

ARF PLUS PRO F104G

1/5 Scale Almost-Ready-To-Fly RC Jet Assembly and operations manual

Specifications

Type : T.A.V.S ARF PRO
Scale : 1/5
Length : 131.4": (3338mm)
Span : 52.6": (1336mm)
Weight : 19—21 Kg (40-44Lbs)
Engine : 17—18 Kg
Radio : 12 Channel 8—12 servo's)



The F-104 G by Skymaster

Thank you very much for purchasing our Skymaster ARF PRO F-104. Please note that the photos in this instruction manual show certain views from the prototypes. Some modifications and upgrades might have taken place by the release of the model. We have tried to produce a very scale replica of this classic jet. Many scale options are included with your model including very scale speed brakes. This manual describes the assembling of “PRO” model. Opening canopy, speed brakes, landing gear and doors are factory installed. Before you start building and setting-up your aircraft, please make sure you have read this instruction manual, and understood it. If you have any questions, please don't hesitate to contact us. Below are the contact details:

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INTRODUCTION

Thank you for purchasing Skymaster arf pro F104! We have put a lot of effort and time into this model. We at Skymaster strive to be a market leader in the ARF—jet market. We were the first company to produce ARF—jets in the world and we would like to continue being amongst the best. Although we have made every effort that this model was fit for shipping, we would like you to inspect the contents and call your nearest dealer immediately if any defects or missing parts are spotted! This manual will allow you to duplicate the factory prototypes.

LIABILITY

You have acquired a kit, which can be assembled into a fully working R/C model when fitted out with suitable accessories, as described in the instruction manual with the kit. However, as manufacturers, we at Skymaster are not in a position to influence the way you build and operate your model, and we have no control over the methods you use to install, operate and maintain the radio control system components. For this reason we are obliged to deny all liability for loss, damage or costs which are incurred due to the incompetent or incorrect application and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by binding law, the obligation of the Skymaster company to pay compensation is excluded, regardless of the legal argument employed. This applies to personal injury, death, damage to buildings, loss of turnover and business, interruption of business or other direct and indirect consequent damages. In all circumstances our total liability is limited to the amount which you actually paid for this model.

BY OPERATING THIS MODEL YOU ASSUME FULL RESPONSIBILITY FOR YOUR ACTIONS.

It is important to understand that Skymaster, is unable to monitor whether you follow the instructions contained in this instruction manual regarding the construction, operation and maintenance of the aircraft, nor whether you install and use the radio control system correctly. For this reason we at Skymaster are unable to guarantee, or provide, a contractual agreement with any individual or company that the model you have made will function correctly and safely. You, as operator of the model, must rely upon your own expertise and judgment in acquiring and operating this model.

WARNING

This 'jet' aircraft is a high-end product and can create an enormous risk for both pilot and spectators, if not handled with care, and used according to the instructions. Make sure that you operate your jet according to the AMA rules, or those laws and regulations governing model flying in the country of use. The engine, landing gear, servos, linkages and control surfaces have to be attached properly. Please use only the recommended servos and accessories. Make sure that the 'Centre of Gravity' is located in the recommended place. Use the nose heavy end of the CG range for your first flights. A tail heavy plane can be an enormous danger for you and all spectators. Fix any weights, and heavy items like batteries, very securely into the plane. Make sure that the plane is secured properly when you start the engine. Have a helper hold your plane from the nose before you start the engine. Make sure that all spectators are far behind, or far in front, of the aircraft when running up the engine. Make sure that you range check your R/C system thoroughly before the 1st flight. It is absolutely necessary to range check your complete R/C installation first WITHOUT the engine running. Leave the transmitter antenna retracted, and check the distance you can walk before 'fail-safe' occurs. Then start the engine, run at about half throttle and repeat this range check. Make sure that there is no range reduction before 'fail-safe' occurs. If the range with engine running is less than with the engine off, please DON'T FLY at that time. Make sure that your wing spar tube is not damaged. Check that the anti-rotation dowels for the wings are not loose. Check that the wing, stab, fin and nose retaining bolts are tight. Please don't ignore our warnings, or those provided by other manufacturers. They refer to things and processes which, if ignored, could result in permanent damage or fatal injury. Secure the plane before starting engine.



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ARF Paint

The color finish on your Skymaster F104 arf pro model was applied out of the mould. We have used only the highest standard automotive paints to finish your model.

Should you damage the finish, Skymaster stock the color paint and hardener required for the repair. A good automotive spray painter should also be able to mix and supply the correct samples for repair.

If you have no experience in the use of these paints, it will be best to seek assistance.

Do not leave your model unprotected in the sun! always cover your model or park it in the shade. Extreme temperatures will damage the paint!

Finishing Your All White F104 ARF PRO

It is always best to fully assemble the model before painting. By doing so no damage or glue prints will ruin the paint.

The all white model will have some release agent on the surfaces.

Use #1000 wet and dry paper to sand the entire model. Mould lines can be sanded and filled using normal automotive fillers.

Please be extra careful when sanding near the hinge line! The hinges can easily be damaged. When masking and painting please make sure the control surfaces are not bend past 90—180 degrees extensively. This will cause the hinges to crack and may cause flutter.

The rudder and clear canopy are not installed. It is best to install these components after painting was done.



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HANDLING & TRANSPORTING

Composite models are very light but strong. These characteristics do have a down side! It is brittle.

Take care when handling your model. DO NOT ATTEMPT TO PICK UP AN FULLY FUELED MODEL BY THE LEADING EDGE BY YOURSELF! The leading edges will crack and delaminate. Full size jets have specially marked access points for the hooks of cranes!

Inspect your model before and after a rough landing. Make sure all parts are safe and sound.

