



FEI BAO JETS

Mirage 2000 Assembly Manual



Written by Pablo Fernandez
In collaboration with R/C Jet Models

DISCLAIMER:

THIS IS NOT A TOY. This is a high-performance miniature aircraft, capable of high speeds and damage to life, limb, and property. The manufacturer and its distributors cannot control how you assemble this model, what equipment you use to fit it out, or how you fly it, and can assume no liability whatsoever for any damages that may occur when you fly your aircraft. By assembling this model, you are agreeing to indemnify and hold blameless the manufacturer and/or his agents from any and all torts and liability associated with the use of this product. Please inspect all parts before beginning assembly. If any parts appear to be suspect, contact your dealer or the manufacturer for repair or replacement BEFORE you begin. Once you have assembled the aircraft, you are the pilot in command and assume any and all responsibility for the use of the model and any damages that might occur by flying or attempting to fly this aircraft.

R/C model jets require a high level of skill in both their assembly and their flying. If you do not feel confident in either your building or flying skills, PLEASE seek assistance from more experienced modelers. It is a wise idea, no matter what level of skills you possess, to have a second experienced modeler go over your installation after assembly. A second set of eyes may spot a problem you have missed. If you have not flown a model like this before, it is HIGHLY recommended that you get an experienced turbine pilot to do your maiden flight. Very often, the first few seconds of a maiden flight are critical until the aircraft is trimmed out, and having an experienced pilot at the controls can make the difference between a wrecked aircraft and one that enjoys many hundreds of flights. Be sure to select a suitable field for flying...take the time to find a large paved runway if at all possible, especially for test flights, until you feel comfortable getting the aircraft in and out of smaller grass fields.

BEFORE YOU BEGIN:

Keep this in mind as you proceed:

Look at EVERY assembly step you finish, and ask yourself:

"Is this going to crash my airplane?"

A chain is only as strong as its weakest link, and this is a high-performance aircraft that will be very intolerant of sloppy assembly techniques. Even the smallest component is important and can cause the loss of your airplane, so take the time to do things right. Or REdo them if they are wrong. Careful work will result in a long-lasting plane that gives you years of pleasure, one loose component could result in the complete loss of the aircraft and all the components inside it, and someone can even get hurt. So pause every once in a while when building it and double-check your workmanship.

A. Introduction:

You have chosen a model that represents the pinnacle of ARF technology. While there is not a lot of building to do, there is enough to keep you busy for a few evenings. Even if you have assembled maybe other ARF jets, we highly recommend following our

assembly sequence and procedures anyway.

Chances are it will save you a lot of time, prevent you from running down dead ends, and perhaps remind you of a few small things that might end up saving your aircraft.

We have tried to arrange a construction sequence that will allow you to keep moving forward, rather than standing around waiting for glue to dry before you can proceed to the next step.

Just because the model is almost completely built does not mean you can rush through the final assembly.

You need to employ fine craftsmanship every step of the way, turbine models are critical.

Keep this in mind with everything you do, every part you install...look at the work you just did, evaluate it critically, and ask yourself "is this going to potentially crash my airplane?" If there is any doubt about the work you have done, back up, and re-do it properly.

B. Adhesives:

The correct adhesive to use for all procedures is Loctite Hysol 9462. This is a very strong white epoxy that is thixotropic. "Thixotropic" means it does not run at all, but stays only where you put it. It is infinitely superior to regular epoxy, even slow-setting epoxy, for our purposes, because of this characteristic.

Regular epoxy will run downhill with gravity as it dries, taking it away from where it is supposed to be.

A good example is in the hinges...using regular epoxy, a good portion of the glue will migrate down away from the hinge into the inside of the wing as it dries, and you won't even know it is happening. Hysol stays where you put it.

The downside of Hysol is it takes overnight to dry properly, but we have tried to arrange things to keep you busy while waiting for glue to dry.

We also highly recommend that you only use a proper Hysol dispensing gun, and only the long-type mixing nozzles.

The short nozzles do not mix this glue enough, and only a thin nozzle and gun will let you fill the hinge and control horn holes properly with glue, you can't do it mixing your Hysol on a flat surface and trying to get the glue in the proper place by a brush or stick.

You can buy a complete Hysol setup with a gun, nozzles, and two cartridges of glue from your dealer for approximately \$60.

Consider it a great investment, the glue is the best you will use. One cartridge is plenty to assemble your Velox.

C. WORKING WITH PNEUMATIC SYSTEMS:

The Velox uses pneumatic brakes and retracts. If you follow a few tips, you should have very reliable, leak-free operation. Neatness counts.

All airlines should be secured to the airframe to keep them from flopping around or getting kinked. Use tie wraps for this.

