

# PilotRC SKYWOLF 88"

## **USER MANUAL**

WINGSPAN:2240mm LENGTH:1930mm



#### Introduction

Thank you for purchasing our Skywolf 88 plane. We strive to achieve a good quality quick build ARF aircraft .

It requires the least amount of assembly of any ARF kit to obtain the maximum performance.

Both the design and manufacturing have been undertaken to the highest standards, using best quality hardware, covering, wood & glue during factory construction stage.

By optimal weight and balance along with reliable construction, you will find this plane is very good for flying.

We hope that every effort and service we offer will, in turn, give you confidence using Pilot Models.

Have a wonderful time flying your aircraft in a suitable safe space!

#### Warrant

• All Pilot-RC products are guaranteed against defects for 30 days of receiving your airplane. This warranty is limited to construction or production defects in both material and workmanship, it does not cover any component parts damaged through use or modification.

• The manufacture cannot supervise the assembly, operation or maintenance, and is not responsible for radio malfunctions. Please ensure your radio system is in good condition. We are not responsible for any accident or damage while using this product. It is impossible to determine for certain whether crash damage was the result of improper installation of our products, a radio system failure, or pilot error. Model airplane owners use our products at their own risk.

• Pilot-RC will not be liable for any costs, unless agreed and proved beyond doubt the failure was due to faulty materials or fabrication. Any agreed cost will not exceed the cost of the airframe and not include engine, radio equipment or third party claims.

• Should you wish to return a product or receive replacement parts, all shipping cost must be paid by the customer.

#### Attention

#### • 1. Do not regard this plane as a toy!

- 2. To ensure safety, please read the instruction manual thoroughly before assembly.
- 3. Building and operating an RC Plane of this nature

requires previous experience and competence to an experienced level. This plane is not for a beginner!

• 4. If you are in doubt have an experienced pilot at hand. Diligent practicing and correct guidance is essential, accidents can cause bodily harm and property damage.

• 5. Seek assistance from an experienced person or airplane model clubs in assembly, operation and maintenance to ensure successful training.

• 6. Fly only in a registered RC model club airfield that is approved by your local Academy of Model Aeronautics (AMA).

Pilot-RC has the right to revise the plane, the instructions and the limited warranty without notice. If you have any problems and questions please contact Pilot –RC:
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#### Included Hardware:

Complete air frame with all basic accessories (such as carbon fibre undercarriage, tail-gear assembly and wing-tubes as well as fibreglass control horns and wheel pants) Pre-installed hinges and pre-mounted canopy Fuel tank and fuel tubing pre-prepared, fuel dot and breather valve Wheels, axels and wheel pants Pre-preared pull-pull wires and pushrods with ball links Matching carbon spinner

#### Required Hardware:

Motor: 30-60cc or equivalent electric Servos: 7 high torque plus throttle // Uses x1 per aileron, x1 per flap, x1 per elevator and x1 on rudder Also requires all the usual accessories such as transmitter, receiver, propeller, batteries, powerbox, extension leads and possibly other small accessories.

PilotRC Recommend Hardware:

Servos: Pilot-Rc PW27AH (27Kg – 0,119s at 8,4v) Servo arms: Pilot-Rc 1,6" Aluminium arms (included with Pilot-Rc servos)

#### Other Accessories Needed To Complete:

- Epoxy Adhesives
- Cyanocrylate adhesives
- X-Acto and Saw knives
- Sandpaper
- Thread lock
- Aircraft stand or support
- Drill, screw drivers, allen keys, wrench set, pliers, etc



Cut the covering of the slot for stabilizer.

Take out the elevator from the stabilizer.

Inset the stabilizer to the slot.

Measure both left and right side as the photo shows. Be sure both side are the same size.



Measure both left and right side as the photo shows. Be sure length Left = Right



Once the stab is centered, draw a line on both side of the stab as shown, both top and bottom of the stab.

Using a modeling knife, cut along the marked lines and remove the covering. Repeat on the bottom of the stabilizer.



Apply 30-minute epoxy to both the stab and fuselage sections and slide the stab into position.

Before the epoxy cures, Measure both left and right side as the photo shows. Be sure both side are the same size.



