45 Class
2-cycle engine
70 Class
4-cycle engine

MESSERSCHMITT BF - 109

INSTRUCTION MANUAL / Montageanleitung

VQ
RADIO CONTROL MODEL ®

TECHNISCHE DATEN

Spannweiter	1560mm
Länge	1120mm
Elektroantrieb	G-46 HP Motor
Verbrennerantrieb	7.5cc 2-T / 8.5cc 4-T
Fernsteuerung	5 Kanal / 5 Servos

SPECIFICATIONS

Wingspan	1560mm
Length	1120mm
Electric Motor	G-46 HP Motor
Glow Engine	7.5cc 2-T / 8.5cc 4-T
Radio	5 Channel / 5 Servos

WARNING! This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of controll and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice if you are unexperienced.

ACHTUNG! Dieses ferngesteuerte Modell ist KEIN Spielzeug! Es ist für fortgeschrittene Modellflugpiloten bestimmt, die ausreichende Erfahrung im Umgang mit derartigen Modellen besitzen Bei unsachgemäßer Verwendung kann hoher Personen- und/oder Sachschaden entstehen. Fragen Sie in einem Modellbauverein in Ihrer Nähe um professionelle Unterstützung, wenn Sie Hilfe im Bau und Betrieb benötigen. Der Zusammenbau dieses Modells ist durch die vielen Abbildungen selbsterklärend und ist für fortgeschrittene, erfahrene Modellbauer bestimmt.
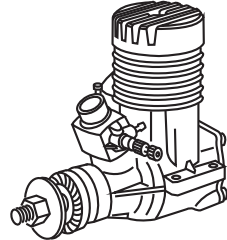
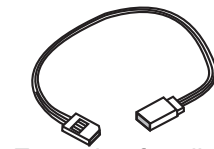# REQUIRED FOR OPERATION (Purchase separately)

10.5x6 for .40 - 2 cycle engine
11x6 for .46   - 2 cycle engine
12x6 for .60   - 4 cycle engine
12x7 for .70   - 4 cycle engine
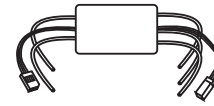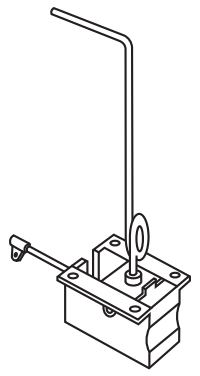13x7 - 13x8 for Electric Motor
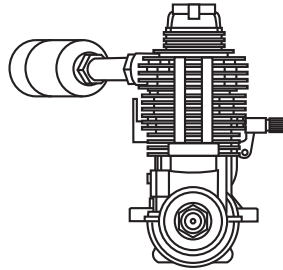
Extension for aileron servo, retract servo.

Motor Control

Retract landing gear   VQAR02

Minimum 5 channel radio for airplane with 5 servos
.Motor control x1 .Aileron x2
.Elevator x1 .Rudder x1

.46 ~ .50 - 2 cycle

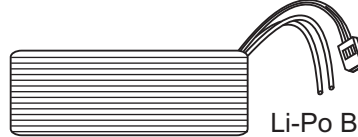.60 ~.70 - 4 cycle

G-46 HP Brushless Motor or equivalent.

Retract servo x1

Linkage Stopper x2 (for retract servo)

Silicone tube

Li-Po Battery, 5 cell, 4500mAh

GLUE (Purchase separately)

SILICON

Silicon sealer

Cyanoacrylate Glue

CA

EPOXY A

EPOXY B

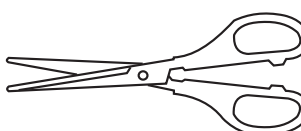Epoxy Glue (5 minute type)
Epoxy Glue (30 minute type)

TOLLS REQUIRED (Purchase separately)

Hobby knife

Needle nose Pliers

Sander

Phillip screw driver

Scissors

Hex Wrench

Awl

Wire Cutters

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 necsessary. If it is too high, you may damage the film

Low setting
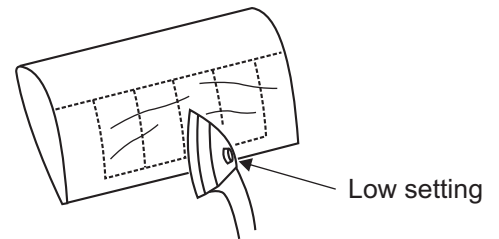
Symbols used throughout this instruction manual, comprise:

Drill holes using the stated 1.5mm size of drill (in this case 1.5 mm Ø)	Take particular care here
Use epoxy glue	Apply cyano glue

Hatched-in areas: remove covering film carefully

Assemble left and right sides the same way.

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

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

1-Aileron extension cord installation

30cm Extension cord X

Thread (pre-installed at factory)

WING BOTTOM-VIEW

Using the thread (pre-installed at factory) to slide the aileron extension cord into the wing half.

Using the adhesive tape to secure the one end of the aileron extension cord in place.

Adhesive tape

WING TOP-VIEW

WING BOTTOM-VIEW

Adhesive tape

Using the adhesive tape to secure the one end of the aileron extension cord in place.

2- Joining the wing

Before gluing:

- Draw the center line on the wing joiner.
- Trial fit each part before gluing . Be certain that there are no gaps. If the parts will join, but with a gaps, sand or trim the parts a little at a time until the parts meet exactly with no gaps.
- Check for the correct dihedral angle

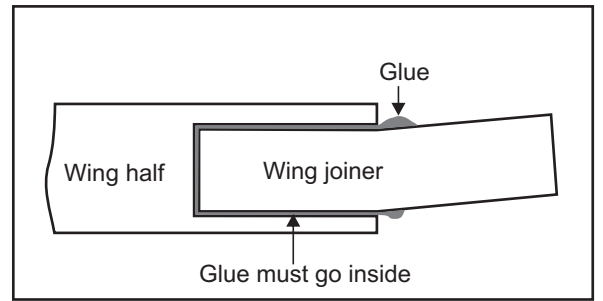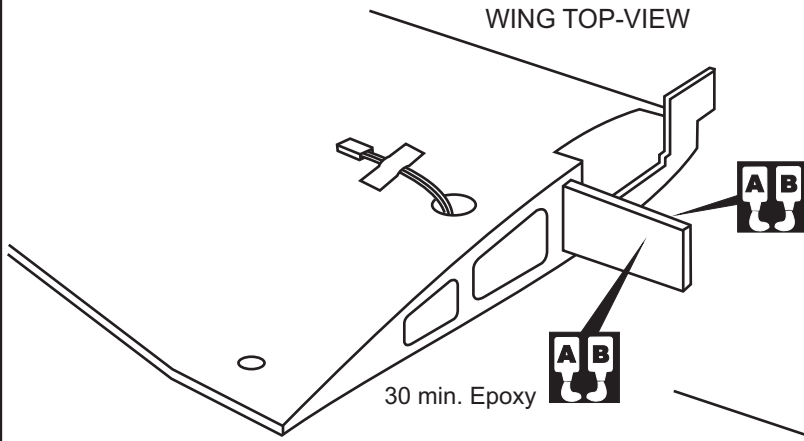Draw the center line on the wing joiner

Adhesive tape
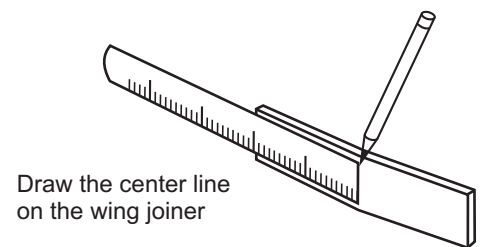
Coat one half of the dihedral brace with epoxy up to the center line. Install the epoxy-coated side of the dihedral brace into the wing joiner cavity up to the center line.
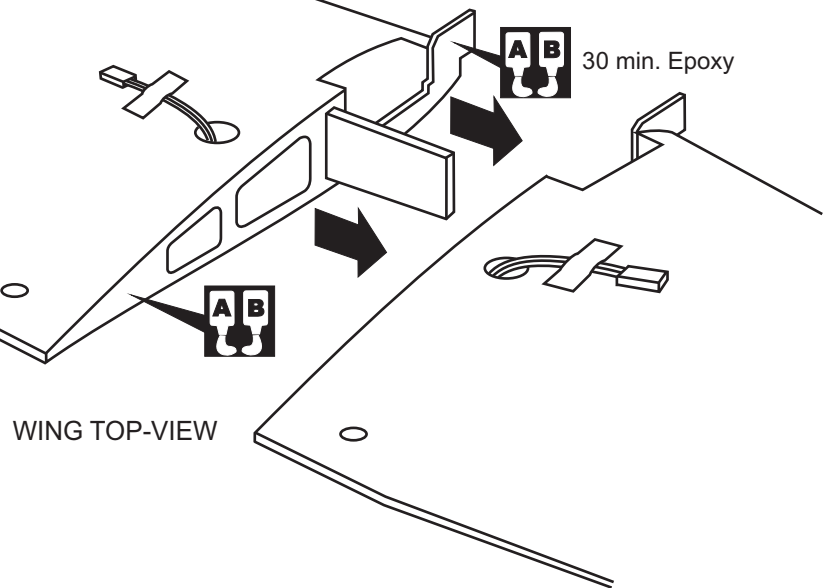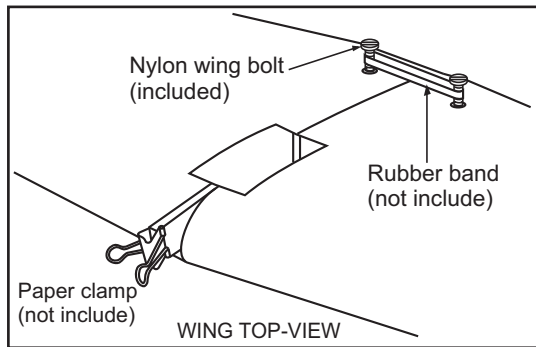
A B

