

L39 ALBATROS



ASSEMBLY & OPERATIONS MANUAL

Please review this manual thoroughly before assembling or operating this model.

Proceeding with assembly and use of this product indicates Agreement With & Acceptance of the following Liability Disclaimer.

Model airplanes, model engines, model engine fuel, propellers and related accessories, tools and equipment can be hazardous if improperly used. Be cautious and follow all safety recommendations when using your VMAR model airplane. Keep hands, tools, clothing and all foreign objects well clear of engines when they are operating. Take particular care to safeguard and protect your eyes and fingers and the eyes and fingers of other persons who may be nearby. Use only a good quality propeller that has no cracks or flaws. Stay clear of the propeller and stay clear of the plane of rotation defined by the propeller. The Manufacturer, Distributor, Retailer and/or other

suppliers of this product expressly disclaim any warranties or representations, either expressed or implied, including but not limited to implied warranties of fitness for the purposes of achieving and sustaining remotely controlled flight. In no event will the Manufacturer, Distributor, Retailer and/or other suppliers of this product have any obligation arising from contract or tort, or for loss of revenue or profit, or for indirect, special, incidental, consequential or other damages arising from the use of this product. In purchasing and/or using this product, the user accepts all responsibility for its use and accepts all liability associated with such use.

CAUTION

A Remote Control Model Aircraft is not a toy. It is a flying model that functions much like a full size airplane. If you do not assemble and operate this product properly you can cause injury to yourself and others and damage property. **DO NOT FLY** this model if you are not qualified. You are entirely responsible for the mechanical,

aeronautical and electrical integrity of this model and its structure, control surfaces, hinges, linkages, covering, engine, radio, wiring, battery and all other components. Check all components before and after each flight.

Don't fly until it's right!



POLYCOTE[®] ECS
ENHANCED COVERING SYSTEM



The Graphics and Detailing are inside the POLYCOTE ECS!

STAGE 1

INSTALLING THE AILERON SERVOS INTO THE WING.

To install the aileron servos into the wing you will need the following items :

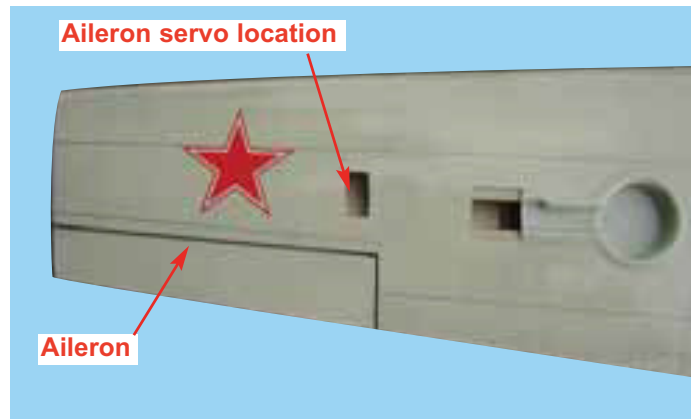
- 2 Servos
- Servo mounting screws and grommets as supplied with the servo
- Servo control arms as supplied with the servo
- Two aileron control rod assemblies supplied with the kit. The assemblies consist of a metal rod with a clevis screwed onto each end
- Low tack masking tape
- 2 aileron control horn assemblies



1A - Prepare the servo by fitting the rubber grommets & ferrules supplied with your radio



Other VMAR model Bulldog SK 61



1B - Aileron and aileron servo location

STAGE 2

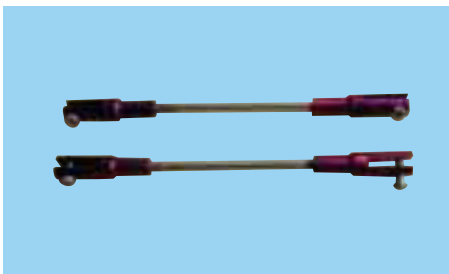
INSTALLING THE AILERON CONTROL SYSTEM

Step 5.1 Consult your radio instruction manual and center the aileron servo by plugging it into the aileron channel in the receiver. Turn on the transmitter and then the receiver. Center the aileron trim lever on the transmitter. Remove the servo arm mounting screw and the servo arm.

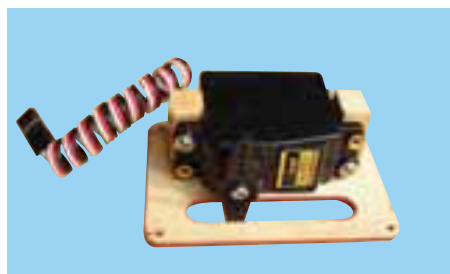
Step 5.2 Mount the servo to the aileron servo tray (see 5B)

Step 5.3 Mount the aileron servo tray to wing and connect the aileron control rod (see 5C)

Step 5.4 Repeat step 5.2 to 5.3 to other side of the wing



2A - Aileron control rod assembly



2B - Aileron torque rod with control horn



2C - Aileron servo and control rods installed

STAGE 3

FITTING THE HORIZONTAL AND VERTICAL STABILIZERS

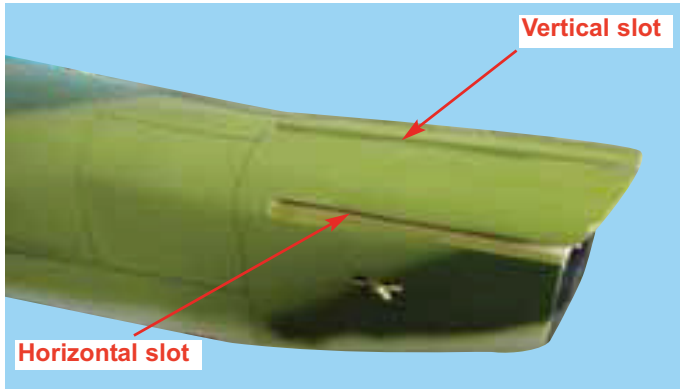
To install the stabilizers you will need:

- Fuselage
- Vertical stabilizer with pre-installed rudder
- Horizontal stabilizer with pre-installed elevator

