

**PAYLOAD. RANGE. COST.**



**IT'S A CiNCH<sup>®</sup>**

# The CiNCH<sup>®</sup> AutoCopter: The CNC-UAV Platform Uniquely Suited to Your Specification Requirements.

**Introducing the CiNCH<sup>®</sup> AutoCopter, a CNC-UAV offering a unique combination of control, construction, performance and cost parameters**

The CiNCH AutoCopter is based on the Composite FX one-man XE airframe, now purpose-built for automatic flight. With tens of thousands of flight hours on the manned airframe and components, the CiNCH uses tried and true construction methods, systems integration, and mechanical systems that provide unparalleled useful load and price point.



## **AUTOMATIC CONTROL CNC UAV Platform**

Just as Computer Numeric Control revolutionized the machine tool industry in the 1960s and 1970s, the CiNCH uses modern automation combined with rugged, precision components for dependable VTOL operation. Easily programmable flight plans open markets and opportunities.

### **Guidance**

Guidance systems detect deviations from programmed flight path caused by external factors. Microwave ground sensors, GPS, UHF radios and other equipment are all standard and enable the CiNCH to operate beyond line of sight.

### **AutoPilot**

The autopilot system maintains the flight path directed by the Guidance system and can be operated in manual, GPS, or automatic modes. Mission Planner programming can be governed by GPS, Cell, Satellite. Automatic takeoff and landing standard. Terrain following software is available.

## **PROVEN AIRFRAME CONSTRUCTION**

### **Engine**

The CiNCH is powered by an 800cc, two-cylinder, two-stroke engine that is liquid cooled, with electronic fuel injection and mechanical oil injection. With 85 HP output, the machine can operate at 100% duty cycle continuously, consuming just 6 gallons of 93 Octane pump gas per hour. Open engine access allows for fast and easy servicing.

### **Airframe**

The all-composite monocoque construction airframe has been statically tested to +/- 6G with zero defects, and naturally absorbs the many vibrations during flight without experiencing fatigue. The E-Glass/Vinyl Esther combination has proven to be more durable, economical and safer than comparable carbon fiber designs.

### **Servos / Electronics**

A combination of powerful linear and rotary servo actuators control pitch, roll, yaw, tail position and throttle, producing remarkably precise, stable and smooth flight characteristics.

## **UNMATCHED PERFORMANCE**

### **Endurance**

The CiNCH can fly routinely for long missions on the 12-gallon standard fuel cell, consuming just 6 gallons per hour on average. Mission range, depending upon payload and conditions, is as much as 150 miles (one-way). Optional 20-gallon fuel cell available.

### **Payload**

A useful load of 400lb (180Kg) must conform to aircraft CG (Center of Gravity) requirements.

### **TBO and Maintenance Costs**

The CiNCH has a 500-hour Time Before Overhaul (TBO), at which time all belts, bearings and blades must be replaced. Including TBO costs, typical operating costs average \$40 USD per hour\*, including fuel.

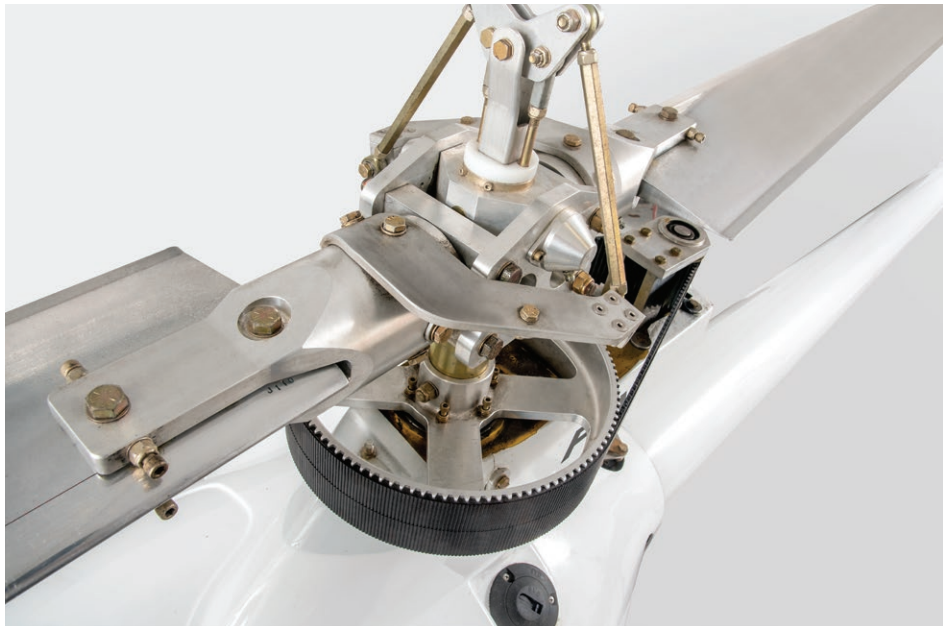




# The CiNCH AutoCopter: Ready to Become What You Need It to Be:

An Easily Adapted, Flexible VTOL Platform.





