SPECIFICATIONS
Wingspan.......57.5 in. / 146cm
Length.............50 in. / 127cm
Engine.............46 2T / .70 4T
       or Electric equivalent
Radio.6-channel- 4 (5) servos

INSTRUCTION MANUAL
Almost ready to fly

WARNING! This radio control model is not a toy. If modified or flown carelessly it could go out of control and cause serious bodily injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas with no debris or obstacles.
REQUIRED FOR OPERATION (Purchase separately)

- Minimum 5 channel radio for airplane with 5 servos
- .46 ~ .50 - 2 cycle engine
- .60 ~ .70 - 4 cycle engine
- Silicone tube
- G-46 HP Motor or equivalent.
- Retract landing gear VQAR03
- Retract servo x1
- Recco Tower Parts (for retract servo)
- Minimum 5 channel radio for airplane with 5 servos
- .46 ~ .50 - 2 cycle engine
- .60 ~ .70 - 4 cycle engine
- Silicone tube
- G-46 HP Motor or equivalent.
- Retract landing gear VQAR03
- Retract servo x1
- Recco Tower Parts (for retract servo)

GLUE (Purchase separately)

- SILICON Glue
- EPOXY A
- EPOXY B
- CA Glue
- Cyanoacrylate
- Li-Po Battery, 5 cell 4500mAh.

TOLLS REQUIRED (Purchase separately)

- Hobby knife
- Needle nose Pliers
- Phillip screw driver
- Hex Wrench
- Awl
- Scissors
- Wire Cutters
- Sander
- Masking tape
- Straight Edged Ruler
- Pen or pencil
- Rubbing alcohol
- Drill and Assorted Drill Bits

The pre-covered film on ARF kit may wrinkle due to variations of temperature. Smooth out as explained right.

* Use an iron or heat gun. Start as low setting. Increase the setting if necessary. If it is too high, you may damage the film.

Symbols used throughout this instruction manual, comprise:

- Drill holes using the stated size of drill (in this case 1.5 mm Ø)
- Take particular care here
- Hatched-in areas: remove covering film carefully
- Check during assembly that these parts move freely, without binding
- Not included.
- These parts must be purchased separately

Read through the manual before you begin, so you will have an overall idea of what to do.

CONVERSION TABLE

| Millimeter | Inch       | Millimeter | Inch       | Millimeter | Inch       | Millimeter | Inch       | Millimeter | Inch   |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------|-------|
| 1.0mm      | 3/64"      | 3.0mm      | 1/8"       | 10mm       | 13/32"     | 25mm       | 1"         | 1.5mm      | 1/16"   |
| 1.5mm      | 1/16"      | 4.0mm      | 5/32"      | 12mm       | 15/32"     | 30mm       | 1-3/16"    | 2.0mm      | 5/32"   |
| 2.0mm      | 5/32"      | 5.0mm      | 13/64"     | 15mm       | 19/32"     | 45mm       | 1-51/64"   | 2.5mm      | 3/32"   |
| 2.5mm      | 3/32"      | 6.0mm      | 15/64"     | 20mm       | 51/64"     | 6.0mm      | 3/8"       | 3.0mm      | 3/16"   |

Read through the manual before you begin, so you will have an overall idea of what to do.
1- Joining the wing

1. Using a pencil, mark the center of the brace.
2. Trial fit the wing joiner into one of the wing panels. It should insert smoothly up to the center line marked above.
3. Slide the other wing half onto the dihedral brace until the wing panel meet. If the fit is over tight, it may be necessary to lightly sand the dihedral brace.
4. Check for the correct dihedral angle.
5. Mix up some 30 minute epoxy and apply a generous amount of epoxy into the wing joiner cavity of one wing half.
6. Coat one half of the dihedral brace with epoxy up to the center line. Install the epoxy-coated side of the dihedral brace into the wing joiner cavity up to the center line, marking sure that the “V” of the dihedral brace is positioned correctly.
7. Do the same way with the other wing half.
8. Carefully slide the wing halves together, ensuring that they are accurately aligned. Firmly press the two halves together, allowing the excess epoxy to run out. Clean off the excess epoxy.

IMPORTANT: Please do not clean off the excess epoxy on the wing with strong solvent or pure alcohol, only use kerosene to keep the colour of your model not fade.

2- Joining the wing

Note: The two wing halves roots must fit together perfectly. ! Make sure to glue securely, If not properly glued, a failure in flight may occur.

Cut the opening hole (½”x1/2”) throughout the balsa wood for the aileron extension cord exit.

Secure one end of the aileron extension cord with adhesive tape.

Use epoxy glue to bury the opening.

Hold the wing halves together with binder clip and rubber band (not include)

Cut the opening hole (½”x1/2”) throughout the balsa wood for the aileron extension cord exit.
3- Retract servo tray

Retract servo tray installation

4- Servo Installation

RETRACT SERVO INSTALLATION
Note: The head of servo should be positioned toward the rear of the wing.