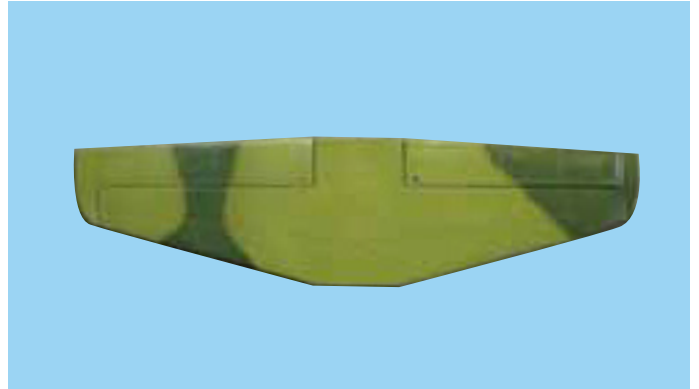
WE RECOMMEND MEDIUM GRADE THREAD LOCKER BE APPLIED SPARINGLY TO ALL METAL TO METAL SCREW FASTENERS. DO NOT APPLY TO PLASTIC

STAGE 4

FITTING THE HORIZONTAL STABILIZER

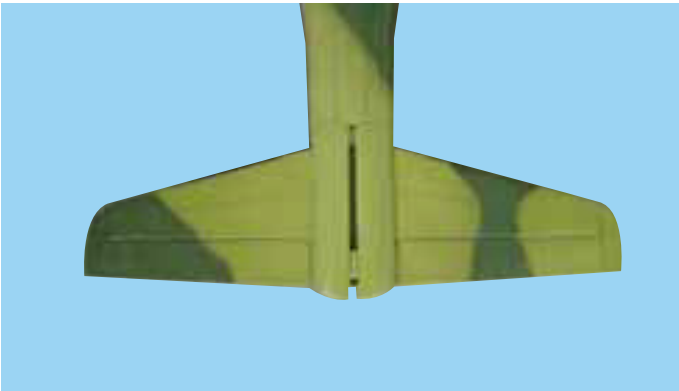


4A - The fuselage slots for the vertical & horizontal stabilizers

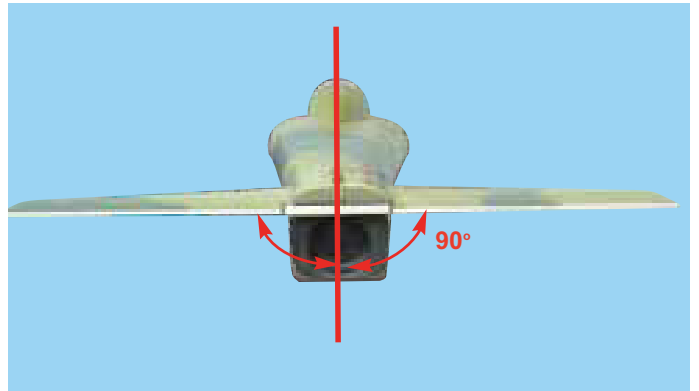


4B - Horizontal stabilizer with pre-installed rudders

Mount the wing onto the fuselage first. The wing will be used as a reference point to align the horizontal stabilizer



4C - Trial fit the horizontal stabilizer into the fuselage



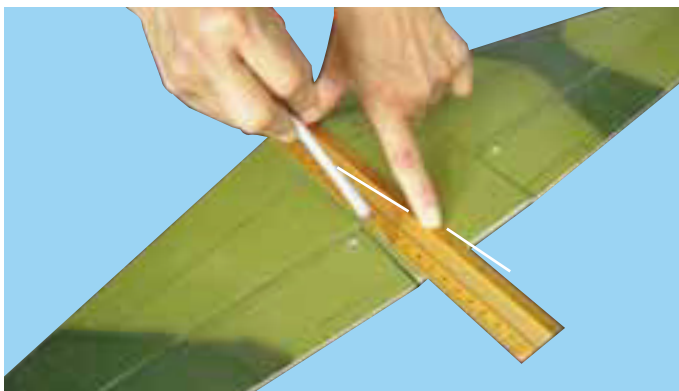
4D - Horizontal stabilizer align with 90 degree to the fuselage



4E - Mark the top of the horizontal stabilizer



4F - ...And the bottom



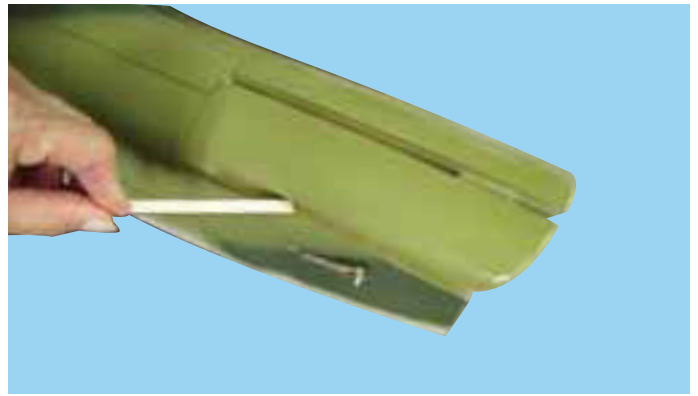
4G - Cutting inside the lines. **DO NOT CUT THE WOOD**



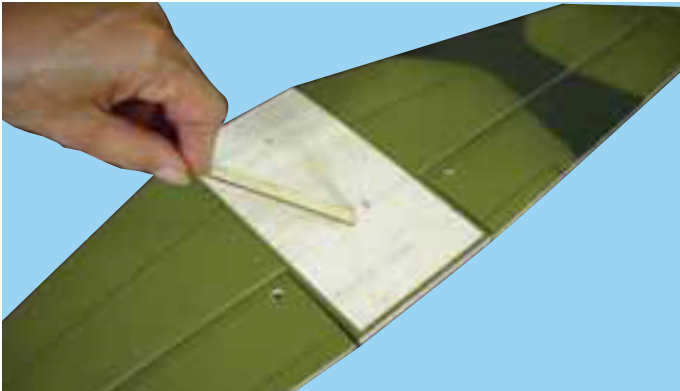
4H - Remove the covering from top surface