A B

30 min. Epoxy
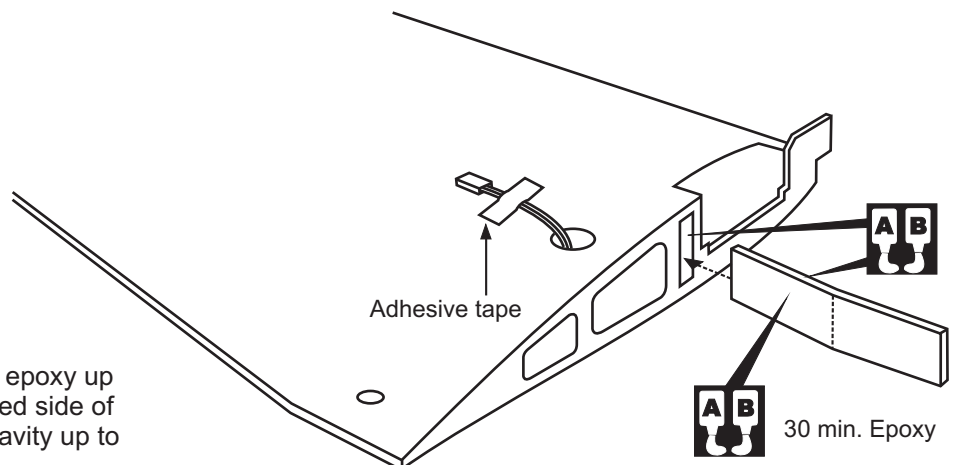
3- Joinning the wing

WING TOP-VIEW

Glue

Wing half | Wing joiner

Glue must go inside

! Make sure to glue securely, If not properly glued, a failure in flight may occur.

A B

30 min. Epoxy

A B

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. Note: The two wing halves roots must fit together perfectly. Clear off the excess epoxy.

A B   30 min. Epoxy

Hold the wing halves together with paper clamp and rubber band.

Nylon wing bolt (included)

Rubber band (not include)

Paper clamp (not include)

WING TOP-VIEW

A B

WING TOP-VIEW

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.
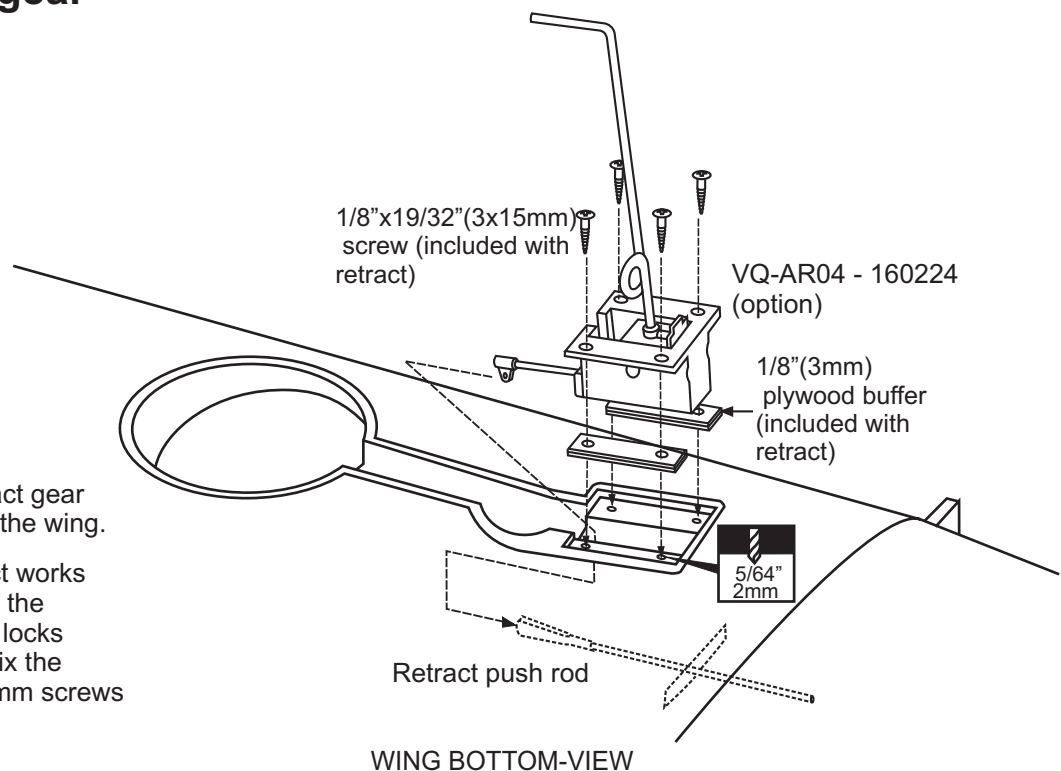
4- Retract landing gear

Steel clevis 2

1/8"x19/32"(3x15mm) screw (included with retract)

VQ-AR04 - 160224 (option)

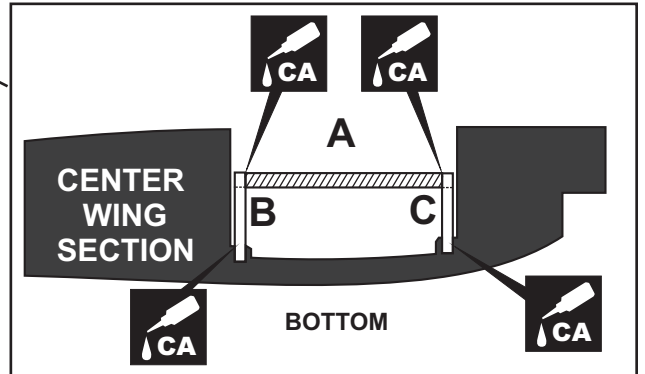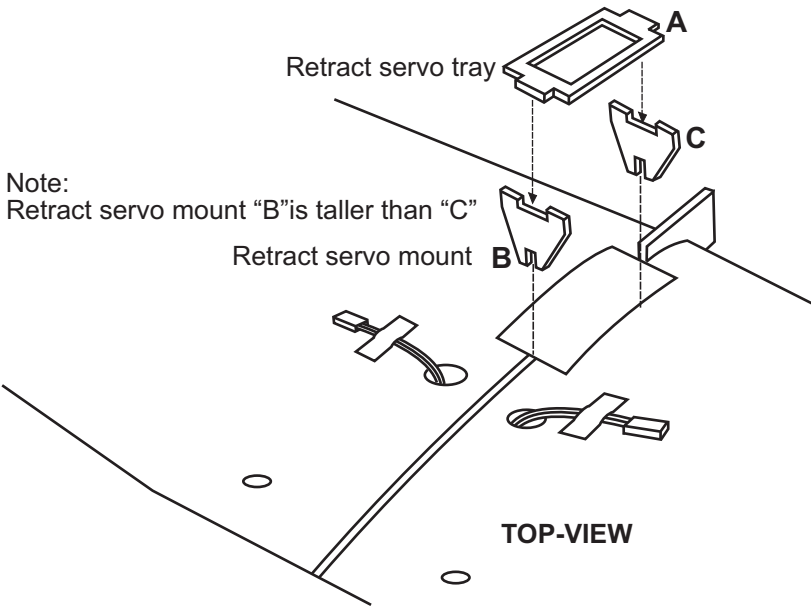1/8"(3mm) plywood buffer (included with retract)

1-Join the push rod to the retract gear arm and trial fit the retract into the wing.

