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PRECISION AEROBATICS *Katana MX*



WILD has a whole new meaning!



Precision Aerobatics has been around for many years now and has a devoted following of modelers. The folks at Precision take a different approach than most when it comes to their product line. Instead of flooding the market with several different models of various types and sizes, they performance test and tweak approximately one new model per year. With that kind of R&D, Precision Aerobatics has developed a reputation for some of the best flying aerobatic aircraft available.

The Katana MX is a mid-size, 3D extreme machine that screams "performance" right out of the box. The airframe is chock full of carbon components and they offer a purpose-built, highly-tested power system developed for their line to guarantee performance that will please even the most demanding 3D pilots. Flight qualities are good enough to put a smile on Simon Cowell (assuming he flies RC) and would be a good candidate for anyone from the average sport flier to a serious 3D enthusiast.

Author's Opinion

The Precision Aerobatics Katana MX is an awesome, fire-breathing 3D monster! It's a feather-light carbon-reinforced flying machine that will sustain the most aggressive of today's extreme flying. That being said, with sane rates it is also a stable aerobatic sport plane. The Katana MX is available as just the airframe or it can be purchased with a complete power system.



Key Features

- > The Katana MX has an insane power-to-weight ratio.
- > The airframe has incredible strength to sustain even the most aggressive 3D flight.
- > The purpose-built Precision Aerobatics power system guarantees optimum performance.

Pros

- > Awesome flight performance
- > Great looking aircraft
- > Lots of carbon fiber components
- > Excellent construction quality
- > Design features are based on performance, not manufacturing ease

Cons

- > You can purchase the model as just the airframe or fully decked-out with all the options.
- > The Katana MX has a wide flight envelope; from precision aerobatic flight to wild 3D.
- > When tightening down the prop, the taper on the prop adapter interfered with the spinner back-plate, preventing the cullet from locking on the motor shaft. The back-plate needed to be bored out to allow adequate tightening of the prop.
- > The tail wheel is very light but fragile as well. Mine broke off on the first flight.

NEED TO KNOW

MANUFACTURER/DISTRIBUTOR: Precision Aerobatics

TYPE: 3D aerobatic ARF

FOR: Intermediate sport pilots

MINIMUM FLYING AREA: Baseball field

PRICE: \$299.95

NEEDED TO COMPLETE:

Four-channel radio system, motor, propeller, spinner, servos (depending on what accessory package is purchased along with the model), glue and shop tools

The Katana MX airframe is primarily constructed of laser-cut balsa, plywood and carbon fiber. It comes in four different color choices: red/black/white, blue/black/white, green/black/white and yellow/black/white. The airframe doesn't appear to have much substance, yet it is very light and incredibly strong. Included in the kit is the airframe, two-

piece wing, pre-painted fiberglass wheel pants and cowl, carbon wing tube, carbon landing gear, pre-installed canopy/access cover secured with rare earth magnets, carbon push rods, carbon-reinforced motor mount, wheels, hardware package, control deflection pitch gage, Precision Aerobatics DVD and detailed direction booklet.



IN THE AIR

There is no reason to ramble on about take-off roll because, for all intents and purposes, there isn't one. Acceleration of the Katana MX with its Thrust 50 motor and 6S pack is nothing short of spectacular. The large diameter VOX prop is designed for raw pulling power and for instant acceleration, keeping the top speed of the Katana MX sane. Not more than a click or two of trim was required for level flight. The light wing loading gives the Katana MX a light feel and the longer tail moments (compared to previous Precision Aerobatics models I've flown) provide great tracking. Even with the pocket-style aileron hinges and generously proportioned ailerons, the aileron sensitivity was very manageable, making the Katana MX feel like a larger aircraft. I attribute this to the huge chord of the wing. The center of gravity (CG), out of the box appears to be slightly tail-heavy, even with the batteries forward on the battery tray. However, the flight controls did not indicate this and were very balanced. Exponential values were about the same for all flight controls. Slow and point rolls are text-book and snap rolls, inside and out, are very manageable as if you were flying a much larger plane. Minimal coupling was noted (not worth programming out) and the massive rudder made high-alpha knife edge flight child's play! It flat spins well and inverted flat spins even better. The Katana MX performs incredible blenders from a full throttle dive to instant inverted flat spin!

Speaking of hovering, the Katana MX can be compared to a 40-percent foamy with a DA150 on nitrous. It hangs in there with all the control authori-



SPECS

WINGSPAN: 57 in.

WING AREA: 749 sq. in.

WEIGHT: 4 lb. 1.6 oz.

WING LOADING: 12.6 oz./sq. ft.

CUBE LOADING: 5.5

LENGTH: 56.3 in.

RADIO: Four channels required; Flown with JR 12X transmitter and Spektrum AR6115E receiver

SERVOS: (4) Hitec HS-5085MG digital servos

MOTOR: Thrust 50 brushless out-runner

ESC: Quantum 70 ESC with BEC

PROPELLER/SPINNER: VOX 15x8 prop, Precision Aerobatics 2.17-in. carbon fiber spinner

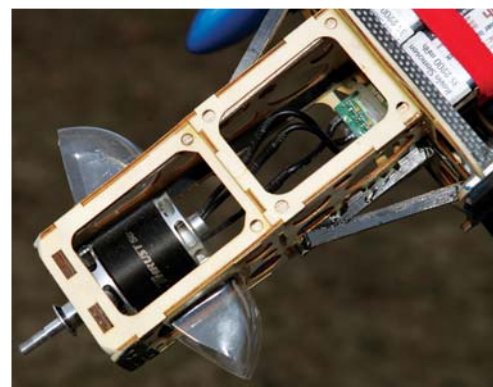
BATTERY: Two Precision Aerobatics V2 3S 2200mAh LiPo (in series 6S)