4I - Also remove the covering from bottom surface



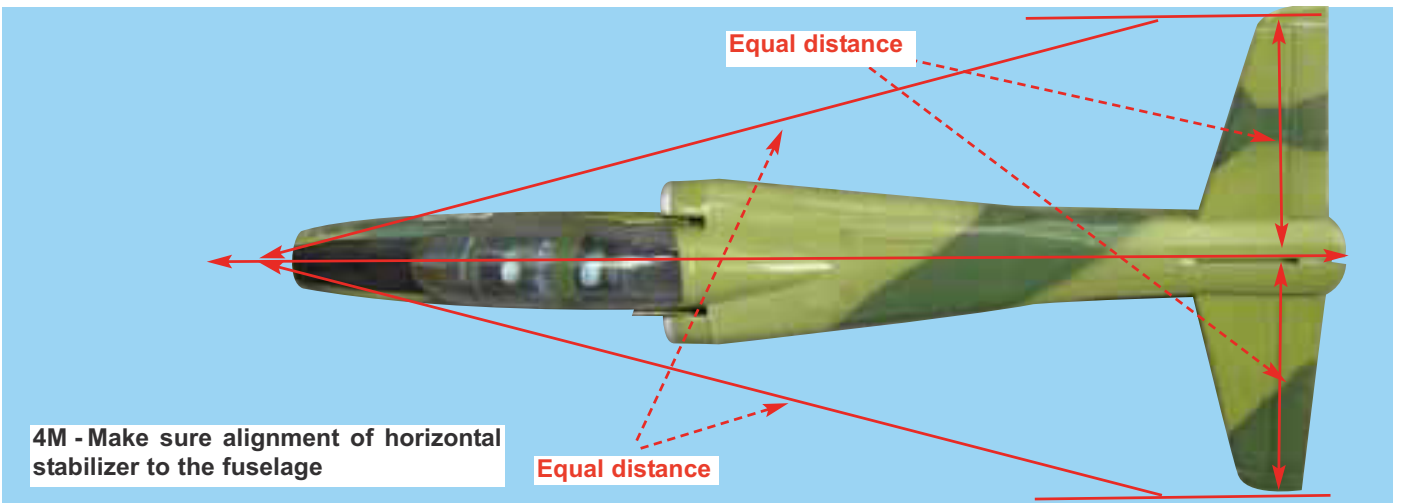
4J - Apply plenty of 30 minute epoxy to the horizontal slot



4K - Apply plenty of 30 minute epoxy to the expose wood area on both side of horizontal stabilizer



4L - Slide horizontal stabilizer to the slot,wipe off excess epoxy



4M - Make sure alignment of horizontal stabilizer to the fuselage

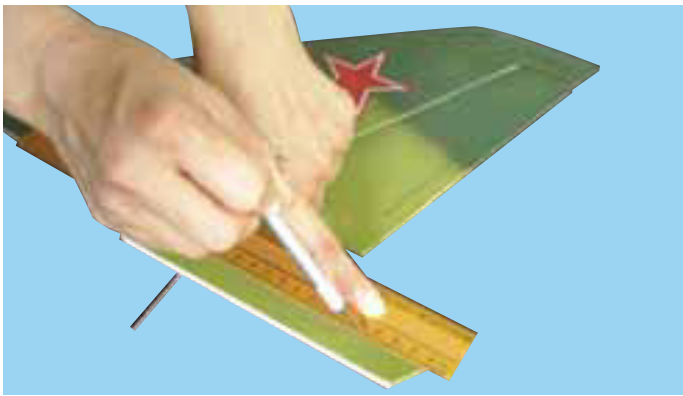
STAGE 5 FITTING THE VERTICAL STABILIZER



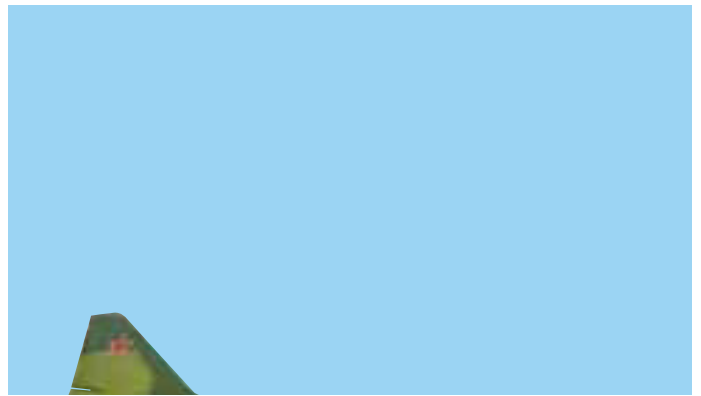
5A - Trial fit the vertical stabilizer into fuselage slot.



5B - Mark both sides of the vertical stabilizer



5C - Carefully cut through the covering. **DO NOT CUT THE WOOD**



5D - Remove covering from both sides

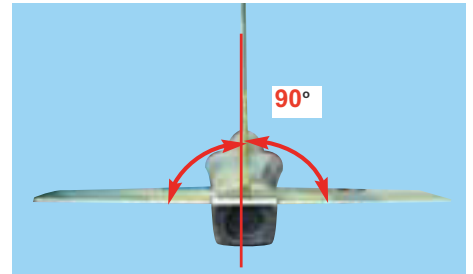
STAGE 6 FITTING THE VERTICAL STABILIZER (Cont.)



6A - Apply plenty of 30 minute epoxy to the expose wood area on both side



6B - Slide the stab into place & remove excess epoxy

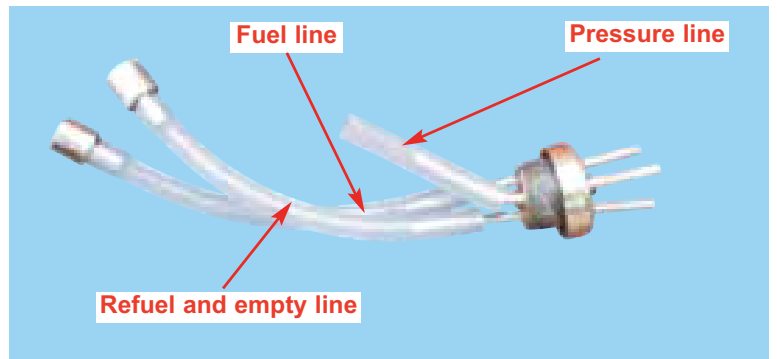


6C - 90 degree angle between the horizontal and vertical stabilizers

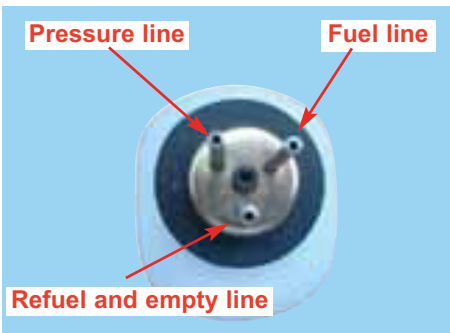
STAGE 7 FITTING THE FUEL TANK

To assemble the fuel tank you will need the following items:

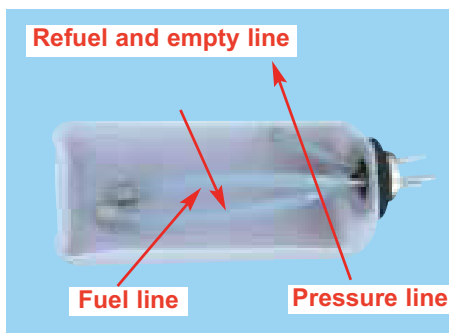
- The fuel tank and fuel stopper assembly (supplied)
- 2 clunks (supplied)
- About 10 in. (25.4 cm) of medium ID silicone fuel line (DUB-197 or DUB-222 or similar)



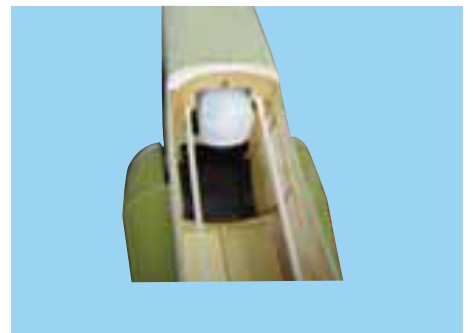
7A - Use 2 in. (50 mm) for the pressure line and 4 in. (100 mm) for the refuel line



7B - Fuel tank and stopper assembly (front view)



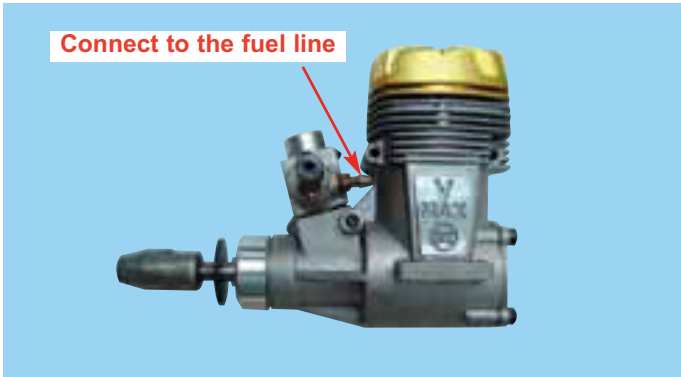
7C - Illustration of fuel line positioning inside cutaway of the tank



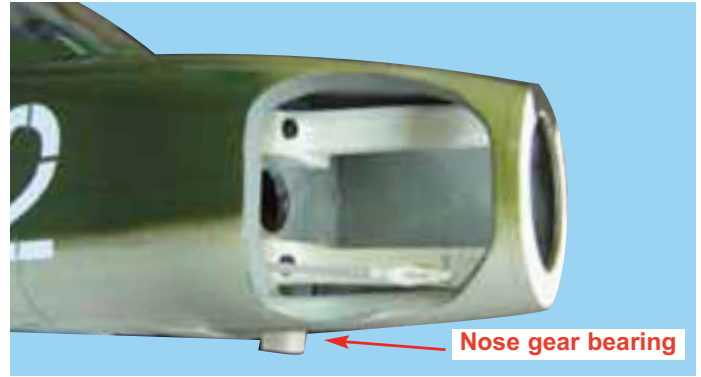
7D- Fuel tank installed into the fuselage

STAGE 8

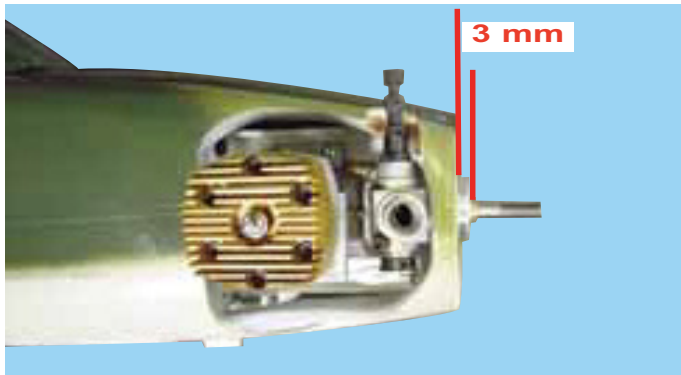
INSTALL ENGINE



8A - Engine size from .46 to .52 2 cycles or .60 to .90 4 cycles (the VMAX .52 recommended)



8B - Pre-installed engine mount to the fuselage



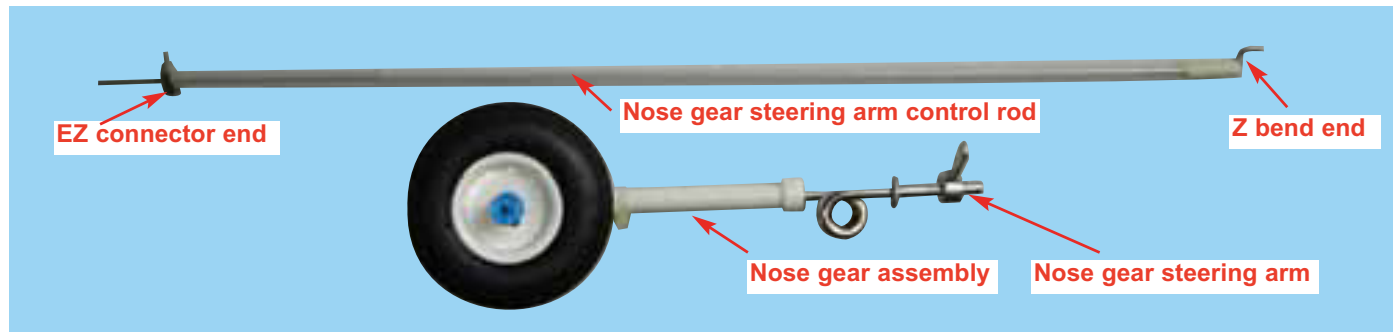
8C - Mount the engine to the fuselage (side view)