2-After checking that the retract works smoothly and be sure to adjust the stroke so that the landing gear locks in both up and down position, fix the retracts on the wing with 3x15mm screws
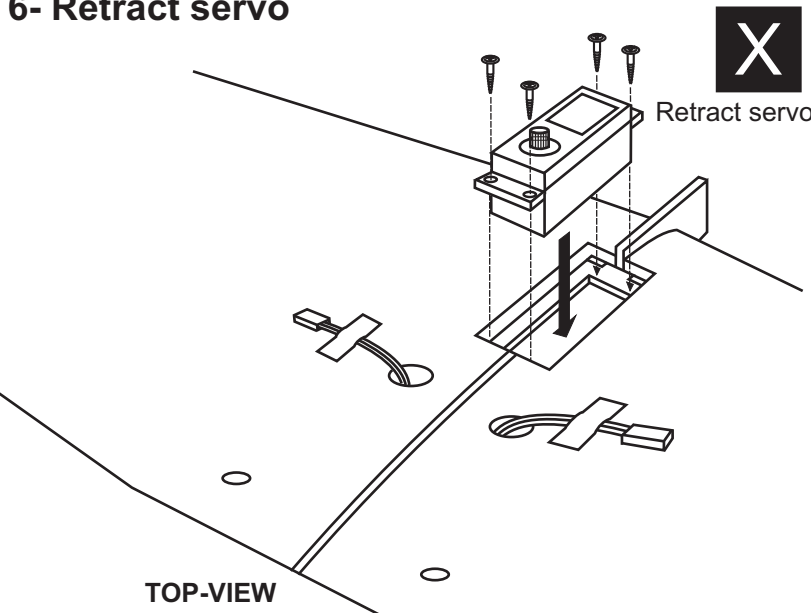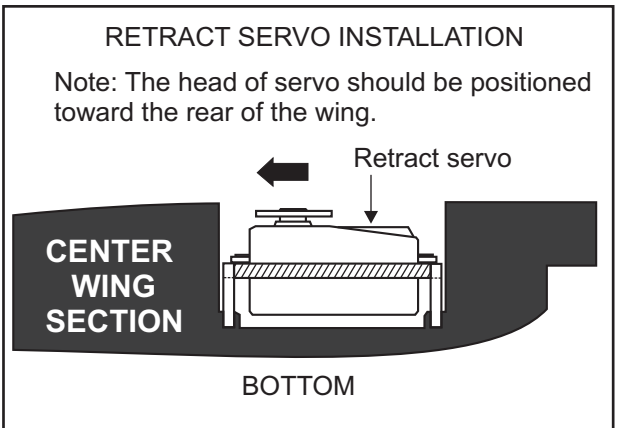
5/64" 2mm

Retract push rod

WING BOTTOM-VIEW

5- Retract servo mount

A

Retract servo tray

C

Note:
Retract servo mount "B" is taller than "C"

Retract servo mount **B**

TOP-VIEW

CA   CA

A

**CENTER
WING
SECTION**

B   **C**

BOTTOM

CA   CA

6- Retract servo

X

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

Retract servo

RETRACT SERVO INSTALLATION

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

Retract servo

**CENTER
WING
SECTION**

BOTTOM

TOP-VIEW

7- Retract linkage

Join the pushrod to the retract servo arm. With the retract landing gear and the retract servo in the extended position, mark the position where each of the linkages will attach to the servo arm. A small piece of masking tape works well for this. Cut off the excess length of each rod.

Retract
servo

Retract gear

Retract gear

Retract push rod

RIGHT

LEFT

RETRACTED   EXTENDED
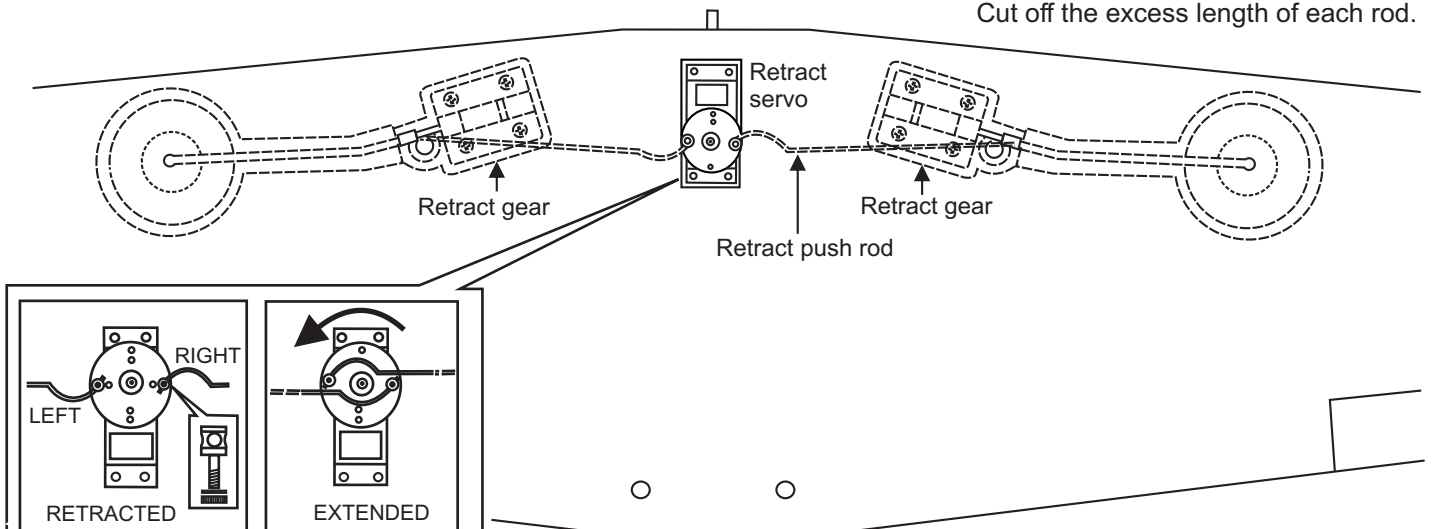
Be sure to adjust the stroke so that the landing gear locks in both up and down position.

8- Gear cover installation
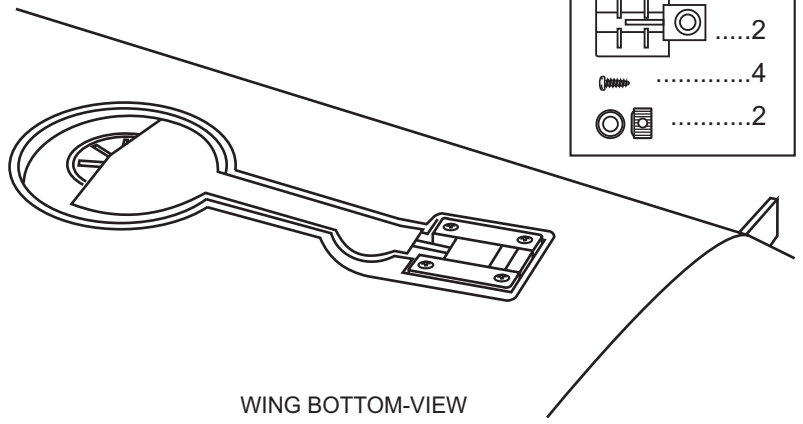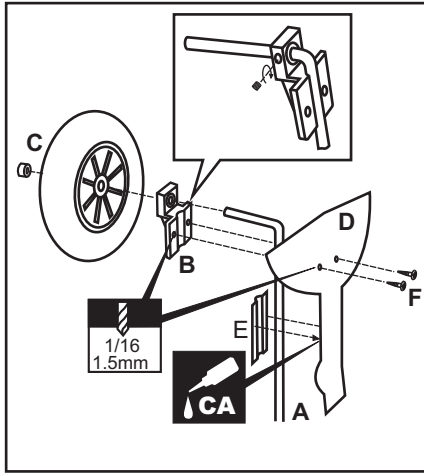
..... 2
.... 4
.... 2