Inspect model before and after transport. A sudden stop can easily cause an unnoticed dent!

The wings and tails are very flight worthy structures. They are light and extremely strong , however, they will dent if mishandled. Always support these structures on clean soft foam rubber.

LIVE HINGE

Skymaster utilize this system of hinging control surfaces because it is a very strong hinge system and is accomplished at the factory.

Occasionally, because of climatic changes, the bottom surfaces may “catch” or interfere with control travel surface actuation. Should this happen, use a fine abrasive strip to further bevel the L.E. of the control surface.

CAUTIONS: Do not apply any primer or paint to the underside of the main surface trailing edge.

Prior to each flight, check that the ailerons and elevators actuate properly, up and down.

Inspect the live hinges on a regular basis. If some cracks occur please repair asap with special hinge tape available from Skymaster or its dealers.



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Tools and Adhesives

Tools etc:

This is a fairly quick and easy plane to build, for a jet model, not requiring difficult techniques or special equipment, but even the building of Skymaster aircraft requires some suitable tools! You will probably have all these tools in your workshop anyway, but if not, they are available in all good hobby shops, or hardware stores like "Home Depot" or similar.

1. Sharp knife (X-Acto or similar)
2. Allen key set (**metric**) 2.5mm, 3mm & 5mm
3. Sharp scissors, curved type for canopy
4. Pliers (various types)
5. Wrenches (**metric**)
6. Slotted and Phillips screwdrivers (various sizes)
7. Drills of various sizes
8. Battery drill and Dremel tool (or similar) with cutting discs, sanding tools and mills
9. Sandpaper (various grits), and/or Permagrit sanding tools.
10. Carpet, bubble wrap or soft cloth to cover your work bench (most important !)
11. Car wax polish (clear)
12. Paper masking tape
13. Denaturized alcohol, Acetone, or similar (for cleaning)



Adhesives:

Not all types of glues are suited to working with composite parts. Here is a selection of what we normally use, and what we can truly recommend. Please don't use inferior quality glues - you will end up with an inferior quality plane, that is not so strong or safe. Jet models require good gluing techniques, due to the higher flying speeds, and hence higher loads on many of the joints. We highly recommend that you use a slow cured epoxy for gluing highly stressed joints, like the hinges and control horns, into position and the most commonly used is 'Aeropoxy' (Bob Violett Models, USA). The self-mixing nozzles make it easy to apply. It takes about 1 - 2 hours to start to harden so it also gives plenty of time for accurate assembly. Finally it gives a superb bond on all fibreglass and wood surfaces.

1. CA glue 'Thin' and 'Thick' types. We recommend ZAP, as this is a very high quality.
2. ZAP-O or Plasti-ZAP, odourless (for gluing the clear canopy)
3. 30 minute epoxy (stressed joints must be glued with 30 min and NOT 5 min epoxy).
4. Aeropoxy/Loctite Hysol 3462 or equivalent (optional, but highly recommended)
5. Epoxy laminating resin (12 - 24 hr cure) with hardener.
6. Milled glass fibre, for adding to slow epoxy for stronger joints.
7. Micro-balloons, for adding to epoxy for lightweight filling.
8. Thread-locking compound (Loctite, or equivalent)

At Skymaster we try our best to offer you a high quality kit, with outstanding value-for money, and as complete as possible. However, if you feel that some additional or different hardware should be included, please feel free to let us know.



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HEALTH

Use a mask (available at auto paint stores) to protect from inhaling the glass or carbon fiber dust. Use this mask whenever you are sanding or cutting fiberglass or carbon fiber materials. Use a charcoal filter paint mask (available at auto paint supply stores) when spraying any primer or paint. Spray out of doors or in a properly vented spray booth. Use safety glasses any time rotary tools, such as Dremel cut-off disc or Perma-Grit cutters, are being used.

GENERAL ASSEMBLY TECHNIQUES

We recommend to wax the model before assembling. This will help protect the finish from an epoxy finger print. Wax will not help for CA glues!

Extra glue, extra paint, extra resin will add up to a heavy model. Plan before you glue! The glass cloth side of parts to glue, should be sanded with #80 grit paper for best glue adhesion.

Support the fuselage on foam pads.

Skymaster makes every attempt to insure that the parts fit. However, due to manufacturing tolerances, some parts may fit a little tight. Always trial fit parts and adjust if needed.

Only use high quality adhesives such as the ZAP products from Pacer Technology.

For extremely high stress areas we recommend "Aeropoxy." It is the strongest and best gripping adhesive we have found.

If fuel or grease are on the surface, first clean with acetone or thinners.

Clean off all excess glue—excess glue is excess weight.

Always check the outside skin of the model to look for any glue residue and remove it with Acetone before it cures. "Aeropoxy" is tough to remove once it has thoroughly cured.



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Radio equipment

Failure to use the recommended servos, output arms, extensions, and hardware may result in a loss of control!

Throughout this manual we make use of various types of servos and radio equipment! We have used JR equipment during the installation process. If you make use of another manufacturer, please use equipment with similar specifications!

The F104 will require extension leads! Please use high quality extension leads. Make use of ceramic non ferrite cores if leads exceeds 1 meter.

The trend nowadays is to use dual battery management systems and dual RX equipment. With the introduction of 2.4 GHz even quad RX systems are considered as normal for a jet model.

Always center and install the correct output arms while on the bench, once the servo is in the aircraft access to the servo arm screw is sometimes limited.

Do not save any money when buying radio equipment. The price of servo's are far from the price of replacing the entire model.

REMEMBER: The best equipment is only as good as the weakest link. Ask yourself if this servo or link or lead etc is worthy of my trust to protect my very large investment...