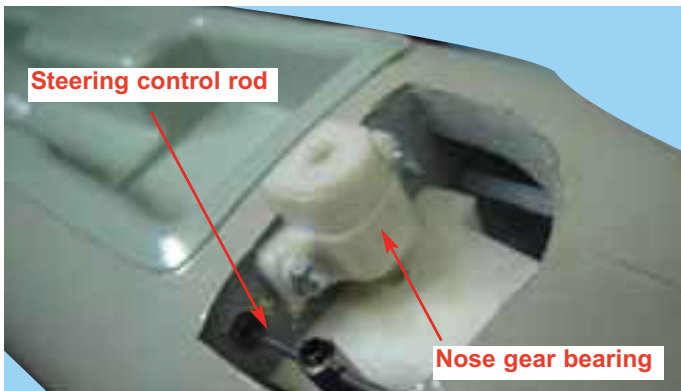
8D - Mount the engine to the fuselage (front view)

STAGE 9

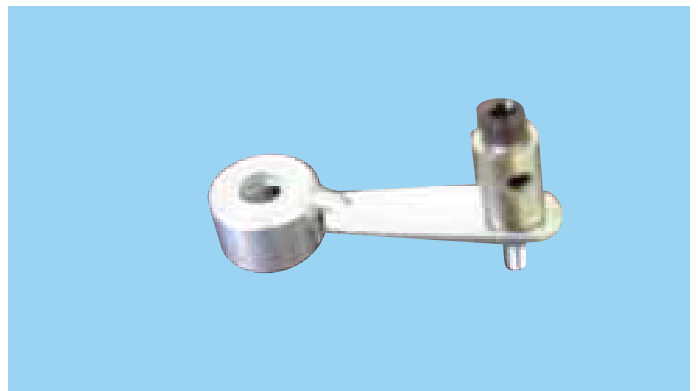
INSTALLING THE NOSE GEAR



9A - Nose gear assembly and nose gear steering control rod



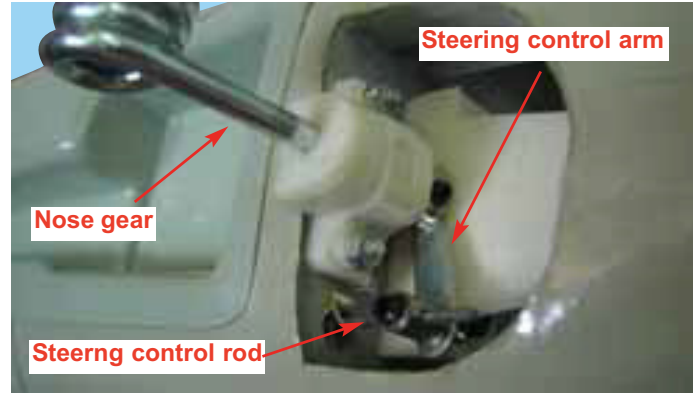
9B - Nose gear bearing and nose steering control rod pre-installed to the fuselage



9C Install the EZ connector to the steering control arm



9D - Insert steering control rod to the EZ connector



9E - Insert the steering control arm to the nose gear bearing then insert the nose gear to the nose gear bearing



9F -Fasten the steering arm to the nose gear using an allen key to tighten the hex head set screw

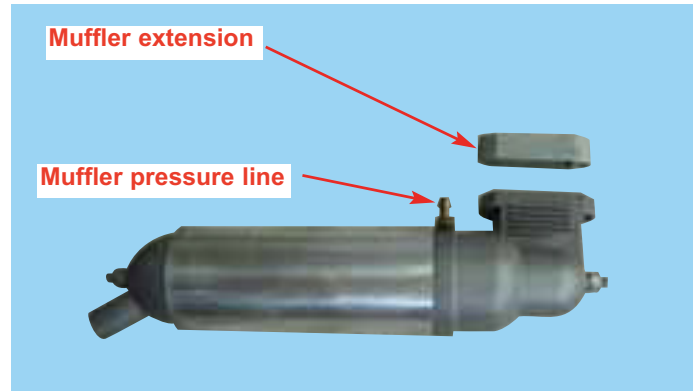


9G -Fasten the steering arm to the steering rod using an allen key to tighten the hex head set screw

STAGE 11 INSTALL THE ENGINE MUFFLER

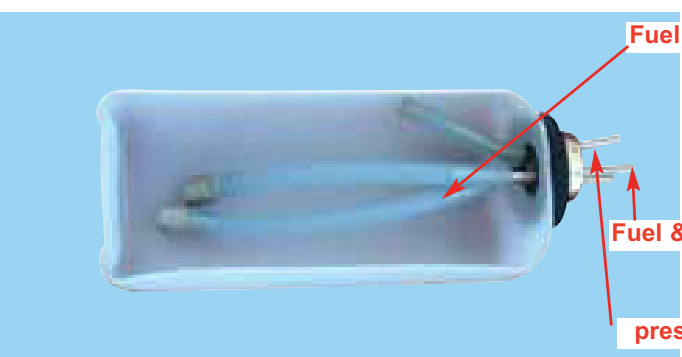


11A - Install muffler to the engine

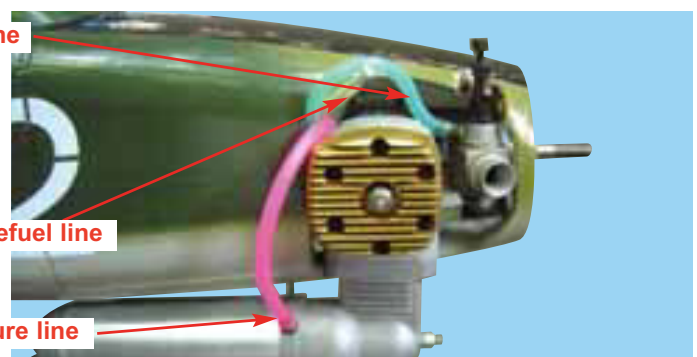


11B - VMAX .46-.55 2cycles muffler with extension

STAGE 12 CONNECTING THE FUEL & PRESUSURE LINE



12A - Install muffler to the engine

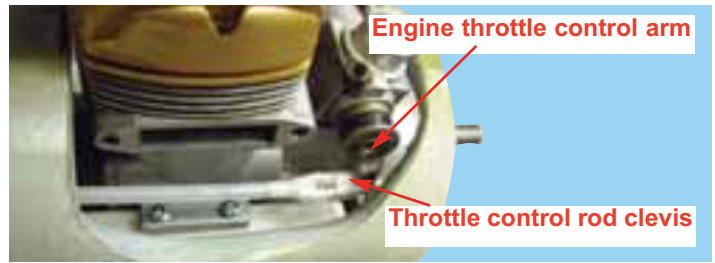


12B - Fuel line connected to the carburetor and pressure line connected to the muffler