C
B
1/16
1.5mm
CA
E
A
D
F

WING BOTTOM-VIEW

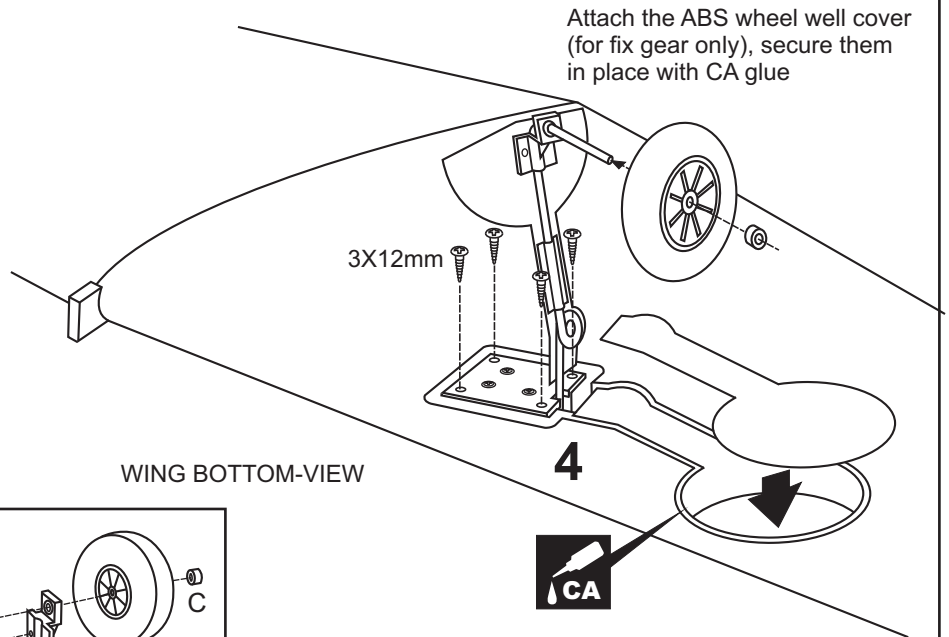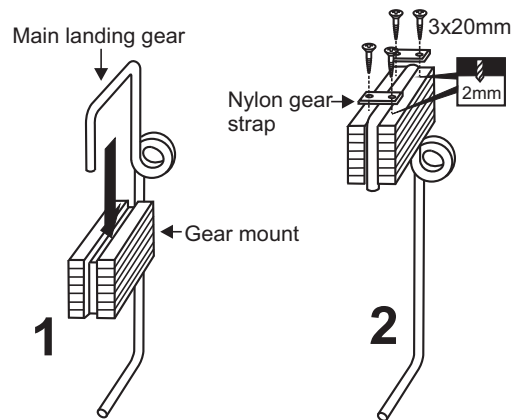Attach the wheels on the main gear wires(A) with plastic wheel retainers(B)
and wheel collars(C) as show.
Attach the ABS gear cover(D) on the wires with fitting strap(E) and screws(F) as show.

9- Fixed gear

Attach the ABS wheel well cover
(for fix gear only), secure them
in place with CA glue

Main landing gear

3x20mm

Nylon gear strap

2mm

Gear mount

1

2

3X12mm

WING BOTTOM-VIEW

4

CA

2mm

Ply gear mount flat

Square plastic

3x20mm

3

D

B
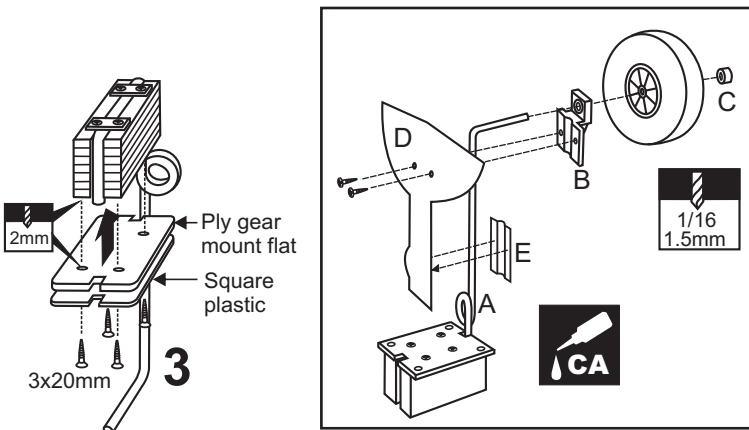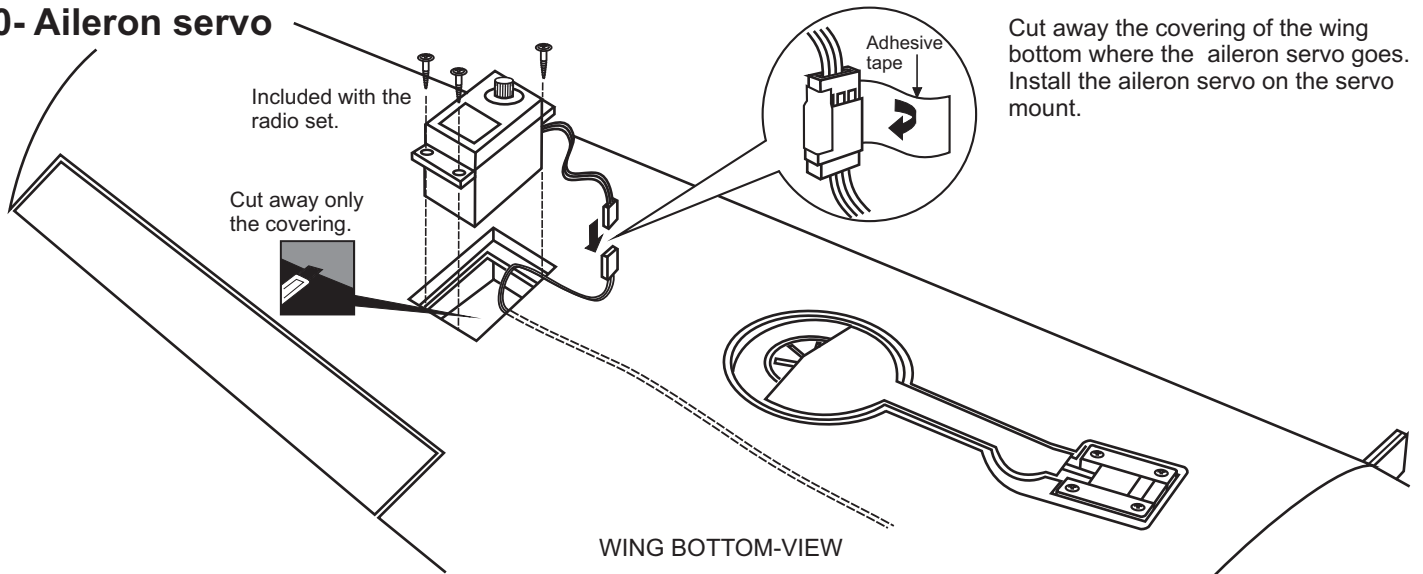
C

1/16
1.5mm

E

A

CA

Attach the wheels on the main gear wires(A) with plastic wheel
retainers(B) and wheel collars(C) as show. Attach the ABS gear
cover(D) on the wires with fitting strap(E) and screws(F) as show.
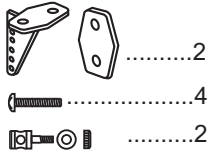
10- Aileron servo

Included with the radio set.

Cut away only the covering.

Adhesive tape

Cut away the covering of the wing
bottom where the aileron servo goes.
Install the aileron servo on the servo
mount.

WING BOTTOM-VIEW

11- Aileron linkage

Plastic control horn

..........2

.................4

..........2

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

90°

YES   **NO**

3mm set Screw

Aileron pushrod
D=5/64"(2mm)

2 mm

X
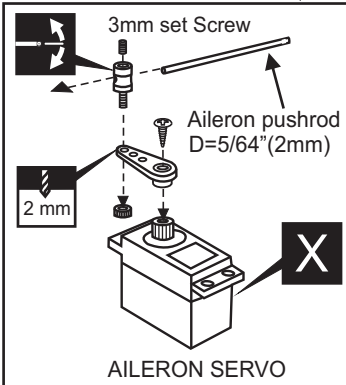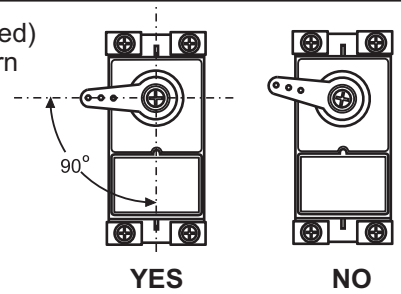
AILERON SERVO

WING BOTTOM-VIEW

Attach the control horn on the aileron with 2x15mm screws. Screw the clevies halfway on the theared end of the aileron push rod. Attach the push rod to the aileron horn. Mark the position where the push rod will attach to the servo arm. Cut off the excess length of the push rod

Ensure that the servo is centered. If necessary, adjust the metal clevis so the aileron is also in the neutral position.
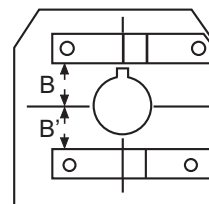
12- Engine mount

! Align the mark on both mounts with the mark on the fuselage

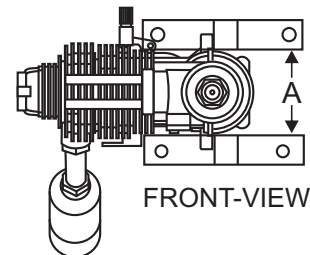Note: Engine thrust on balk head is already adjust at factory

A

Magnetic top hatch

Magnetic piece

5mm

FRONT-VIEW

B
B'

B=B'

A

FRONT-VIEW

1-Pul the magnetic top hatch out of the fuselage

2-Using a pencil or felt tipped pen, mark the fire wall where the four holes are to be drilled.