Accessories

1. 1 DS8911 servo's for the elevator.
2. 1 DS8911 for rudder.
3. 2 DS8911 servo's for ailerons
4. 2 DS8511 servo's for flaps
5. 2 DS 8911 for slats
6. 1 JR8511 steering servo.
7. 3 JR577servos for Landing Gear, Door and Brake valves or check next line.
8. 1 Airpower EV5U valve + 1 x EV2U valve for landing gear + doors + brakes
9. 1 EV2U valve for speed brake
10. 1 EV2U valve for opening canopy
11. Powerbox Royal with build in matchbox function.
12. Pneumatic support set for landing gear
13. Turbine motor, with thrust range between 17kg and 18kg, with accessories.
14. Fuel tubing, Hopper tank (or BVM UAT), festo fittings, fuel filters, fuel tube etc.
15. Cable ties in various lengths.

***Did you understand everything in this manual completely?
Then, and only then, let's start assembling your F-104! If not, please read it again
before you start the assembly.***

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Kit Contents



Photo A

F104 ARF PRO Contents:

- Picture A Fuselage front, middle & rear section including fin & nose cone & tail cone. Nose gear + Main gear + door s installed + speed brake installed
- Wings left and right & tip missiles
- Elevator
- Wing spars + ventral fins
- Canopy assembly + glass



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OPTIONAL PARTS



Photo 1

Scale tail cone feathers

3 x Air Tanks
1 x Retract Valve
2 x Filler & 2 x Pressure Gauges
1 x Electronic Brake Valve
5 x Air Tubing, 10 x Quick Disconnect
8 x T-pieces, 2 x 4 way



Photo 2



Photo 3

Fuel Tank 4.5L
Pushrod Set



Photo 4



Photo 5

Airpower Optional 5 in 1 Electronic Valve & Sequencer
Control Brake, Gear and Doors



Photo 6

Stainless Steel Tail Pipe
Cockpit



Photo 7



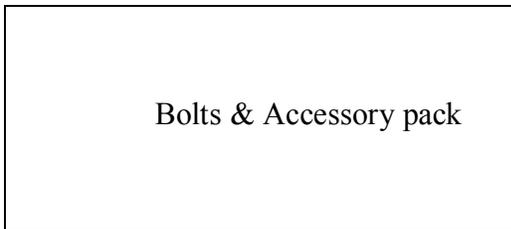
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Photo 8

Servo mounting hardware



Bolts & Accessory pack



Photo 9

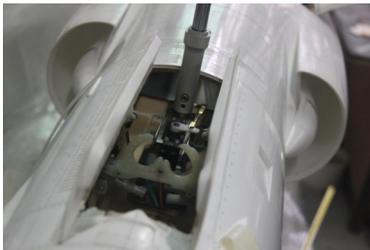


Photo 10

Scale nose doors

Carbon Bypass



Photo 11



Photo 12

L/G hydraulic set



Photo 13

Tygon Tubing

Tank Hardware



Photo 14

Skymaster
ARF PLUS PRO

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CONTROL LINKAGES



Photo 15

Ailerons : 100mm

Elevator : 345mm

Slat : 55mm

Flaps : 70mm

Rudder : 180mm

WINGS

NOTE: Make sure to have some sort of protective foam on the work bench. This will protect the paint surface from unwanted dents. Assemble both wings simultaneously. Mark ✓ each step.

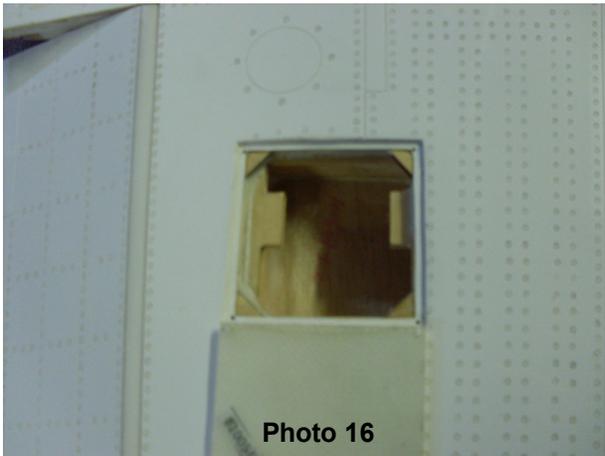


Photo 16

- Remove and mark servo covers and inspect plywood. Use dremel to clean out some glue and ply to make sure servos will fit well.

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- *NOTE: The prototype model was flown with internal linkages. The installation in this manual shows internal linkages for ailerons. You can also change it to outside linkages.*

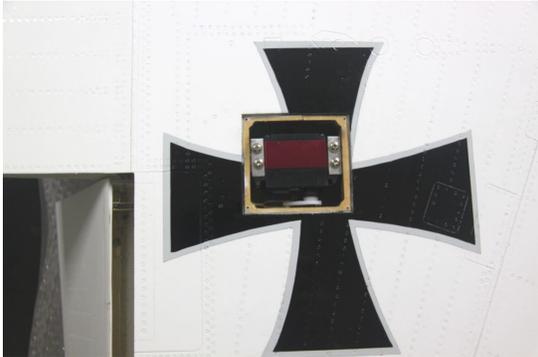


Photo 17



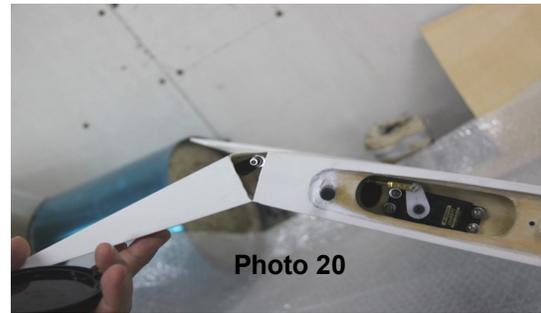
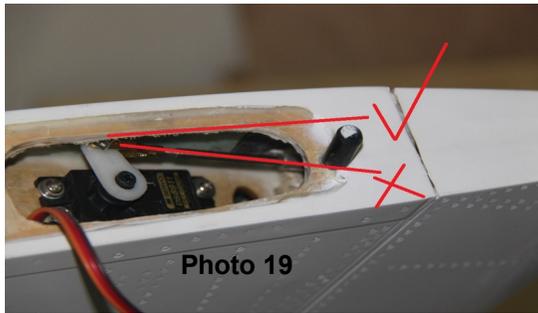
Photo 18