STAGE 13 CONNECTING THROTTLE CONTROL ROD TO THE ENGINE



13A - Typical connecting the throttle control rod between throttle servo control arm to the engine throttle control arm



13B - Clevis attached to the engine throttle arm

STAGE 14 INSTALL THE MAIN LANDING GEAR



14A - Main landing gear location



14B - Main landing gear assembly



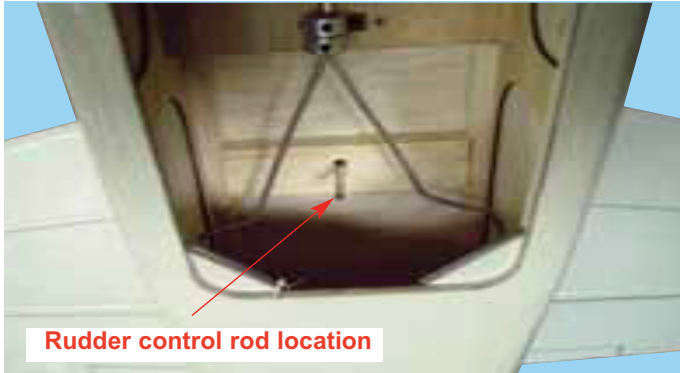
14C - Use eight 3 x 15mm screws to mount the main landing gear to the wing



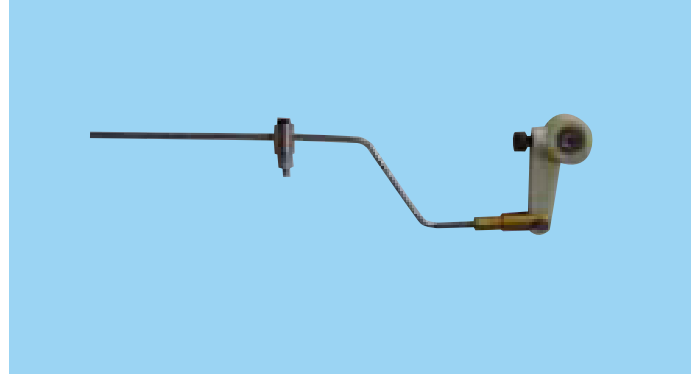
14D - Main landing gear installed to the wing

STAGE 15

FITTING THE RUDDER CONTROL



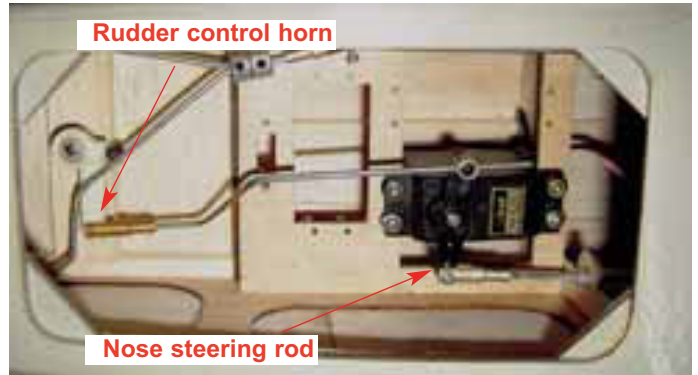
15A - Rudder control rod location



15B - Rudder control horn assembly



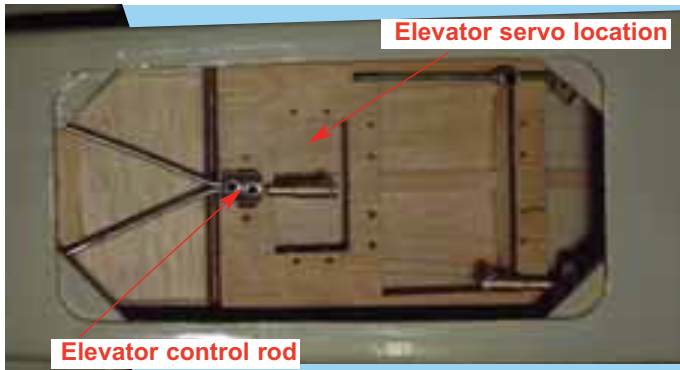
15C - Rudder control horn installed to the control rod



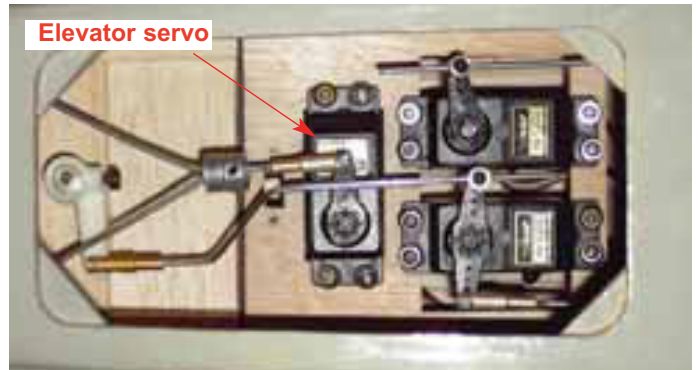
15D - Rudder control rod connectd to the servo arm