3-Remove the engine mount and drill a 3/16"(5mm) hole through the fire-wall at each of the four marks made above.
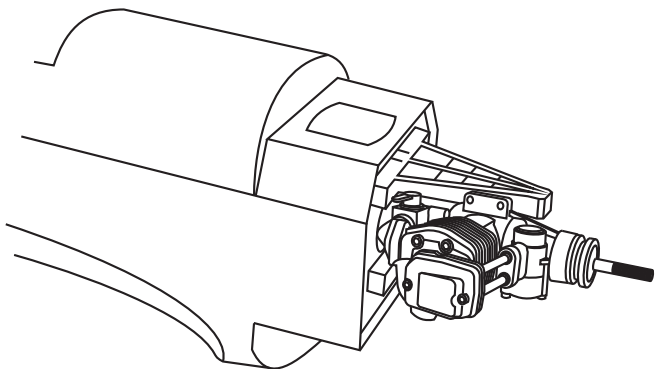4-Attach the four blind-nut to the fire-wall as show.

5-Reposition the engine mounts on to the fire-wall and secure them with four 5/32x1"(4x25mm) screws.
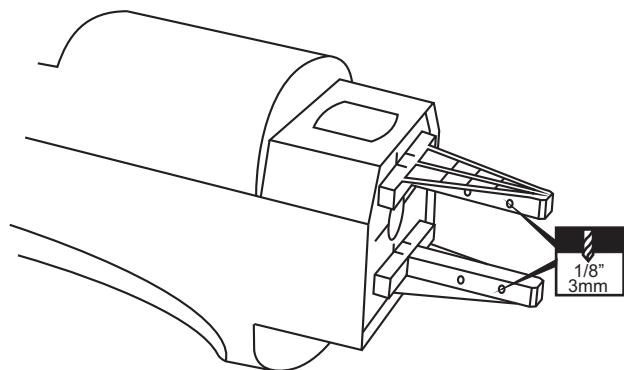
4x25mm screw
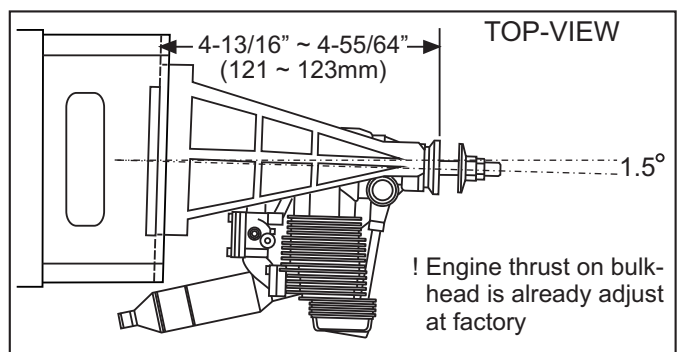...4

Blind-nut
.................4
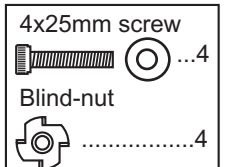
13- Engine

3x20mm screw
�▎ ◎ ...4
◎▯ Nut......4

6-Reposition the engine on the engine mount beams so the distance from the prop hub to the fire wall is 4-51/64"(122mm).

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

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

9-Reposition the engine on the mounting beams , aligning it with the holes drilled. Insert one 1/8x1"(3x25mm) screw through each of the mounting holes. Apply silicon (Blue-Locktile 242) to each of the 3x25mm screw and firmly secure the engine to the engine mount using four 1/8"(3mm) nuts.

1/8"
3mm

4-13/16" ~ 4-55/64"
(121 ~ 123mm)

TOP-VIEW

1.5°

! Engine thrust on bulk-head is already adjust at factory
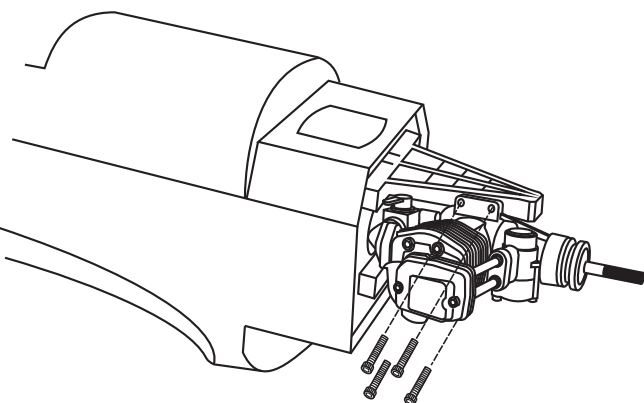
14- Engine
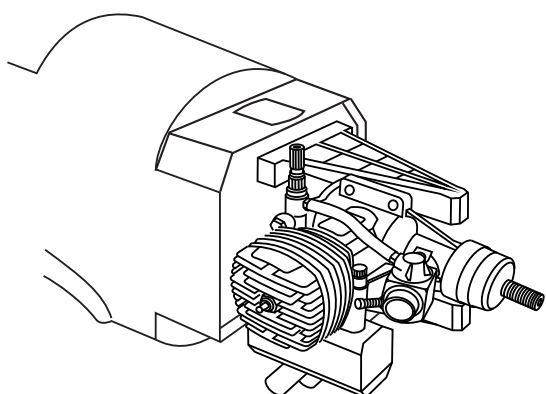
With hang silencer (Pitts-style)
SIDE-VIEW **Seitenansicht**
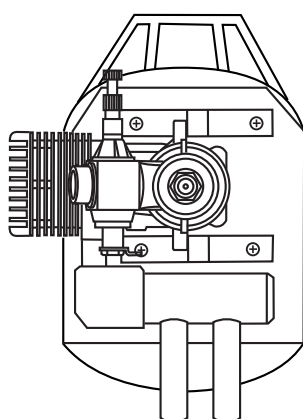
With side silencer

FRONT-VIEW **Vorderansicht**

15- Fuel tank

To muffler
To engine
Filler tube
Rubber stopper
3x35mm screw

X
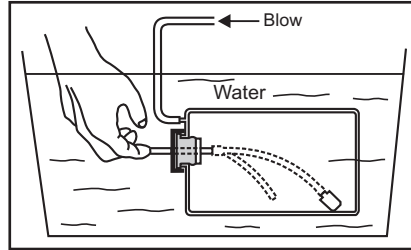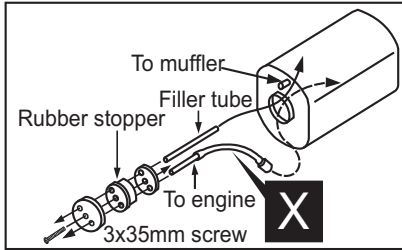
Blow
Water

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.
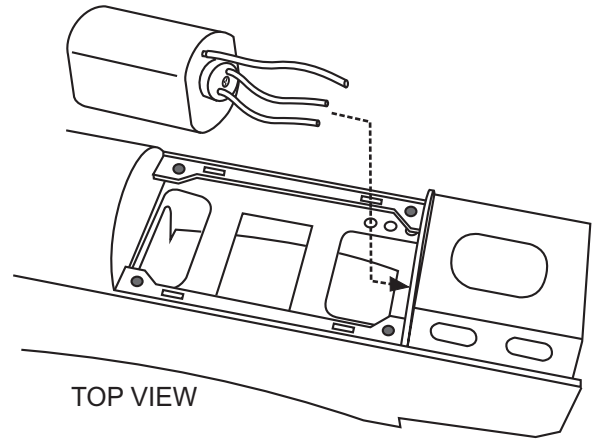
TOP VIEW

Carefully install the fuel tank to ensure that they will not shift during flight (secure the fuel tank in place using foam padding).

16- Electric Motor

CA **1**

2 3mm
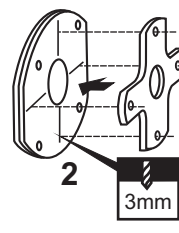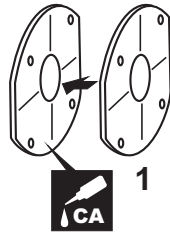
Using a aluminum motor mounting plate as a template, mark the plywood motor mounting plate where the four holes are to be drilled (2).