5- Retract landing gear installation

Trial fit the push rod into the wing. Join the pushrod to the retract gear arm and trial fit the retract into the wing.

After checking that the retract works smoothly, fix the retract on the wing with 3x20mm self tapping screws. Do the same way with other half wing.

Secure one end of the aileron extension cord with adhesive tape

Cut away only the covering

Install the retract servo onto the retract servo mount and secure it in place with four screw (included with radio set).

Retract push rod
Retract gear arm
Put the nylon ring

3x20mm screw (not included)

VQ-AR03 -160223 Retract (option)

Plywood buffer included with retract set.

VQ-AR03 -160223 Retract (option)
6- Retract landing gear Installation

Link the servo and retract gear arm with push rod. Be sure to adjust the stroke so that the landing gear locks in both up and down position.

With the retract and retract servo in the retracted position, mark the position where each of the pushrod will attach to the servo arm, a small piece of masking tape works well for this. Cut off the excess length each rod.

7- Electric retract landing gear / Einziehfahrwerk

8- Fixed gear / Starres Fahrwerk
Using the wing bolt flat as a template, trace around the outside edge of the wing bolt flat and then remove it.

Using a sharp hobby knife, cut away the covering inside the lines. Not to cut into the wood.

Apply the wing bolt flat in place and secure it with CA glue.
12- Wing bolt flat / Verstärkung

Drill the holes throughout the wing bolt plat, from the top to the bottom of the wing.

13- Aileron servo installation

- Switch on the radio (trims centered) then mount the aileron servo horn in neutral position.
- The servo horn should be perpendicular to 90° the servo

Connect the aileron extension cord to the aileron servo and secure with adhesive tape before install the aileron servo on to the wing. Do the same way with second aileron servo.

14- Aileron linkage

Depending on the position of the linkage, determine the location of aileron control horn. The horn holes must be perfectly aligned with the axis of articulation. Mark the position of the “foot” of the horn on the aileron. Then, with the drill, make the 2 holes. Install the aileron control horn as shown.
1-Using the ABS air scoop as a template, trace around the outside edge of the ABS air-scoop, and then remove it.
2-Using a sharp hobby knife, cut away the covering inside the lines. Not to cut into the wood.
3-Apply the ABS air scoop in place and secure with CA glue. Do the same way with the ABS wing cover.

17- Installing the wing
18- Horizontal stabilizer

Securely glue together. If coming off during flight, you lose control of your airplane.

Vergewissern Sie sich, sauber geklebt zu haben. Andernfalls können Probleme mit der Flugeigenschaft auftreten!

1-Trial fit the horizontal stabilizer in place. Check the alignment of the horizontal stabilizer. When you are satisfied with the alignment, use a pencil to trace around the top and bottom of the stabilizer where it meets the fuselage.
2-Remove the horizontal stabilizer from the fuselage. Using the sharp hobby knife, carefully cut away the covering inside the lines which were marked above.
3-Spread epoxy (30 minute) onto the top and bottom of the horizontal stabilizer along the area where the covering was removed and to the fuselage where the horizontal stabilizer mounts.
4-Install the horizontal stabilizer into the fuselage and adjust the alignment as described in steep 1.
5-Wipe off any excess epoxy using a paper towel and rubbing alcohol. Allow the epoxy to cure before proceeding to next step.

* WARNING: When removing any covering from the airframe, please ensure that you secure the cut edge with CA or similar cement. This will ensure the covering remain tight.

19- Vertical stabilizer

1-Trial fit the vertical stabilizer in place. Check the alignment of the vertical stabilizer. When you are satisfied with the alignment, use a pencil to trace around the right and left of the stabilizer where it meets the fuselage.
2-Remove the vertical stabilizer from the fuselage. Using the sharp hobby knife, carefully cut away the covering inside the lines which were marked above.
3-Spread epoxy (30 minute) onto the right and left and bottom of the vertical stabilizer along the area where the covering was removed and to the fuselage where the vertical stabilizer mounts.
4-Install the vertical stabilizer into the fuselage and adjust the alignment as described in steep 1.
5-Push the rudder and its hinges into the hinge slots in the trailing edge of the vertical stabilizer. There should be a minimal hinge gap. When satisfied with the alignment, hinge the rudder to the vertical stabilizer using thin CA glue. Make sure to apply a thin CA glue to the left and right of both hinges and to inside the hinge slots.

* WARNING: When removing any covering from the airframe, please ensure that you secure the cut edge with CA or similar cement. This will ensure the covering remain tight.
**20- Elevator installation**

Vergewissern Sie sich, sauber geklebt zu haben. Andernfalls können Probleme mit der Flugeigenschaft auftreten!