STAGE 16

FITTING THE ELEVATOR CONTROL



16A - Pre-installed elevator control rod to the fuselage



16B - Elevator control rod connected to the elevator servo

STAGE 18

CONNECTING PUSHROD TO THE ELEVATOR



18A - Typical control horn mounted to a control surface



18B - Elevator control rod connected to the control horn

STAGE 19

INSTALLING THE PROPELLER AND THE SPINNER



19A - Aluminum spinner completed with all hardware



19B - Install the spinner backing plate



19C - Install the propeller, the prop washer and the prop nut



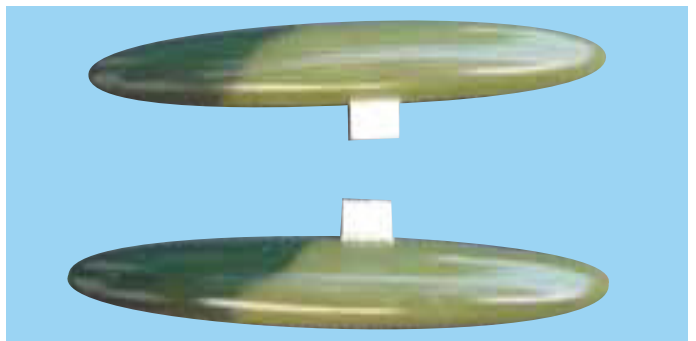
19D - Install the spinner cone using the retaining hex bolt, Ensure the retaining bolt is tight and secure

STAGE 20

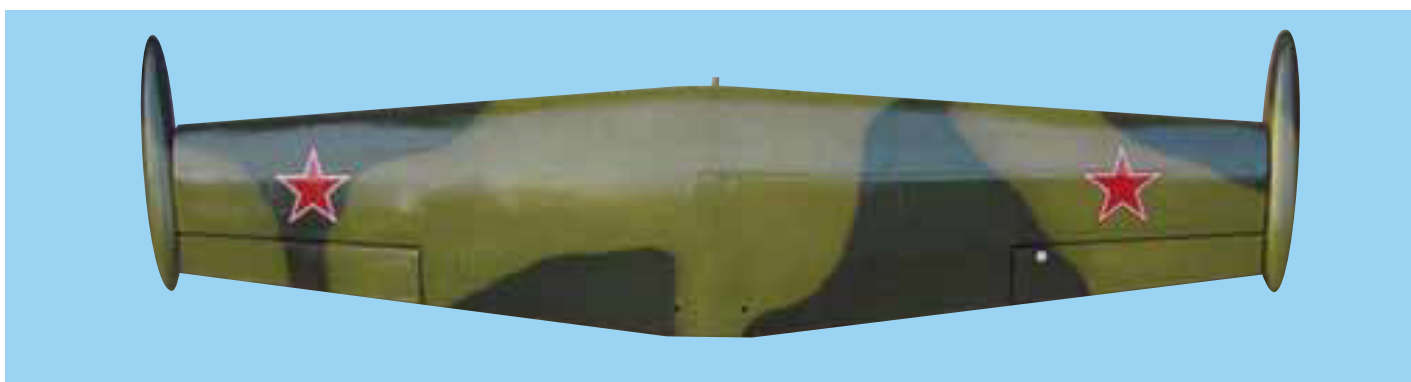
INSTALLING THE DUMMY TANK TIP TO THE WING



20A - Locate the slot in the wing tip



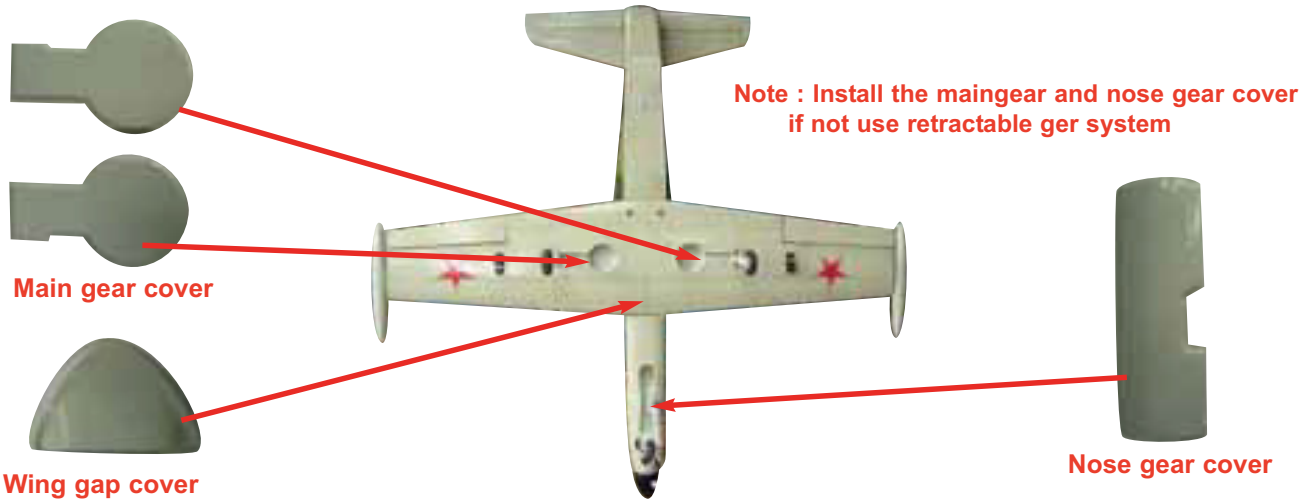
20B - Dummy tank (supplied)



20C - Dummy tank tip mount to the wing

STAGE 21

INSTALLING THE PLASTIC LANDING GEAR AND WING GAP COVER



STAGE 22

FINAL RC SET-UP

Before starting the final set-up of the model, switch on the radio and ensure that all trims are in their neutral positions. Check that the ailerons, elevator and rudder are centered. If any adjustments are needed, do these by uncoupling the relevant clevis and turning it clockwise to shorten the linkage or counter-clockwise to lengthen it. Only when each control surface has been centered mechanically in this way should you begin adjusting the surface movement (or throw)

Now confirm that the control surfaces are moving in the correct direction. Use the servo reversing switches on your transmitter to reverse the direction of a servo if necessary. The most popular transmitter mode (with the throttle on the left, with ailerons and elevator on the right) is shown here.

STAGE 23

INSTALLING THE RECEIVER BATTERY

Step 23.1 Consult your radio manual for instructions about hooking up your receiver battery, receiver and switch harness.

Step 23.2 Wrap the battery pack securely in foam suitable for RC equipment and wrap the foam insulated pack in a plastic bag or cling wrap. Position the battery pack under the fuel tank or nearby.