- Locate all items needed to complete wings. Fit 2 L-shape servo brackets to 2 x JR DS8911 aileron servos.
- Aileron servo must be mounted with horns facing top surface. The horn must be furthest away from control surface and furthest away for root.
- Secure servo horns and centre servo's with TX.
- Secure extension wire. Use safety clips on joint.
- Secure servo's to wing. Use 4 servo screws.
- Draw a line perpendicular to hinge line. Mark location of aileron horn. Mill slot in root of aileron. Take care not to damage hinge tape. Use 30 minute epoxy to glue control horns.
Note : Make sure horn is supported by balsa block inside the aileron root. If no balsa, cut root of aileron and insert balsa before you glue the horn to aileron.
- After epoxy cured, insert pushrods and secure safety clips.
- Check operation of aileron.
- Mill slot in servo cover and secure with 4 x 1mm set screws.
- Repeat for other wing.

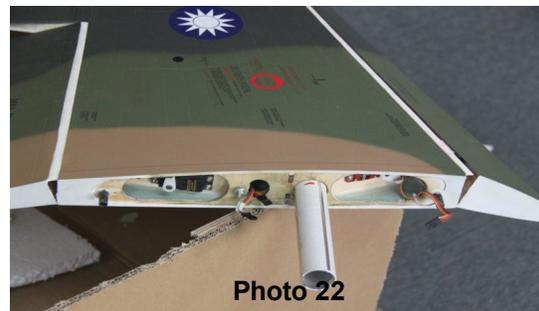


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- Fit servo horn to 8911 flap servo. Centre servo and do setup for travel with TX.
- Secure the servo to root flap rib. Use 4 screws. Mill slot in trailing edge of wing. This slot for pushrod.
- Mark location of flap horn on the LE of flap. Mill slot for flap horn. Using 30 minute epoxy—glue horn to LE of flap. **Note : Make sure horn is supported by balsa block inside the flap root. If no balsa, cut root of flap and insert balsa before you glue the horn to flap. Always use ball links sandwiched by 2 horns.**
- Make up flap pushrod. Make up 2. Fit pushrod to servo horn and secure safety clip. Note: See Pic 19. Angle always 90 degree!
- Slide pushrod through hole in trailing edge and insert safety clips.



- Check that flap operate correctly and freely. Repeat for other wing.
- Fit the servo horns to slat servos (8911). Follow the same procedure as flaps.
- **Later models have new improved hinges and slat bulkhead link support. If your model is not fitted, please contact factory.**
- *Make sure slat travel do not open gap between wing and slat. Gap must always be close.*
- Trial fit wings to fuselage and drill holes for servo wires.
- Secure wing with 2 bolts on each side.

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STABILIZER (T-TAIL)

NOTE: Make sure to have some sort of protective foam on the work bench. This will protect the paint surface from unwanted dents. We suggest fit the stabilizer before joining the fuselage. This will require less space. Mark ✓ each step.



Photo 23

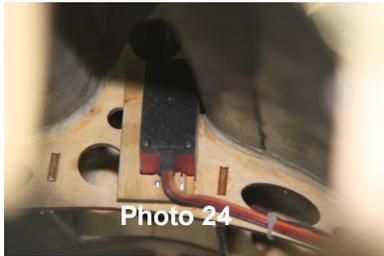


Photo 24

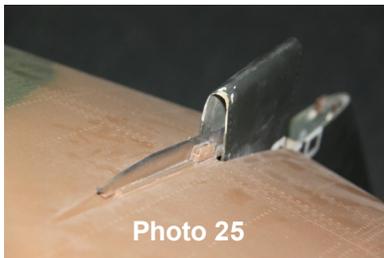


Photo 25

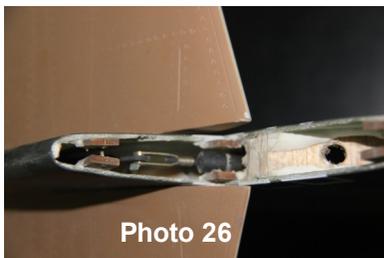


Photo 26



Photo 27

- Make up elevator pushrod.
- Secure JR8911 servo to elevator mount with 4 screws.
- Fit servo horn and centre servo using radio.
- Fit the pushrod to horn. Secure with safety clip. Impossible to adjust servo once tailpipe is fitted.
- Remove the cover from the bottom of stab.
- Locate the bolts to fit stab to belcrank.
- Secure the stab to fin. Replace the covers.
- Fit the top op elevator pushrod to elevator belcrank.
- Secure safety clips.
- Check operation of elevator servo and elevator.
- If happy—fit the tip cover.
- Run servo wires away from tailpipe.

