- Batt Li-Poly 11.1V 2000 mAh
- Flying weight 680 - 720 grams
- 4 Channel radio system driving 4 mini Servos (2 for Ailerons)
- Steerable Nose wheel
- Building time 40-45 hours

Cessna Caravan 208B (Grand Touring)

- Wingspan 46 in. Fuselage length 33 in.
- Brushless Motor BL 2215-2220 (1000-1600 Kv) or .15 cu in engine
- ESC 30 A
- Propeller 8060 – 9060
- Batt Li-Poly 11.1V 2000 mAh
- Flying weight 740 - 880 กรัม
- 4-5 C.h. Radio system driving 4-5 Servos (2 for Ailerons)
- 5th C.h. for Cargo Door can be open and load the small parachute or item
- Steerable Nose wheel
- Building time 40-50 hours

Pilatus PC-6

- Wingspan 44 in. Fuselage length 31 in.
- Brushless Motor BL 2215 (1000 Kv) or .15 cu in engine
- Propeller 9050
- Batt Li-Poly 11.1V 2000 mAh
- Flying weight 740 - 780 grams
- 4 Channel radio system driving 4 mini Servos (2 for Ailerons)
- Aluminum shock absorber like a full size Porter and realistic performance
- Steerable Tail wheel
- Building time 30-40 hours

Cessna 337 Skymaster

- Wingspan: 52 in. Overall Length: 39 in
- Steerable nose wheel
- Flying Weight: 1820 grams
- Wing Load: 22 oz./sq ft)
- Bolt-on wing mounting
- Building time 60-80 hours
- Brushless Motor BL 2215/1050 KV X 2
- ESC 30 A X 2
- Battery Li-Poly 11.1V 2200 mAh (20C) X 2
- Propeller 9060-1060
- Pusher 9060-1060
- 5 Channel radio system driving 6 Servos
  (Aileron 2)(Ruder 2)(Elevator 1)(Nose Gear 1)