Measure both left and right side as the photo shows. Be sure length Left = Right

Before the epoxy cures, adjust the stab and wing to be parallel . This is very important.



Mix some "30-minute epoxy" and glue one side of the hinge to the elevator.

After the elevator glue cured. Apply 30-minute epoxy to the elevator to the stabilizer. Be sure the stabilizer glue cured on the fuselage before you do this.

#### Vertical Tail/ Rudder Assembly:



Cut and move the covering which need to glue to the fuselage.

Apply some "30-minute epoxy" to the fin slot on the fuselage.

Measure both left and right side as the photo shows. Be sure both side are the same size.

Before the epoxy cures, adjust the fin and stabilizer to be perprendicular . This is very important.

#### Servo Arm/Horn Assembly:

#### Servo Arm Installation





Turn on your transmitter and make sure servos are centered before putting on servo arms.

Locate and drill 2mm holes into nylon servo arm to attach the included fiberglass servo arms.

Mount the screws and nuts.

#### Servo Arm/Horn Assembly:



Slice covering over factory installed slots. Press control horn into position. Trace around the locking plate with a knife and remove the covering.

Scuff the horns with a piece of sand paper for good glue bond. Wipe off sanding dust prior to gluing.

Apply the 30 minute epoxy inside the pre-cut slot for horn and coat the horn with epoxy as shown

Slide the horn with locking plate into place. Wipe away excess epoxy with rubbing alcohol. Note: Some trimming of the horn might be required for the horn to fit flush.

#### Aileron Servo Installation



Cut out the cover for servo location carefully.

Lock the connector with the provided safety clip against vibration and loosened tension.

Tape the lead to pull-string tightly. In order to ensure the servo wire can be pulled out without hanging up inside wing.

Then put the extension lead through the root of wing.

#### Aileron Servo Installation



Install servo with mounting screws. Face the brand toward the trailing edge of the wing. Use 1mm bit to drill the mounting holes.

Install the servo arms facing toward the wing tip and adjust pushrod in proper length to keep the aileron panel on the neutral position.

Repeat all the step above for the other wing and flap.

The carbon tube and wing bolts use to be mounted in the final assembly

#### **Elevator Servo Installation:**



Lock the connector with the provided safety clip against vibration and loosened tension as shown.

Then put the extension lead through fuselage.

Install servos with mounting screws. Face the brand toward the rear of fuse. Use 1mm bit to drill the mounting holes.

#### Rudder horn Installation:









Install the servo arms facing toward the ground and adjust pushrod in proper length to keep the aileron panel on the neutral position as shown.

#### Servo Arm/Horn Assembly:



Trace around the locking plate with knife and cut off the cover below. Then the pre-cut slots appear.

Scuff the middle of horns with a piece of sand paper for good glue bond. Then clean up the surface.

Apply the 30 minutes epoxy inside the pre-cut slot, and coat the horn with epoxy.

Slid the horns into slots slightly, mount the locking plates in place. Wipe away excess glue with rubbing alcohol.

#### **Rudder Servo Arm Installation**



Turn on your transmitter and make sure servos are centered before installing the rudder servo arm.

Drill holes with a 2mm bit for hardware.

Mount the screws and nuts.

#### **Rudder Servo Installation**



The rudder cables and couplers have been installed.









Mount servo with mounting screws and face the brand toward the rudder. Drill holes with 1mm bit.

Tape the rudder panel to top of the vertical fin in the neutral position to make it straight.

Attach the pre-installed boll link to the rudder horn and not tighten the locking nut.

Attach the pre-installed boll link to the rudder horn and not tighten the locking nut.

#### **Rudder Servo Installation**





NOTICE: The coupler is best to thread half way into ball link for further tightening next.





Turn on your radio to keep the servo neutral. Mount the pre-installed boll link to the rudder arm without locking nut. Put two brass tube through the cable and thread through the coupler hole. Ensure the cables are straight.

Crimp them in place with crimping pliers. And Cut away excess cable.

#### **Rudder Servo Installation**



Thread the coupler in 2-4 mm. Ensure the same length of cables and tension



Shrink the heat shrinking tube on the brass tube.