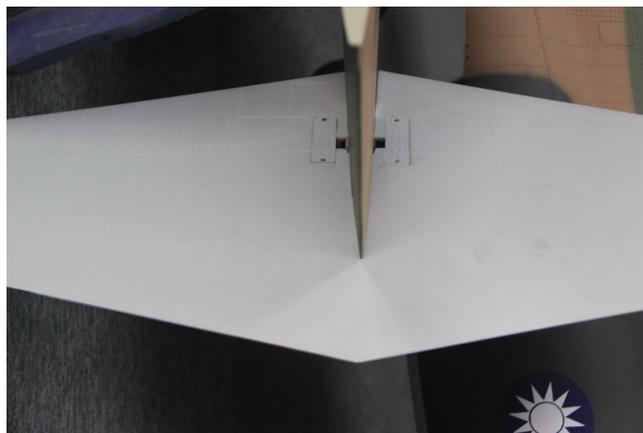


Photo 28



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RUDDER

NOTE: Make sure to have some sort of protective foam on the work bench. This will protect the paint surface from unwanted dents. Mark ✓ each step.

- Locate all parts needed for this section.
- Make up rudder pushrods (2).
- Fit wire belcrank in position. Fit belcrank over wire and mark location of set screws. NB. Note the position of belcrank on wire.
- Cut flat sections into wire and secure belcrank to wire with loctide.
- Fit servo to servo plate with 4 set screws.
- Fit pushrods to servo horn and belcrank. Use safety clips.
- Make sure servo horn and belcrank form 90 degree angle.
- Trial fit rudder. Check left and right deflection. If not enough deflection—trim fin post.
- When correct—glue the pin hinges to rudder and fin post.
- Fit servo cover.



Photo 29



Photo 30

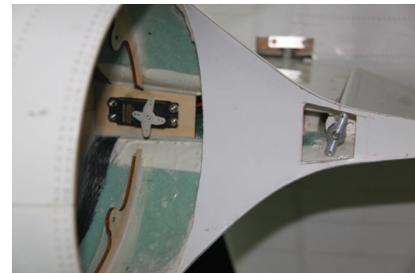


Photo 31

NOTE: To service rudder servo it will be necessary to remove tail pipe and split fuselage. Make sure all work fine before proceeding.

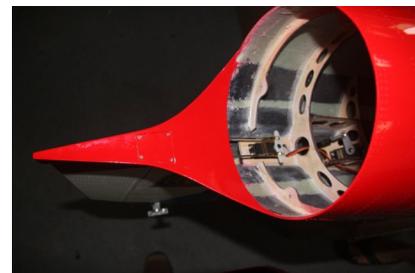


Photo 32



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FUSELAGE REAR & FRONT

Make sure you have a good stand for fuselage. You will need to assemble the rest of the F104 on this stand. The f104 rear section is design for easy removal during transport.

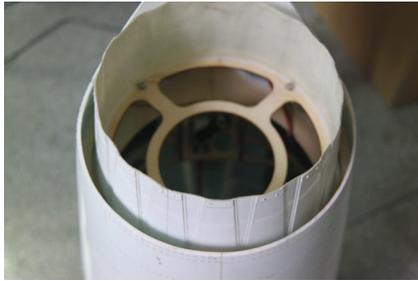


Photo 33

- Before joining the fuselage it is necessary to tidy up the servo wires. Make sure wires are secure and will not touch the tailpipe.
- Slide tailpipe into rear section. Fit L-brackets. Drill holes in formers and fasten L-brackets to formers.

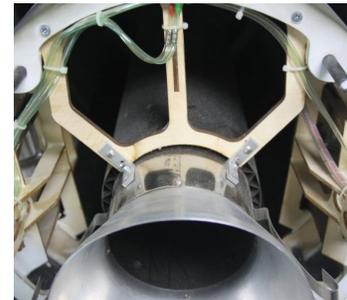


Photo 34

- Align fuselage and secure with 4 x M5 clamps. Check fit all around seam for sound joined.
- Route 2 servo wires along inner skin of rear fuselage.
- Install servo male and female plugs for 2 servo wires.
- For easy removal of rear section I recommend that the 2 wires are joint via a male female plug.



Photo 35

- Run speed brake air tubing along fuselage.
- Fit quick connector where the fuselage splits.
- Install JR DS8511 steering servo. Bolt with 4 x M3 bolts and lock nuts.
- Centre servo and install pushrod.
- Check operation of gear doors.



Photo 36



Photo 37



Photo 38



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FUSELAGE CENTRE

- Fit the ventral fin centre bottom of fuselage.
- Some models have 2 ventral fins before LG.
- Check operation of gear and doors. Fit loctite and check all bolts and screws.
- Run air lines and servo wires through fuselage.
- Secure pipe in position and glue end of pipe with silicon glue to former.
- Fit nose section to centre section with 4 bolts



Photo 39



Photo 40

FUEL CELLS

NOTE: Bad plumbing lead to flame outs. This will destroy your model. Please take your time and do a good job.

- Rinse fuel tank and check for leaks.
- Make up fuel line fittings. Make sure clunk moves freely and reaches all corners of inside of tank.
- Fit to tank. Mark pipes for “inlet” and “outlet”.
- Secure tank in position between inlet ducts.

- Plumb tank using diagram on next page.
- Fill tank and check for leaks.
- Drain tank with turbine fuel pump and check no air Bubbles in system until last drop is drained. A good plumbing will secure good turbine operation.