Remove the aluminum motor mounting plate and drill a 1/8"(3mm) hole through the plywood at each of the four marks marked .
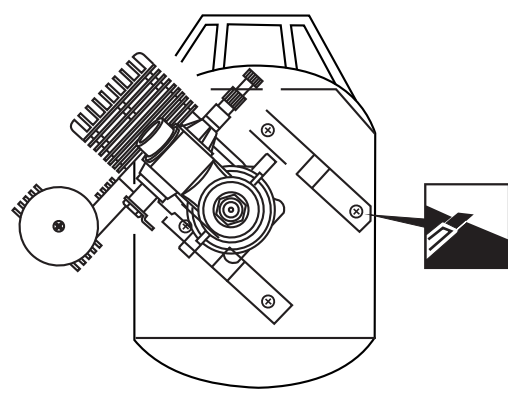
Note: The aluminum motor mounting included with electric motor set.

Firewall

B

SIDE-VIEW **Seitenansicht**

B=B'

B'

125~127mm
(5-1/8")

Sturz und Zug beachten!

A

TOP-VIEW **Draufsicht**

A=A'

A'

! Engine thrust on balk head is already adjust at factory
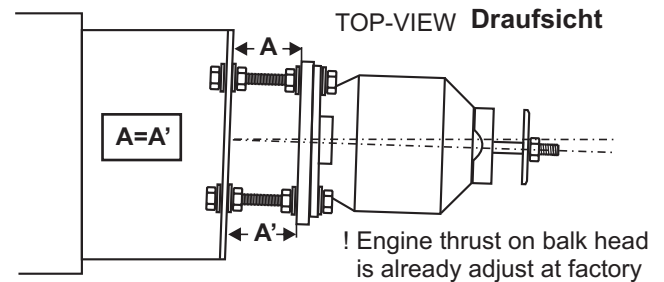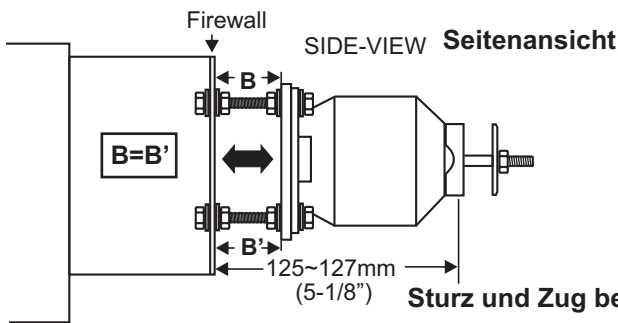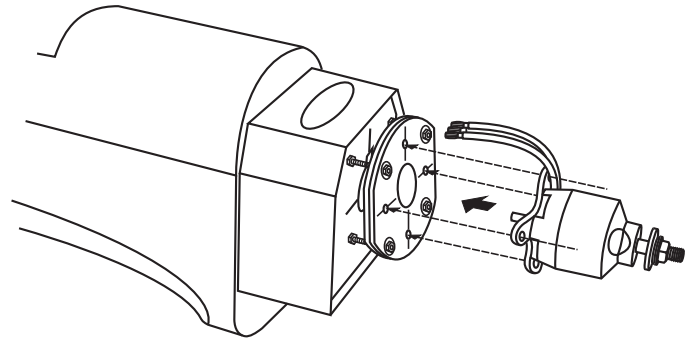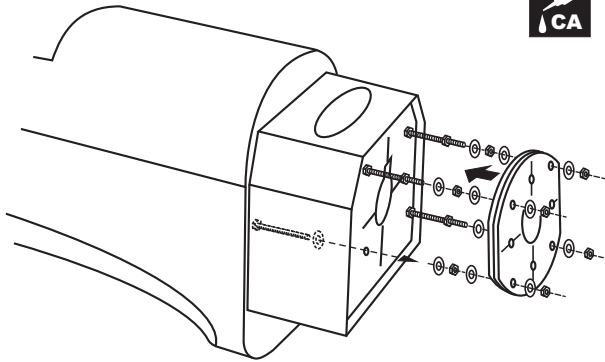
17- Lipo Battery installation

Battery hatch
Akkuklappe

Magnetic piece
Magnet

Battery stand
(3mm plywood)

CA

LiPo Battery

Battery stand

CA
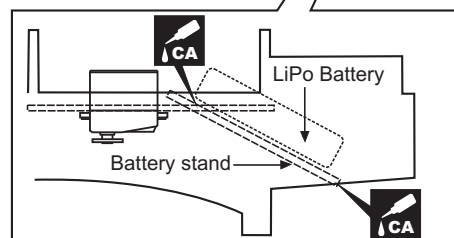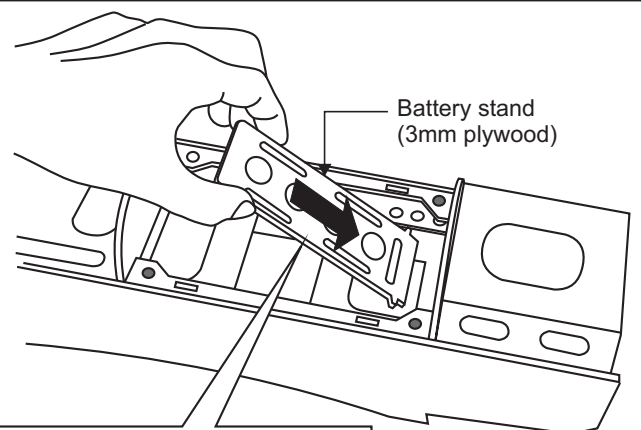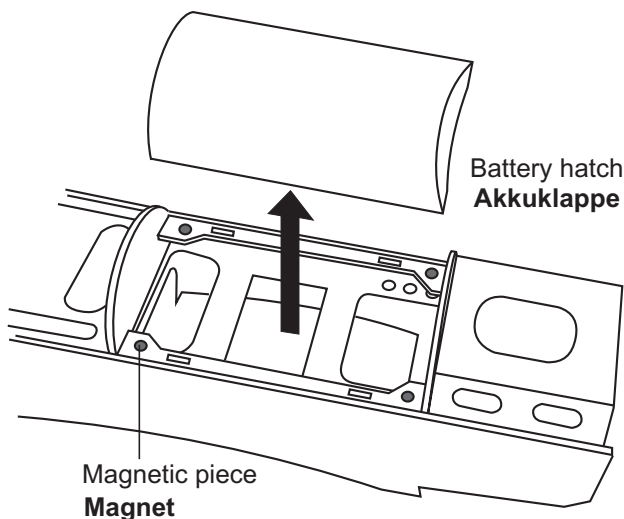
18- Vertical Stabilizer
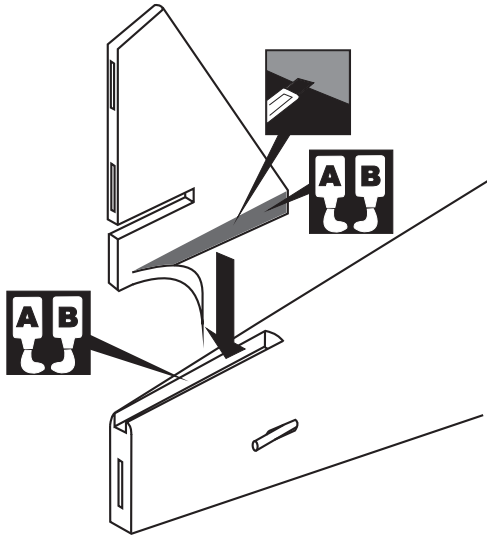
1-Trial fit the vertical stabilizer in place . Check the alignment of the vertical stabilizer. When you are satisfied with the alignment, use a pencil to trace around the right and left of the stabilizer where it meets the fuselage.

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 adust 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.

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

19- Horizontal Stabilizer

Cut away only the covering both the top and bottom side

Cut away only the covering both the right and left side

C=C'

1-Slide the horizontal stabilizer into the slot of the vertical stabilizer. When you are satisfied with the alignment , use a pencil to trace around the right and left of the vertical stabilizer and the top and bottom of the horizontal stabilizer where the vertical stabilizer meets the horizontal stabilizer.

2-Remove the horizontal stabilizer from the vertical stabilizer.
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 of the vertical stabilizer, where the covering was removed, and onto the top and bottom of the horizontal stabilizer, where the covering was removed.