The other very important thing is to cut off the end of each airline dead square before installing it on the nipple.

This is VITAL. You can either purchase a professional tubing cutter from your dealer (they are approximately \$10), or you can make up a little jig to hold the airline and keep a sharp,

new razor blade perfectly upright as you cut.

Either one works, just ensure that all ends of all airlines are cut off dead square. Make sure all airlines are pushed ALL THE WAY onto their nipples.

They should not need to be secured otherwise, but you can add fine wire safety wraps if you like. Make sure all left and right matching airlines are the same length, particularly the brake lines, or you will get uneven retraction or braking action.

It's worth taking the time to get everything pneumatic right the first time, as having your landing gear fail to retract is not THAT bad, but having it fail to deploy can really ruin you day and the paint on the bottom of your model.

RUDDER INSTALLATION

1. Mount the brass cup piece on the servo arm and tighten the nut, servo arm should be lined up with the servo lengthwise.

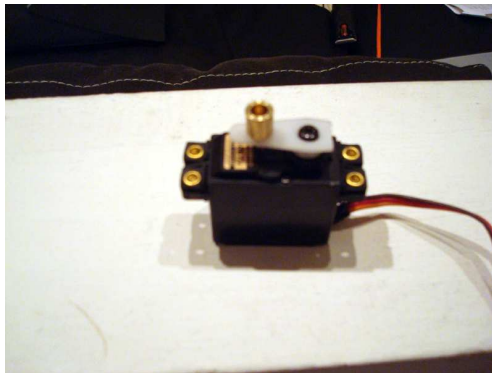


Figure 1

2. Now mount the servo inside the fuse on the servo wood mount. Make sure the servo arm is pointing towards the back of the plane.



Figure 2

3. Now mount the vertical fin and make sure the rudder rod slides into the brass cup on the servo arm. Now tighten the front pin bolt on the vertical Fin and also, bolt on the side of the fuse...

WING SERVO INSTALLATION

4. Install servo hold brackets as shown and centralize your servos.



Figure 3

5. Remove servo covers and mark the front of the covers by the inside so you will know how to orient it for reassembling.



Figure 4

6. Position servo on mounting tabs in the wings.
Trim servo covers for the servo arms and reinstall.
Connect linkage arms and ads just accordingly.
Repeat the same process for the other wing.



Figure 5

NOSE GEAR SERVO MOUNTING

7. Insert the retract servo from the bottom of the mounting plate.
Attach servo using bolts provided and loctite.
Attach clevises. Attach airlines to nose retract unit.



Figure 6

NOSE GEAR DOORS

8. Attach the airlines to the small gear doors on the nose unit.
These doors operate with the same system as the nose retract

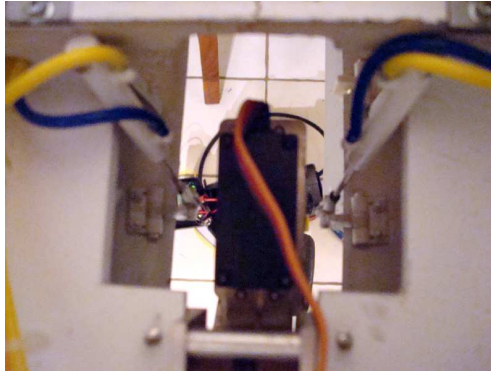


Figure 7

9. A restrictor must be added to the closing side airlines on the small gear doors.

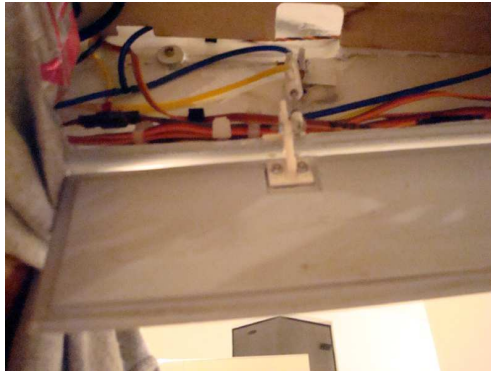


Figure 8

NOSE GEAR AND MAIN GEAR DOORS

10. Now the bigger nose gear doors and main gear doors operate on a separate system, which will be sequenced by your gear door sequencer.
(Sequence) The sequence goes as follows gears down doors closed
Doors open, gear up, doors close again.