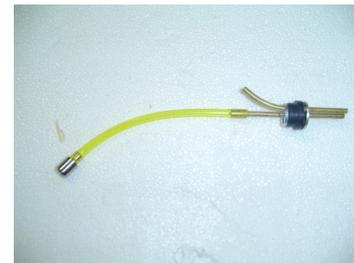


Photo 41



Photo 42



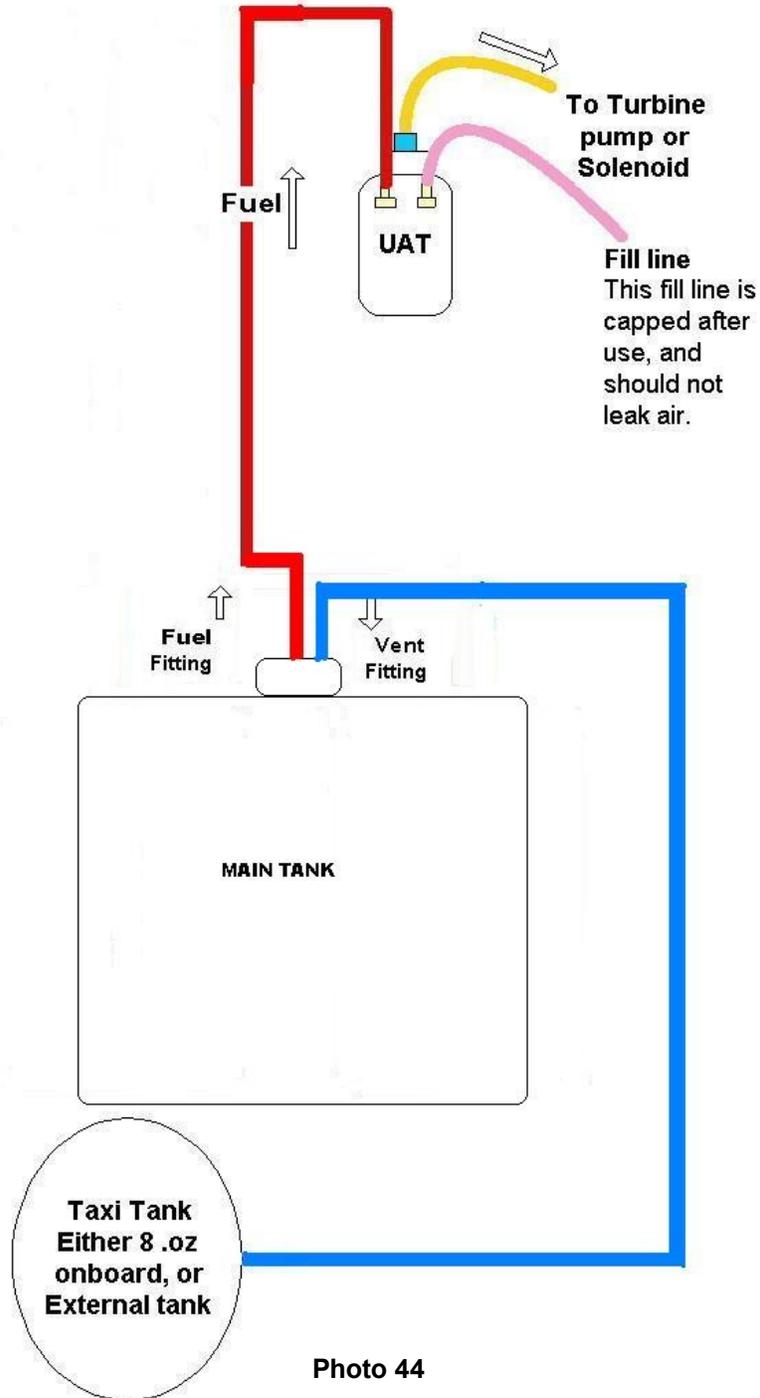
Photo 43



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FUEL CELL DIAGRAM



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AIR SYSTEM There are 2 options available for the air system: Mechanical or Electronic. For mechanical you will need 4 x 2 way and 1 x 1way valve with 5 servos and sequencer. For electronic you will need 1 x EV5U and 2 x EV2U. The f104 combines air and hydraulic fluid to operate the landing gear. All work done at factory.

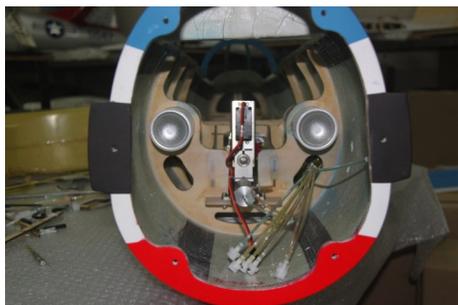


Photo 45



Photo 46



Photo 47

- Glue the air tanks in correct location with silicon
- Use quick connectors on fuselage joints to help with break up of model.
- Fit the 3 filler valves and 3 pressure gauges onto plywood tray.

- Plumb the landing gear, door and brake system by using color air tubing. T all same color tubing together until a single pipe emerge. Fit electronic EV5U valve underneath cockpit
- Route all 5 pipes to EV5U.
- Plumb speed brake.
- Secure 2 x 2way electronic valves adjacent to EV5U. This will be for speed brake.

- The air system will consist of :

Air up, Air down retracts (2)
Air up, Air down doors (2)
Air out brakes (1)
Air up, Air down speed brake (2)
Air in (2)

Total of 9 pipes

- Air leaks can damage your model! Please do a thorough check for air leaks. Make sure the system can hold pressure for at least an hour in the up and down position.
- Do not rush this installation.



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- For scale functions such as speed brake and sliding canopy you will require additional 2 way electronic valves.