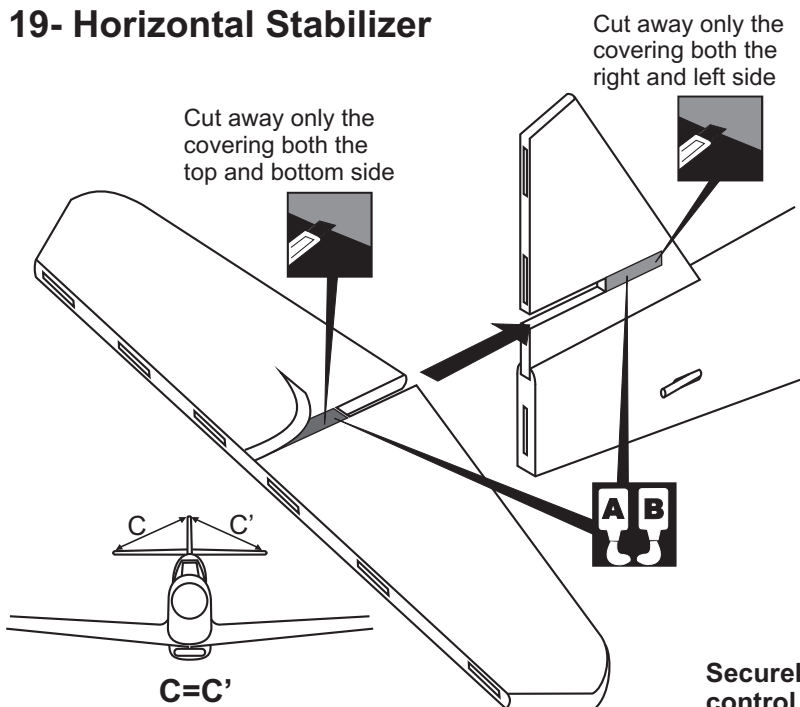4-Again, Slide the horizontal stabilizer into the slot of the vertical stabilizer.

5-Wipe off any excess epoxy using a paper towel and rubbing alcohol.
Allow the epoxy to cure before proceeding to next step.

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

20- Rudder - Elevator

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 and the end of the elevator half should not rub against the horizontal stabilizer. When satisfied with the and alignment, hinge the elevator to the horizontal stabilizer using thin CA glue. Make sure to apply a thin layer of 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.
Do the same way with the rudder.

Control horn
............3
2x20mm screw
..........6

Thin CA

CA Thin CA

STABILIZER

Hinge

0.4"(10mm)

2x20mm screw

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

21- Tail gear

Collar

Piece of fuel tube (not included)

3x12mm screw

Horn

CA

BOTTOM VIEW

0.5"~0.6"
(12~15mm)

0.3"(8mm)

1/16
1.5mm

BOTTOM VIEW

Horn
⬚ 1
2.2m collar
◎ ☐ 1
3x12mm screw
〰〰〰 2

1/16
1.5mm

BOTTOM VIEW

22- Servo

NOTE: Place of servos may be change depend of engine
(Four-stoke or two-stroke engine)

Rudder push rod

Elevator servo   Rudder servo

Throttle servo

Elevator push rod

Throttle pushrod

Connector
▣ ⬡ 1
☐▬◎ 2mm...........3

Elevator pushrod

3mm set Screw

Elevator pushrod
D=5/64"(2mm)

2 mm

X

ELEVATOR SERVO

23- Tail brace

4R   1L   3R   2L

3R

3R and 4R for
the right brace
1L and 2L for
the left brace

(2)

(2)

(1)

(4)

4R

(2)

1.57"(40mm)   1.57"(40mm)

4.1"   4.1"
(105mm)   (105mm)

(3)   (3)

1/16
1.5mm

CA

(5)

(5)

1-Position the tail brace in place (1). Using the pencil mark the location
  of the two brace holes as show (2).
2-Remove the tail brace and drill two 1/16" (1.5mm) as show (3).
3-Slide the two ABS cover on to the right and left tail brace as show (4)
4-Position the tail brace again. Secure it in place with two 2x12mm screws.
5-Slide the two ABS in place and secure them with CA glue (5)

24- Cowling installation

2.5X8mm screw
........4

A B

1/16
1.5mm

2~3mm

5/64
2mm

2.5x8mm screw

25- Decor

Sticker

CA
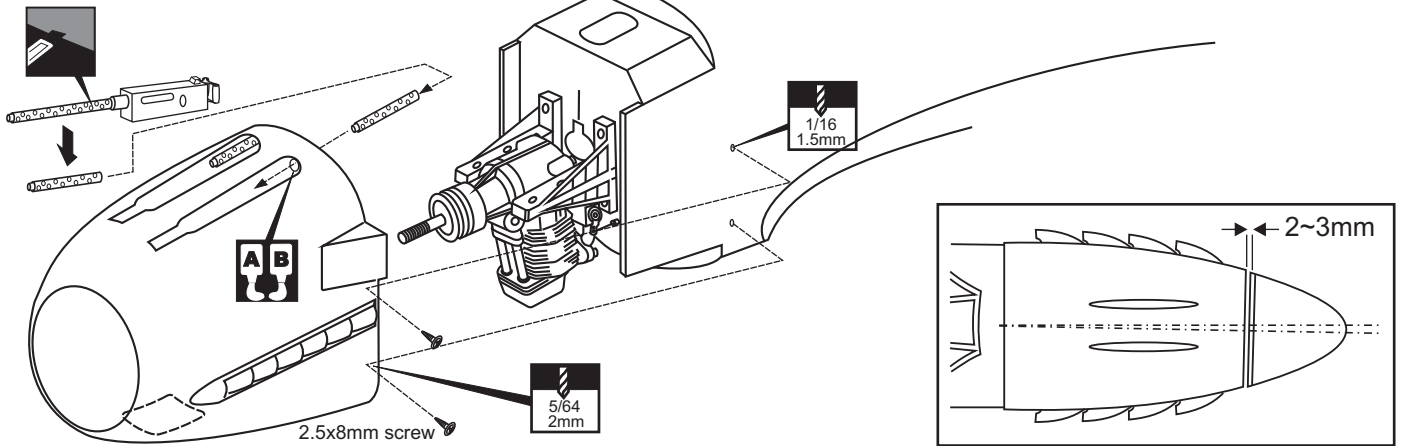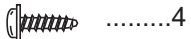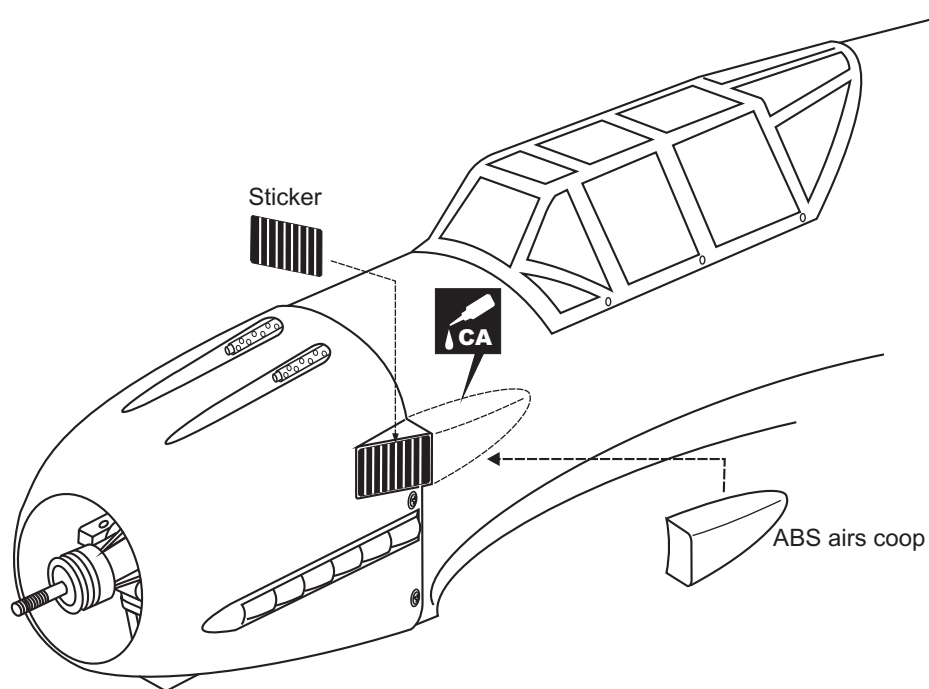
ABS airs coop

26- Air scoop installation

Sticker

ABS airs coop

ABS air scoop

3"(76mm)

3"(76mm)

1"(25mm)