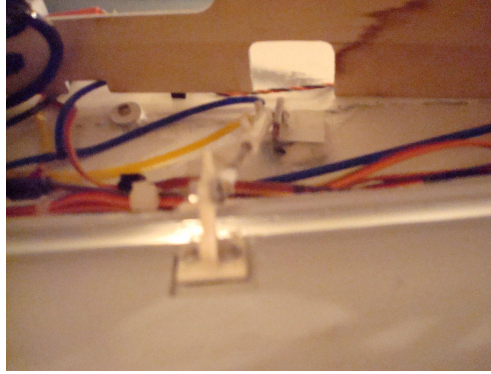


Figure 9



Figure 10

FUEL TANKS

11. Velcro tanks in position. Run the tygon tubes from the clunk side of the main tanks to the vent side of the header tank. Run the vent lines of the main tanks to a t- fitting a out the bottom of the plane. Now from the clunk side of the header tank to your UAT.



Figure 11

JOINING NOSE SECTION

12. Join the nose section to the fuselage and tighten the four bolt supplied. Also tighten the two bolts on the side of the intakes.

TURBINE INSTALLATION

13. Attach pipe with wood screws to the bypass (mount small pieces of plywood inside bypass)



Figure 12

14. Slide the tail pipe into the back of the plane.



Figure 13

15. Now install tail cone and tighten with the four bolts supplied.

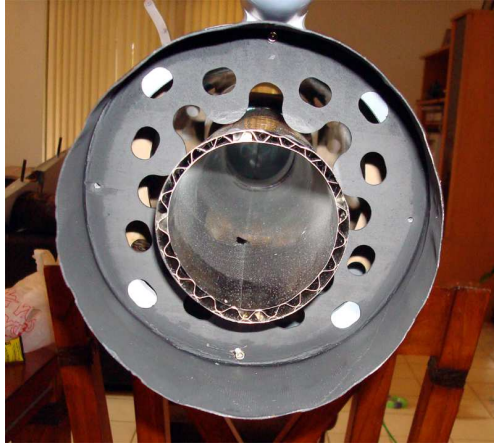


Figure 14

16. Locate the intake extensions.



Figure 15

17. Slide the bypass and pipe back and install intake extension (you must intake extension to proper size about 2 ½ inches before installation).



Figure 16

18. Now slide the bypass forward and screw it down to turbine wood mounts.

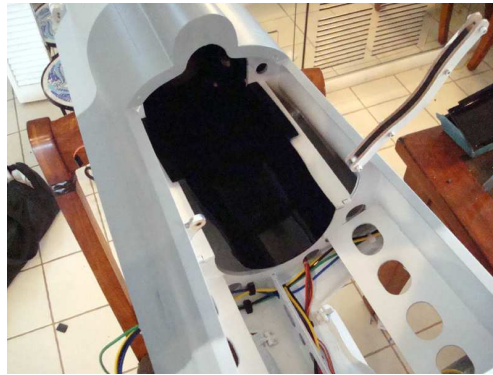


Figure 17

19. Install turbine.



Figure 18

20. Run Velcro straps around bypass to hold top half.

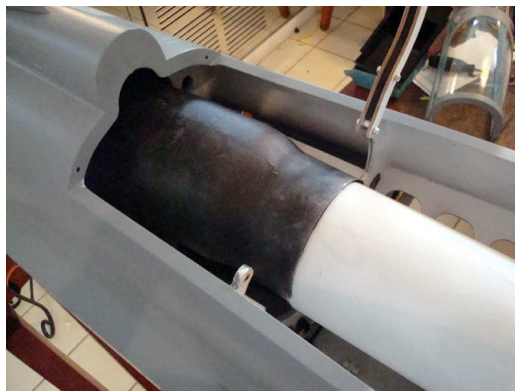


Figure 19

COMPONENTS BOARD

21. A suggested layout is shown in photo.

Congratulations, you have completed construction on your Velox. See the Pilots Notes for balance and control throws.



31. Technical data:

32. Weight with the super bee and two 1800max RC NiCads and full UAT is 18.5 Lbs.

33. CG is measured from the leading edge at the wing root measure 17 inches back

34. Control Throws

These are good place to start. Feel free to ad more trow for more aerobatic capability after the first flight.

**Aileron:
1 1/8" up and down
Elevator:
2" up and down
Rudders:
1" right and left
Flaps:
35 mm down**

1/8" UP ELEVATOR IS THE NEUTRAL POSITION

Some things to be aware of...

You may want an up-elevator mix with flap application, as the nose pitches down. You may also want some additional up-elevator throw available with full flaps, as you may

not have enough elevator to flare with full flaps. A "landing" mix will reduce the pilot workload. These settings, flap-to-elevator, will change if you move the CG back. You can also increase the rudder throw, but be sure the rudders do not contact the elevator at full throw.

Credits:

Written by Pablo Fernandez
Test Pilot: Pablo Fernandez
Photos first fly: rcjetmodels
Maiden at Markham Park - FL

Video at <http://youtube.com/watch?v=Wb42cEb6jZY>
And
<http://youtube.com/watch?v=pxFH3j05TYM>