Photo 48 2 way

AIR DIAGRAM

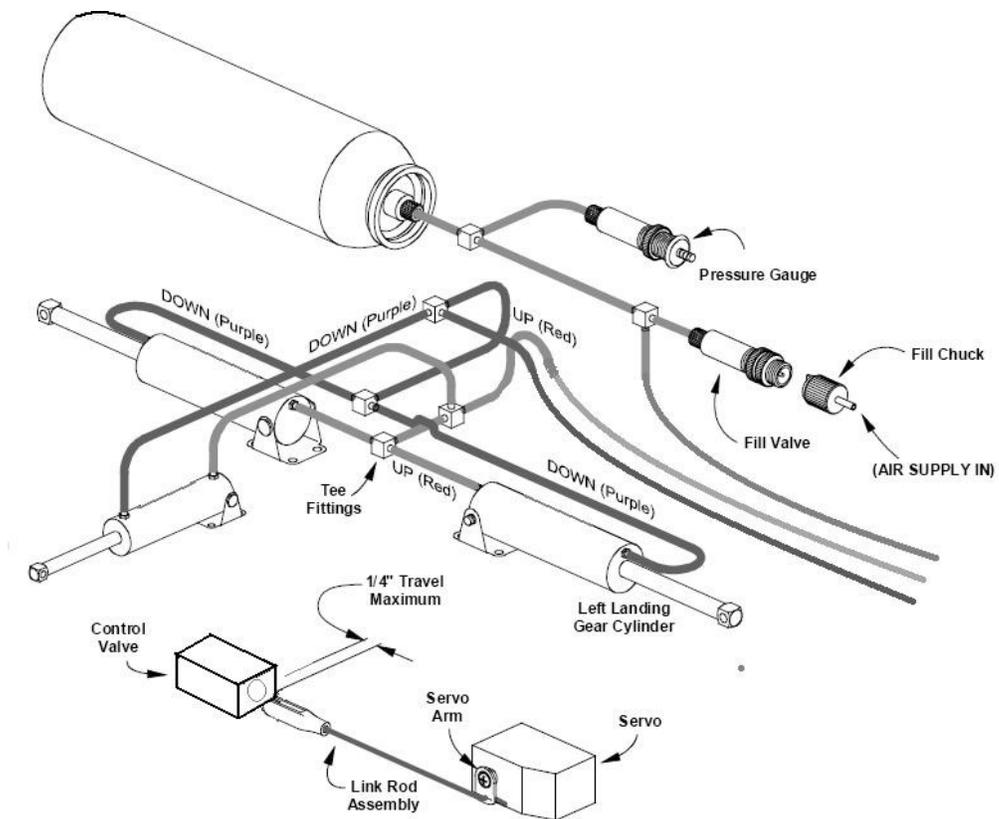


Photo 49 Diagram for retracts



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TURBINE INSTALLATION

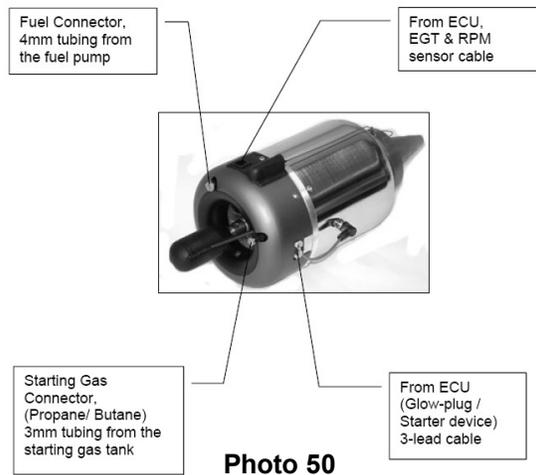


Photo 50

- Please follow the instructions supplied with your turbine.
- Secure turbine to turbine rail via hatch. Leave a gap of 25mm between NGV and tailpipe.
- Run all turbine wires and power cables on opposite side of servo wires.
- Always secure all wires in harness. I would suggest you install a FOD. This will save you money in the long run.

Electrical connection pictures

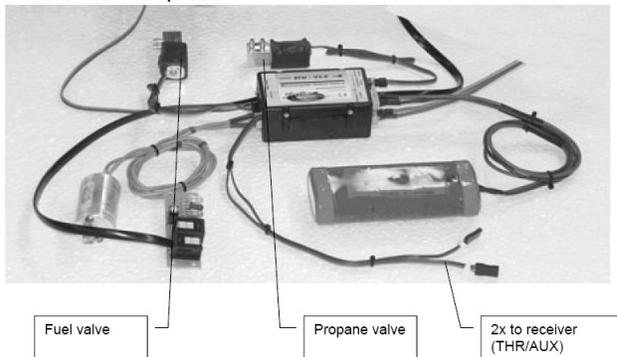


Photo 51

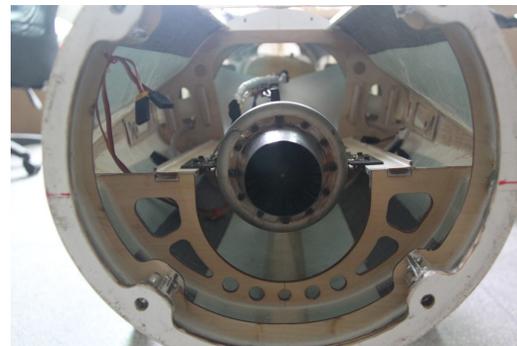


Photo 52

- Install fuel pump close to UAT. We recommend to make use of a mechanical shut off valve as well.
- Secure all Festo pipes with cable ties. Make sure fuel filter and gas canister are mounted vertical.
- Install NiCad or Li Po battery in nose. I always put a fuse holder inline with power cable.
- Trial fit bypass top cover. Cut slots and secure with hook & loop tape.



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COCKPIT AND CANOPY (after painting)



Photo 53



Photo 54

- Cut cockpit to fit fuselage.
- Check that nose gear clear cockpit when retracted.
- Secure rear of cockpit with 2 screws.
- Check that canopy clear the cockpit. Trim if needed.
- After painting—fit glass.
- Install pilot.



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EQUIPMENT INSTALLATION INTO F104

□ Equipment installation is a personal venture. There is one golden rule: Do it as neat and logical as possible! This will make fault finding and service of components easier. The F104 basically consist of 7 circuits!