**Rotor System**

The man-rated semi-rigid underslung, two rotor system has been shown for decades to be the simplest, most cost effective and efficient methods for VTOL rotorcraft. Its 19’-6” rotor diameter and 40” tail rotor deliver exceptional lift and control capability.

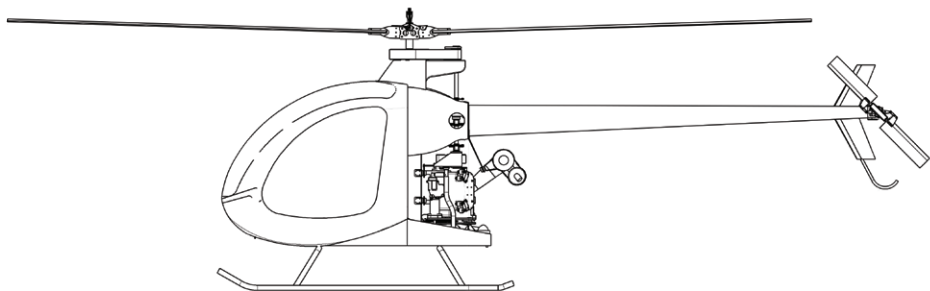
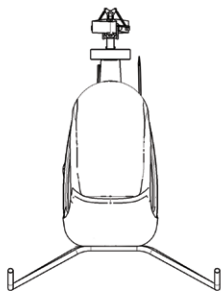
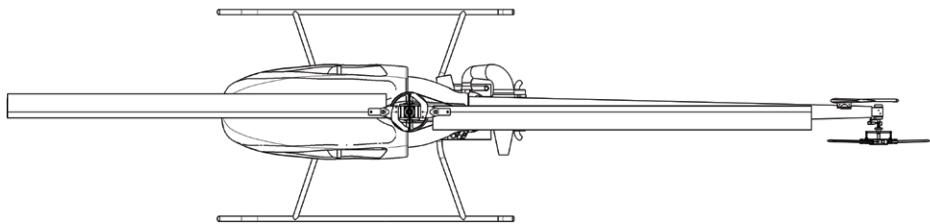


**Gearbox / Transmissions**

The gear reduction transmission of the XE UAV employs cogged belts, enabling dependable reductions with very low weight. Wet (oil bath) gearboxes enable the tail rotor to deliver enough power to hold the craft steady in 35 -40 MPH cross winds.

**Payload Compartment**

Ready to accept your payload of choice, the base platform measures 0.0 x 0.0 ft. with interior volume of 00 cubic ft. Access doors on both sides swing open 180° for easy access.



**Glossary**  
CG center of gravity  
CNC computer numeric controlled  
TBO time before overhaul  
UAV unmanned aerial vehical  
VTOL vertical takeoff & landing

Engine	Inntec 800	
Empty Weight	460 lbs	209 kg
Maximum Gross Weight	1000 lbs	455 kg
Length, Airframe	16’	4.8 m
Overall Length	21’ 7”	6.5 m
Width, Airframe	62”	1.8 m
Height	82”	2.1 m
Main Rotor Diameter	19’ 6”	6.0 m
Tail Rotor Diameter	40”	1.0 m
Maximum Air Speed	95 mph	152 kph
Cruise Air Speed	80 mph	128 kph
RPM Main Rotor	590 rpm	
RPM Tail Rotor	2670 rpm	
Climb Rate (estimated)	1200 ft/min	365 m/m
Fuel Capacity	12 gal	45 L
Fuel Burn (estimated)	6 gal/hr	23 L/hr
Fuel Capacity w/ Aux. Tank	20 gal	76 L
Flight Duration	2 hrs	
Flight Duration w/ Aux. Tank	3.3 hrs	
Aircraft Electrical System	12 v / 20 A	



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