Step 23.3 Thread the battery pack connector back through from beneath the fuel tank to the radio compartment by passing the battery connector through an opening beside or beneath the fuel tank.

Step 23.4 Connect the battery connector to your radio system according to the radio manual.

STAGE 24

INSTALLING THE RECEIVER

Step 24.1 Consult your radio manual for instructions about hooking up your receiver.

Step 24.2 Plan where you are going to put the receiver with consideration for routing the antenna safely.

Step 24.3 Wrap the receiver securely in foam suitable for RC equipment and wrap the foam insulated receiver in a plastic bag or cling wrap.

Step 24.4 Generally in the absence of specific instructions from the radio manufacturer, it is recommended that the receiver should be placed where it is least likely to have impact during a crash. Keep the battery pack and other heavy loose items ahead of the receiver.

STAGE 25

CONFIRM RADIO OPERATION

Step 25.1 Consult your radio manual for instructions about testing and operating your radio system.

Step 25.2 Pay particular attention to charging your radio system batteries and range testing the system before and

after each flight.

Step 25.3 Check that all controls are working correctly before and after each flight.

STAGE 26

BALANCING THE AIRCRAFT

Step 26.1 The CG for your VMAR model is located at 3-1/2" to 3-3/4" (90 -95 mm) back from the leading edge of the wing when the wing has been attached to the fuselage as per illustration 34A.

Step 26.2 For the initial flight, the CG should be located at 3 1/8" (80mm) back from the leading edge of the wing when the wing has been attached to the fuselage.

Step 26.3 The CG is measured with the engine, radio gear and all other components installed but WITH NO FUEL IN THE TANK.

Step 26.4 Set up the CG as it will be when you fly it BUT WITH NO FUEL IN THE TANK.

Step 26.5 It is very important to have the CG correct.

Flying your model with the CG too far back will likely lead to loss of control and a crash. If you discover that after you have assembled your model and installed your radio and engine that the CG of your model is incorrect you must bring the CG to the correct location by doing the following BEFORE FLYING :

- Move the battery pack fore or aft.
- Move other components fore or aft.
- Change engine to a lighter or heavier model.
- Add weight to the nose or tail. If adding weight to the nose, try to make it useful by going to a heavier duty engine or adding a spinner with a heavy metal backing plate. As a last resort, add stick on "dead" weight where appropriate.

STAGE 27

CONFIRM MECHANICAL INTEGRITY

CONTROL SURFACE THROW SPECIFICATIONS:

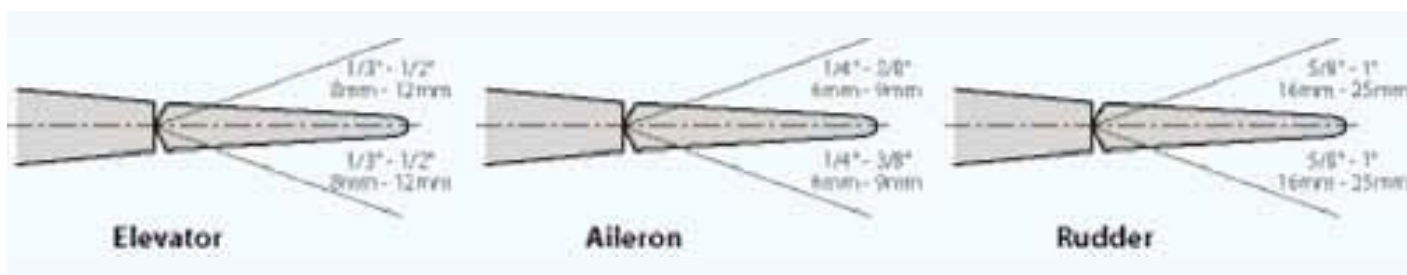
The throws are measured at the widest part of the control surface. Adjust the position of the pushrods at the control and/or servo horns to control the amount of throw. You may

also use ATV's if your radio has them but the mechanical linkages should still be set so that the ATV's are near 100% for best servo resolution.



Other VMAR peoduct Bulldog SK 61

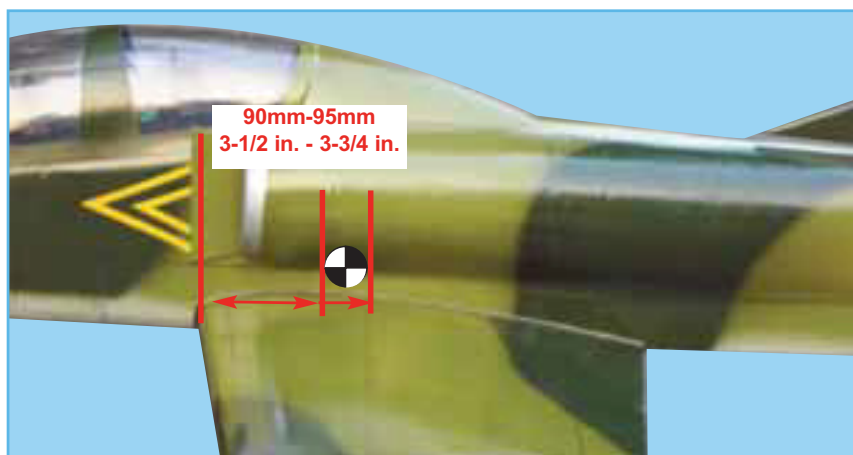
	Low rate	High rate
ELEVATOR	1/3 " (8mm) up 1/3 " (8mm) down	1/2" (12 mm) up 1/2" (12 mm) down
AILERON	1/4" (6 mm) up 1/4" (6 mm) down	3/8" (9 mm) up 3/8" (9 mm) down
RUDDER	5/8 " (16 mm) right 5/8 " (16 mm) left	1" (25 mm) right 1" (25 mm) left



Step 27.1 Once you have confirmed that the CG is correct, you should do a thorough review of the entire model before your first flight. Check everything twice! Every hook up, every coupling, everything! Do it twice!!

Step 27.2 Before your first flight, have an experienced flyer review your work. Do not fly your model until it has been checked out by a third party who knows how to fly and how to set up a model aircraft. Do not fly alone. Seek experienced help.

Step 27.3 Once you have completed your first flight, get in the habit of checking your model over before and after each flight! Don't fly if you find something that is not right!



33A - CG location