Remove the ball links from rudder horn and install the servo arm ball links with bolts and nuts.

Turn off the radio now. Reinstall the ball link (Don't pull strongly to hurt the rudder or back to step 7 for readjustment )you can find a helper and do that at certain deflection with supporting the bottom of the rudder.





NOTE: The main landing mounting direction.

## Note: Some of pictures are not Sky Wolf's landing gear installation pictures, but they have the same installing ways as Sky Wolf's.



Install the landing gear with the bolts and locking nuts. Note: Don't over tighten and crack the carbon fiber.

Install the landing gear axles with lock nut ,but do not tighten

Lift the rear of fuse to line it up with ground.



Make the flat sides of the axle bolt vertical with ground . Then tighten the lock nut against the landing gear strut.

Install the collars and wheel in order with a drop of Blue Loctite on the collar set screw and ensure the wheel is free to rotate.

## **Pants installation**



Lift the rear of fuse and line the wheel pant up with the ground by slipping them over the axles and supporting them from the rear for the proper clearance.



Drill the holes for the mounting bolts and install the blind nuts.

Finish the wheel pants mounting with the bolts and use Blue Loctite on the threads.

## Tail wheel installation



Draw a center line with a pencil.

Mount self-tapping screws on the tail wheel mounting block with the bracket taped on place.

Drill hole 1mm bit and mount spring on the button of rudder with selftapping screws as shown. Cut away excess wire. Ensure spring have pulled tightly

#### **Engine Installation**

Note: Some of pictures are not Sky Wolf's installation pictures, but they have the same installing ways as Sky Wolf's.





The firewall has been mounted. Drill according pre-set laser holes for DLE-30. Otherwise measure your engine's mounting location.

Remember: Use bolt Loctite on all engine mounting screws.

#### **Engine Installation**



Install the engine throttle arm witn a little Blue Loctite. Measure and cut the extra wire .Then bend to a sharp of "z" as shown. Mount the throttle pushrod to engine.

Determine where the throttle servo mounting tray is going to be mounted on the engine box to get the straight and precise throttle linkage connection. Then make a mark and epoxy the tray in place .Finally secure with self-tapping screws.

Finish the servo installation with mounting screws.

#### **Ignition Module Installation**









Tape foam rubber on bottom of ignition and attach to safety cover surplied as shown.

Position the ignition outside the engine box to allow the spark plug leads to connect the engine without excess tension .Drill for Nylon tie. Lock the connectors with the provided safety clip against vibration and loosened tension as shown



Epoxy the hatch in place and secure with self-tapping screws.

#### Fuel Tank Installation



Fule tank and fuel dot have been installed. Just tighten the velcro ties.

#### Switch Installation

Note: Some of pictures are not Sky Wolf's installation pictures, but they have the same installing ways as Sky Wolf's.



NOTE: The switch mounting holes have been pre-cut for standard size. Otherwise fill it with the same size 1.7mm plywood and a larger one (both not included) as reinforce.

Cut off the cover with a sharp knife.

Mounting with screws and nuts supplied.

#### **Cowling Assembly**

Note: Some of pictures are not Sky Wolf's installation pictures, but they have the same installing ways as Sky Wolf's.



Make or use the supplied pattern of the exit air cooling. But do not cut off the cowing mounting holes position.

Use a fiber cutting tool to rough cut the cowling and finish with a round sander. Trial fit to make sure there is a minimum of 3/8" around the engine cooling.

Then cut out for the exhaust pipes.

#### **Cowling Assembly**



Ensue all the corner are rounded and not sharp 90 degrees against splitting under vibration. Trial fit till the cowl is right



Need an extension tool with a proper size ball driver and handle by cutting standard ball driver in half .Some small heat shrink tubing are attached to the ball driver to hold in place. You have to reattach the cowl in the future by this method.



Have two that mount from the rear of the firewall on the top of the cowl and two that mount from the front of the cowl opening.

Note: Maybe more exit air cooling will be needed to allow for depending on your engine's recommended running temperature. Always check your engine and Pilot-RC doesn't accept responsibility for any damage from improper engine cooling.

#### **Centre of Gravity**



The location of CG has been marked inside of this plane. Usually it's near the wing tube.