Securely glue together. If coming off during flight, you lose control of your airplane.

push the elevator and its hinges into the hinge slots in the trailing edge of the horizontal stabilizer. There should be a minimal hinge gap.

When satisfied with the and alignment, hinge the elevator to the horizontal stabilizer using thin CA glue. Make sure to apply a thin CA glue to the top and bottom of both hinges and to inside the hinge slots. Repeat the previous procedures to hinge the second elevator to the other side of the horizontal stabilizer.

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1- Insert the tail wheel pushrod into the hole on the tail gear control horn (as show).
2- Install the tail wheel control horn in place.
3- Instal the tail wheel gear in place.
4- Secure the tail wheel control horn in place using a 5/64"(2mm) screw set. Ensure smooth non-binding movement.
5- Installing the tail wheel hatch (H) in place using a four 5/64x25/64"(2x10mm) self tapping screws.
6- Attach the tail wheel doors (D) in place using CA glue.
- Using a pencil or felt tipped pen, mark the fire wall where the four holes are to be drilled.

- Remove the engine mount and drill a 13/64" (5mm) hole through the fire-wall at each of the four marks marked.

- Reposition the engine mounts on to the fire-wall. Attach the four blind-nut to the fire-wall as show. Secure them with four 4x25mm screw.

- Position the engine on to the engine mounts so the distance from the prop hub to the fire wall is 5-1/8" (127mm).

- Mark the engine mounting plate where the four holes are to be drilled.

Note: Mark the mounting plate through the engine mounting flanges.

- Remove the engine and drill a 1/8" (3mm) holes through the beam at each of the four marks made above.

- Reposition the engine on the engine mount beams, aligning it with the holes. Secure the engine to the engine mount using four 1/8x51/64" (3x25mm) screws.

Note: Apply Silicon sealer to each of the 1/8x51/64" screw.
23- Fuel tank

After confirming the direction. Insert this assembly, clunk end first, into the fuel tank and tighten and screw the fuel tank cap on firmly.

Checking for leaks - block the vents and blow into the feed - if in doubt submersing the tank in a blow of water will show up any problems.

24- Electric motor

Using a aluminum motor mounting plate as a template, mark the plywood motor mounting plate where the four holes are to be drilled (2). Remove the aluminum motor mounting plate and drill a 1/8"(3mm) hole through the plywood at each of the four marks marked .

Note: The aluminum motor mounting included with electric motor set.

25- Radio and battery

Carefully cut a 2-9/32"(58mm) wide area which is 2-61/64" (75mm) in length through both the covering and the balsa wood. Remove the excess balsa. Put the battery pack into the box (pre-build at factory) and fasten down with rubber bands or similar, ensuring it will not come loose or rattle during flights.

Link the battery wire with the battery extension cord. Reposition the hatch in place and secure it with CA glue.
26- Linkages

Elevator push rod
Elevator push rod
Tail wheel push rod
Rudder push rod

Throttle push rod
Thrott. servo
Elev. servo
Rudder servo

Connector

2mm

THROTTLE SERVO

ELEVATOR / RUDDER SERVO

27- Cowling installation

3/32x25/64" self tapping screw
2.5x10mm

1-Attach the board or transparent plastic on the side of the fuselage with the adhesive tape as show.
2-Using a pencil or felt tipped pen trace around the engine head where it meet the cowl. Cut the opening the board or transparent plastic for the engine head as marked before.
3-Remove the engine and insert the cowl on to the fuselage so the distance from the fire wall to the front of the cowl is 4-59/64"(125mm). Trace around inside the hole on the board or transparent plastic with a pencil.
4-Remove the cowl from the fuselage and carefully cut the opening for the engine head as marked above. Do the same way with the hole for needle-valve.
5-Again. Insert the cowl on to the fuselage and secure it in place with five 2.5x10mm self tapping screws.
28- Decor

Note: Cut out the stickers and apply them in the proper area. Do not peel the backing paper off all at once. Peel off one corner of the backing and cut off with scissors. Arrange sticker on model and when satisfied adhere the corner without backing. Carefully peel back the rest of the backing while at the same time adhering the rest of the sticker.

Try not to make air bubbles, if there are some, carefully puncture sticker (center of bubble) but not model surface with the tip of the knife or sharp pin and squeeze out the air. At curves stretch sticker and apply a little heat so that no ceases occur. Cut off the excess that is produced.

29- Balance

DO NOT try to fly an out-of-balance model!

Note: If necessary, move the battery pack or add weight to either the tail or nose until the correct balance is achieved.
Adjust the travel of the control surfaces to achieve the values stated in the diagrams. These values will be suitable for average flight requirements. Adjust the values to suit your particular needs.

**IMPORTANT:** Please do not clean your model with pure alcohol, only use liquid soap with water or use glass cleaner to clean on surface of your model to keep the colour not fade.

All details are subject to change without notice!