Cut away only
the covering

CA
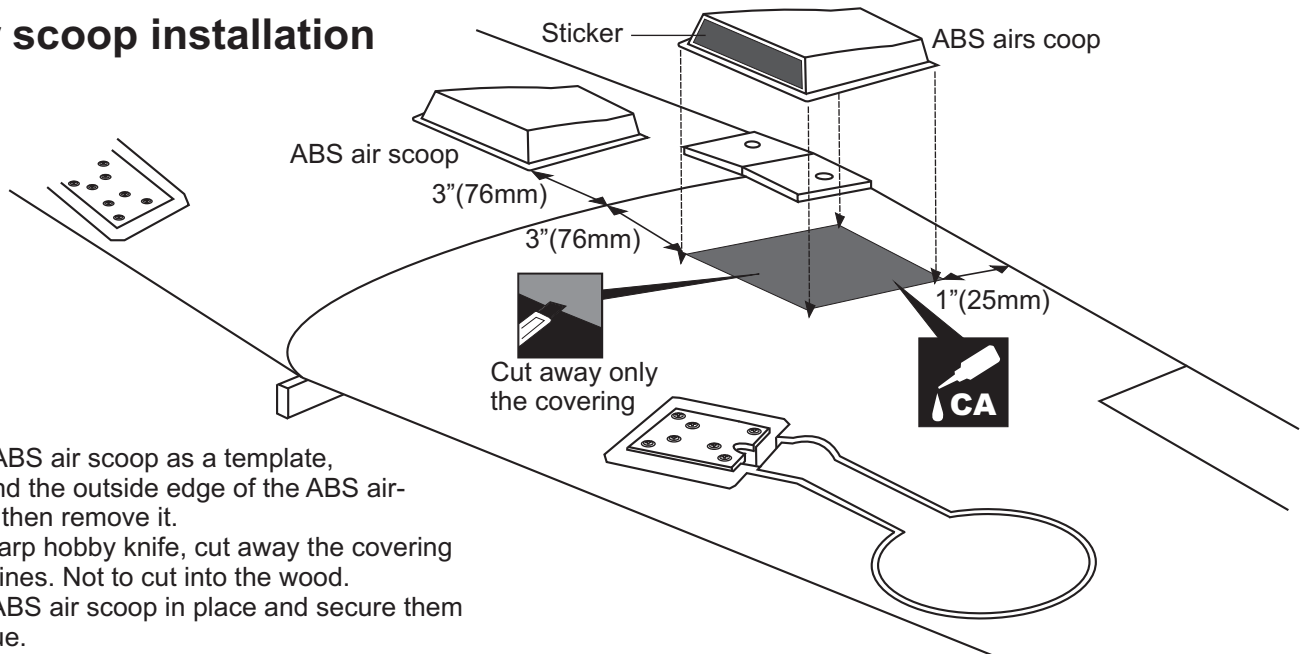
Using the ABS air scoop as a template,
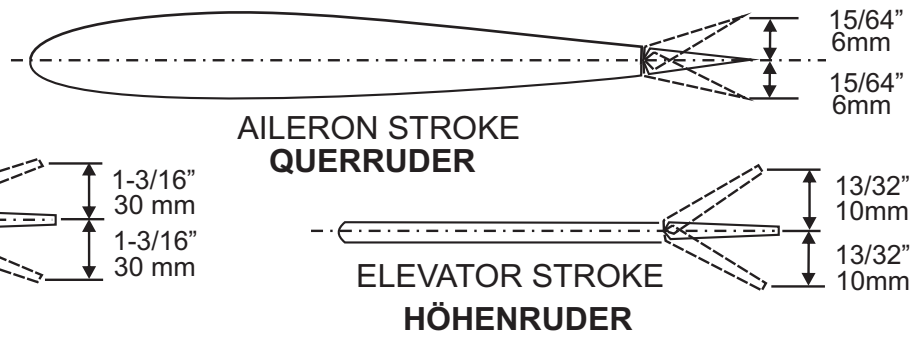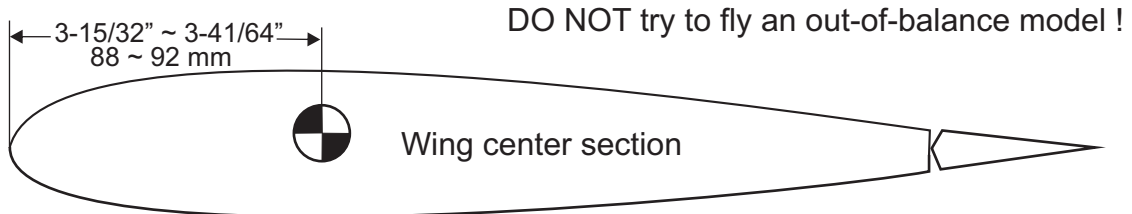trace around the outside edge of the ABS air-
scoop and then remove it.
Using a sharp hobby knife, cut away the covering
inside the lines. Not to cut into the wood.
Apply the ABS air scoop in place and secure them
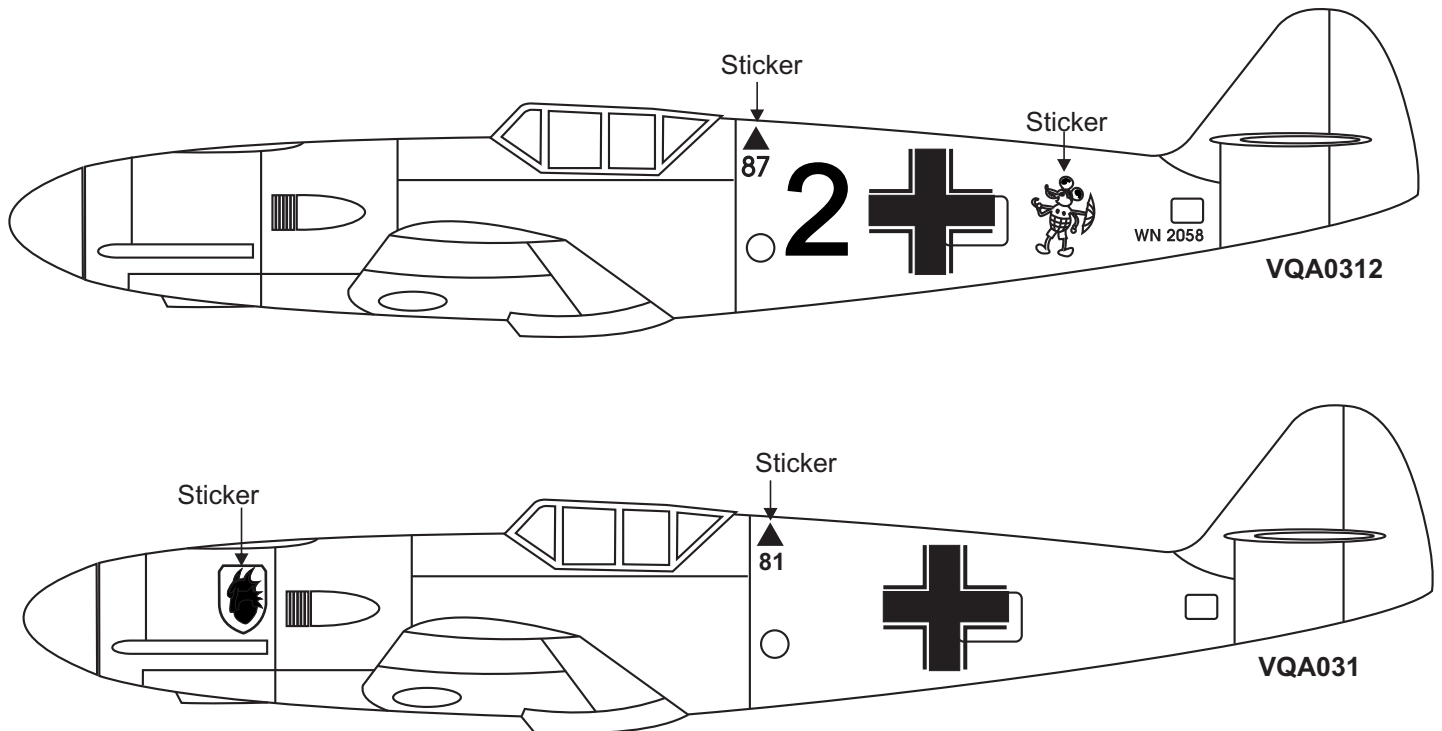with CA glue.

27- Control surface

AILERON STROKE
QUERRUDER

15/64"
6mm

15/64"
6mm

RUDDER STROKE
SEITENRUDER

1-3/16"
30 mm

1-3/16"
30 mm

ELEVATOR STROKE
HÖHENRUDER

13/32"
10mm

13/32"
10mm

28- Balance

3-15/32" ~ 3-41/64"
88 ~ 92 mm

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

Wing center section

29- Decal

Sticker

87

Sticker

WN 2058

2

VQA0312

Sticker

Sticker

81

VQA031

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.

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.