RPM: 8,500

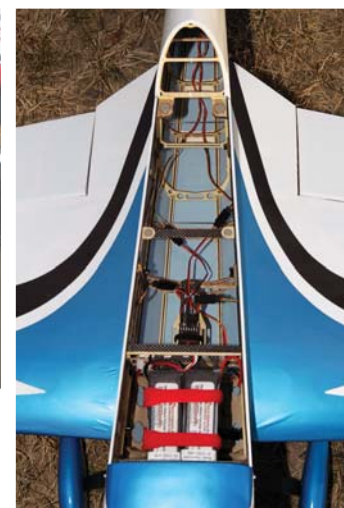
ty you would ever need and twice the power needed to pull out. Harriers, right side up and inverted, are quite stable, which I attribute to the massive wing roots of the Katana. The lightly-loaded wing gives the Katana MX a light, nimble feel even when speeds are pushing the stall zone. Stalls are a non-issue. It has a tendency to drop a wing when pushed hard enough. I flew the Katana MX with and without the Vortex Generator (VG) kit and found that it has a reduced stall speed with the kit installed, however when it did stall it was more abrupt. With that in mind I did note enhanced knife edge and that snap rolls and tumbles were more abrupt when using the VG kit. In either configuration, the Katana MX is so lightly-loaded it basically it has to be forced into a stall. Recovery is text-book and achieved by removing the elevator input and adding power. Landing the Katana MX is anticlimactic, using elevator for pitch and power for altitude. The 15-inch propeller helps provide the excellent breaking qualities of the Katana MX. A little power keeps it moving and keeps the controls effective. Dragging the plane with a little power and cutting for a minimal roll-out works every time.

ASSEMBLY TIPS

The horizontal stabilizer is fully symmetrical except for the center flat section that slides into a slot cut in the fuselage. The stab self-centers as it slides into position and is locked in with a little epoxy. The rudder and elevator are pre-slotted for flex hinges and require a drop or two of CA to lock them in place. The tail wheel assembly fits into a small groove in the bottom of the rudder along with some epoxy to keep it secure. The carbon fiber landing gear is anchored with screws to a carbon fiber plate in the fuselage. I'd suggest Loctite on all screws anchoring into carbon fiber because of a tendency to loosen. The wheels and wheel pants install traditionally and the wheel pants form to fit snugly to the gear leg. The laser-cut carbon fiber-reinforced motor mount gets fitted to the firewall and is locked into position with carbon rods. Additional external carbon-reinforced balsa



bracing adds even more rigidity. It is mandatory to apply a small bead of epoxy to all attachment points. The two-





piece wing comes fully assembled and control surfaces fully hinged. The wing uses a gapless pocket hinging system for the aileron to maximize control effectiveness and performance.

The Katana MX uses a carbon spar tube, carbon fiber alignment pins and plastic thumb screws to keep the wings attached to the fuselage.

Prior to installing Hitec HS-5085MG digital servos, I soldered in servo lead extensions on the rudder and elevator servos. Each servo is mounted close to its control. Carbon fiber control horns fit into factory-cut slots in their respective control surfaces and are locked into place with CA glue. Precision Aerobatics carbon fiber servo arms were fastened to each stock servo arm. Short carbon fiber push rods with ball links at the servo end and aluminum clevises attach to the control horn. The pushrods



Precision Aerobatics offers Vortex Generators (VG) that can be added to the Katana MX's wings. The VGs dramatically improve the 3D performance of the model.

are not adjustable once the ends are glued on, so making sure the servos and controls are centered is a must.

The Trust 50 brushless motor is a monster and performance is consistent with a built-in cooling fan in the back of the motor and generous cooling scoops directing air. A Quantum 70A electric speed control has a generous heat sink and is perfect for the Thrust 50. A pair of Precision Aerobatics V2 3S 2200mAh LiPo battery packs is wired in series to form a 6S battery that provides the power. The pre-painted fiberglass cowl fits like a glove and needed to be drilled for the four mounting screws. A VOX 15x8 wooden prop and Precision Aerobatics carbon fiber 2.17-inch spinner finish off the power system.

THE LAST WORD

Precision Aerobatics does it again with yet another outrageously fun 3D machine. The Katana MX is a feather-light, highly-powered delight. It has a wide flight envelope that has a gentle stable sane side and can be flown with an element of precision or pushed to the limits into 3D utopia. The kit quality and accessories are top notch and assembly was straightforward. The Vortex Generators are cool looking and there are performance gains but careful consideration is required when transporting in order not to damage them. Precision Aerobatics does make wing bags for the wings that are designed to protect the VGs during transport. Precision Aerobatics did their homework and cranked out another winner! 🏆

We Used

TRANSMITTER
JR 12X

RECEIVER
Spektrum AR6115E

SERVOS
Hitec HS-5085MG

MOTOR
Thrust 50 brushless outrunner

BATTERY
(2) Precision Aerobatics V2 3S 2200mAh LiPo

ESC
Quantum 70A

PROPELLER
VOX 15x8

SPINNER
Precision Aerobatics 2.17-inch carbon fiber



CONTACTS

JR jr radios.com, (800) 338-4639

PRECISION AEROBATICS precisionaerobatics.com, (770) 292-9122

SPEKTRUM spektrumrc.com, (800) 338-4639

THRUST MOTORS thrustmotors.com, (770) 292-9122

VOX PROPS VoxProps.com, (770) 292-9122

For more information, please see our source guide on page 105.