1. Servo wires
2. Power cables
3. Data cables
4. Pneumatic pipes
5. Air pipes
6. Fuel pipes
7. RX cable / Satellite Receivers

Please try and separate these circuits as far as possible. It is advisable not to run RX cables near any kind of electrical fields. Make all switches and filler valves and charging sockets easy accessible

- The F104 will come out tail heavy if you do not plan installation. It is very important to install all equipment as far forward as possible.
- I have installed 2 x RX + 2 X ECU batteries in nose.
- I have installed a UAT before CG. This will always be full of fuel and will help with the final adjustment of CG.
- The accessory tray is in nose under the cone. The cone can easily be removed to gain access to equipment. Install all serviceable equipment on this tray.



Photo 55

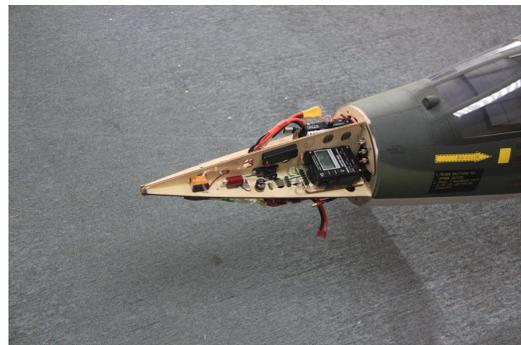


Photo 56



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BEFORE YOU FLY

It is assumed that the builder of this kit has acquired the basic skills and knowledge necessary to make a safe and functional radio control installation into a model. Therefore, these notes are intended only to assist that experience.

When inserting the main spar into wing, make sure it only enters the amount required. . It must be symmetrical to both sides.

Travel adjust measured at root. Use Expo to suite your style.

1. Elevator	45-50mm	2. Rudder	25mm
3. Aileron	25mm	4. Flaps take off	45mm
5. Flaps landing	75mm		
6. Slats Take off	6-7mm	7. Slats landing	10mm

NOTE : Make sure flaps and slats travel together & should be deployed in landing circuit only below 90mph. **Do not deploy at high speed!!!**

Do not change location of CG unless you are experience and have some feel of model before! If you do not like the “feel” of model you can change the angle of the trust pipe. Measure 90mm from fuselage to pipe skin at aft fuselage split location. Move CG to 120mm back LE. Raise the turbine by 40mm on the rail together thrust line change. (The thrust line modification and CG change is together and not separate) Please enquire if unsure. (see last page)

- Weight Dry weight will be between 40 and 44 lbs depending equipment.
- PSI 100—120 psi for pneumatic system
- Power Make use of battery management system. Double up on batteries and make sure all wired can carry current needed to operate.
- TX RX Do a complete range check before flight. Do this with turbine running. Follow manufacturers instructions.
- Speed Set the maximum speed to 160mph! The prototype were tested with Jetcat P-180 turbines. More powerful turbines require extra care and extra reinforcing.
- Timer A timer can save your model.
- CG Picture show normal thrust line CG
This setup is for nose heavy.



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Take-Off

Do some taxi tests before your flight! Make sure you are familiar with all settings and make sure the model track straight on the ground without rudder input.

Choose a fine day for the maiden flight. Select take off flap or flight mode 1 and open throttle. Gently pull back on stick 50m down the runway. Raise the flaps and gear at safe altitude. If the ailerons feel sluggish—select higher rate. Land and adjust to fit your need. You will require plenty of elevator for take—off.

Slow Flight

Most of the first flight should be utilized to get familiar with the slow speed flight characteristics. Select the flaps to the takeoff position; there should be no pitch change. Extend the gear and select full landing flaps; adjust the power to maintain level flight and a speed of about 80—90mph. Climb to a safe altitude and slow the model to the edge of a stall to know where that edge is.

We recommend to fit gyros on ailerons to help with overall stability of flight.

Landing

Fly a complete circuit before landing. Approach from the downwind side and lower the LG. Fly a complete circuit getting use to the power required. On the next circuit lower the flaps. It is very important to get the nose up for landing. Use elevator to get nose up and throttle to change altitude. You will need to work out a glide slope to fit your runway. Just before touch down—pull more elevator to flare model. If you do not get the nose up—it will be difficult to stop in time. Do not pull too much elevator in glide slope as you may run out of elevator. There is fine line between just right and too much. Do not use speed brakes for landing on maiden. When you are happy and more experienced the speed brakes will slow model down faster. Let the model roll out and apply brakes.

Taxi back and do necessary adjustments to customize F104 for your need!

We at Skymaster wish you many happy flights with your F104 Starfighter! Add some landing lights and your F104 will be just like real thing.

Anton Lin and Skymaster Team!



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OPTIONAL CG MODIFICATION

The original setup has a thrust line of between 5-7 degrees. To change this thrust line to 2 degrees you need to do following:

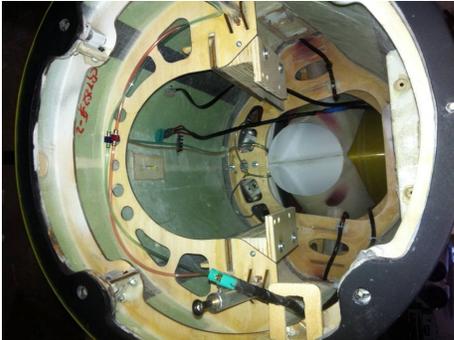


Photo 57



Photo 58

- Raise the turbine by 40mm
- Raise the top of pipe to be +/- 90mm from top of skin
- Adjust nozzle for downward angle
- Adjust CG to 120mm from wing leading edge back. (just behind slat)



Photo 59