#### Flying Settings

Throttle:	Adjust idle –full				
Elevator:	<ul><li>40 Degrees on High rate</li><li>12 Degrees on Low rate</li></ul>				
Aileron:	30 Degrees on High rate 12 Degrees on Low rate				
Rudder:	45 Degrees on High rate 40 Degrees on Low rate				

■ After you have set the given control throws and have a few flights under your belt, you can change the throws as well as moving the CG back at 1/4" intervals to suit your requirements and skill level.

■ Learn to use exponential of about 40 percent on your elevator to make smooth landings and prevent over control on this highly aerobatic airplane. Use 70% exponential on High Rate !

## Centre of Gravity List of PilotRC

	CG(from the			CG(from	
Dlana	LE of the	Nata	Dlana	the LE of	Nata
Plane	root of the	Note	Platte	the root of	note
	wing)			the wing)	
YAK54-73	156mm		540-V3-67	96.5mm	
YAK54-87	183mm		540-V3-78	141mm	V1
YAK54-107	255mm		540-V3-78	133mm	V2
YAK54-121	266mm		540-V3-107	207mm	V1
YAK54-129	273mm		540-V3-107	172mm	V2
YAK54-148	314mm		540-V3-122	166mm	
YAK54-180	401mm				
			260-73	140mm	
YAKM55-73	165mm		260-87	170mm	
YAKM55-88	215mm		260-106	202mm	
YAKM55-107	265mm		260-122	248mm	
YAKM55-122	295mm				
			DECATHLON-107	129mm	
300-73	154mm		DECATHLON-122	146.5mm	
300-88	170mm		DECATHLON-150	182mm	
300-107	211mm		DECATHLON-180	217.5mm	
300-122	236mm				
			400-150	125mm	
330-60	101mm		400-128	157mm	
330-67	152mm				
330-73	154mm		Trainer-90	145mm	
330-78	162mm	V1	Sport-88	145mm	
330-78V2	152mm	V2	SKYWOLF-88	155mm	
330-88	170mm				
330-92	206mm	V1	DOLPHIN-71	224mm	V1
330-92V2	178mm	V2	DOLPHIN-71	204mm	V2
330-107	211mm		DOLPHIN-78	268mm	
330LX-107	211mm		DOLPHIN-86	268mm	
330-122	236mm		DOLPHIN-92	293.5mm	
342-73	145mm		G650-97	355mm	
342-87	173mm				
342-107	234mm		Predator-87	283mm	
342-122	269mm		Predator-70	223mm	
342-148	305mm		2.0m Viper	150-170mm	
540-73	106mm				
540-87	136mm				
540-107	141mm				
540-122	166mm				

#### **Flight Preparation**

Make sure you have the right model programmed into your transmitter

Check the direction of each surface not and also right before you take off .

Remember nothing wrong on the ground ever improves in the air

Check the air plane with the engine running and do a range check with

■ your body between you and the plane at least 150 feet.

■ Check your battery voltage after each flight, in case one servo is draining your battery

■ Recheck all screws ,horns and linkages for slop after your maiden fight and check for damage if you made a bad landing you first time

■ Have an experienced pilot fly it for you the first time if you have any doubts in your mind about the maiden flight

■ Take a break after you first flight and let the adrenaline burned off by bragging to your fellow members how good it flies

Fly low and at a medium speed on your first few flight

■ Listen to your engine run and have an observer with you to remember what you talked about during the flight or if you get into trouble . Always balance your props, vibration is a killer.

■ Remember nose heavy airplanes fly all the time, tail heavy airplanes fly only once. Be on the CG!

■ Flying two mistakes: high in the beginning and not close to people, planes or runways. Being a center of the runway hog does not endear you to many modelers.

#### Double Check

Double check that all screws are installed, all components tightly secured, batteries and or fuel tank are full, all surfaces are working in the correct directions, balance is correct and range test passed before performing your maiden flight.

#### WE WISH YOU A SUCCESSFUL MAIDEN AND MANY HAPPY FLIGHTS WITH YOUR NEW MODEL

Tony Tan, Pilot-RC



### **Zhongshan Pilot Model Aircraft Product Ltd**

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