

# PROPELLERS

## WARP DRIVE ADVANCED COMPOSITE PROPELLERS



**Warp Drive's Advanced Composite Carbon Fiber propeller has a structural strength near that of metal propellers.** Because of the stiffness achieved by using carbon fibers, the prop will do very little coning (bending forward) under power. Proper fiber placement allows the prop to flex torsionally for maximum cruise efficiency. The strongly fixed position of the blades along with optimum torsional performance translates into more thrust than conventional propellers.

The interior structure of this new propeller is all carbon fiber - no fiberglass, no foam, no filler - an all carbon fiber matrix combined with top quality hybrid epoxies. Carbon fiber is one of the strongest building materials available. When properly engineered, carbon fiber can achieve the strength and stiffness of a metal part, as demonstrated by its wide range of industrial and aerospace uses.

**The interior structure of this new propeller is all carbon fiber - no fiberglass, no foam, no filler - an all carbon fiber matrix combined with top quality hybrid epoxies.** Carbon fiber is one of the strongest building materials available. When properly engineered, carbon fiber can achieve the strength and stiffness of a metal part, as demonstrated by its wide range of industrial and aerospace uses.

### WARP DRIVE PROPELLER BLADE TYPES

All propellers and blade types are available with Stainless Steel Leading Edge protection as an option at additional cost.

- STANDARD ADVANCED COMPOSITE CARBON FIBER BLADES**  
The Standard Carbon Fiber Blades can be used on Rotax, Arrow, VW and similar engines.
- HIGH HORSE POWER ADVANCED COMPOSITE CARBON FIBER BLADES**  
The Carbon Fiber HP Blade will be required for use on Lycoming, Continental and some auto conversion engines.

### WARP DRIVE HUBS

Warp Drive offers two types of hubs of our propellers. First is our Standard Hub. This is an assembly of anodized aluminum plates and composite clamping blocks. It accommodates standard and custom hub bolt patterns of up to 3 1/8".

The second type of hub is the HP Hub. This hub consists of two halves machined from solid aluminum. It is the same weight as the standard hub assembly and can accommodate Rotax, Arrow, VW, SAE I Continental, SAE II Lycoming and custom bolt patterns.

#### STANDARD CARBON FIBER PROPELLER

- 2-Blade Std Carbon Fiber Propeller..... 05-31920.....
- 3-Blade Std Carbon Fiber Propeller..... 05-31925.....
- 4-Blade Std Carbon Fiber Propeller..... 05-31930.....
- Replacement Std Carbon Fiber Blade..... 05-31935.....

#### WITH HP HUB

- 05-31940.....
- 05-31945.....

#### HIGH HORSE POWER CARBON FIBER PROP WITH HP HUB

- 2-Blade Carbon Fiber H/P w/HP Hub..... 05-31950.....
- 3-Blade Carbon Fiber HP w/HP Hub..... 05-31955.....
- Replacement Carbon Fiber HP..... 05-31960.....
- Mounting Hardware (Rotax)..... 05-31965.....
- Protractor..... 05-31970.....
- Non-Standard Hub Pattern..... 05-31975.....
- Spinner (Rotax Pattern)..... 05-31980.....
- "HP" Hub (purchased separately)..... 05-31985.....

#### ORDERING A PROPELLER

We request all applicable information below when you are ordering:

- Name, Address, Phone Number(s)
- Vehicle - type, make, model, cruise speed, tractor/pusher,
- Engine - make, horse power,
- Reduction Drive - type, ratio. If there is no reduction drive, (State Prop RPM)
- Hub Requirements - A) Bolt circle dia, B) Number of bolts, C) Bolt dims, D) Center hole dims, E) Drive lug dimensions (if applicable),
- Propeller Description-rotation, diameter, structural limitation of diameter manufacturer's suggested prop description, no. of blades, tractor or pusher.

## QUICK ADJUST SYSTEM IVOPROPS



The Quick Adjust System Ivoprops allow you to adjust the pitch on the ground in a matter of seconds by turning the screw adjustor in the center of the prop. The supercams are welded on the end of the torsional rods. Each supercam fits into the groove in the screw adjustor. Turning the screw adjustor causes each cam to rotate and turn the torsional rod and thereby twist the blade therefore changing the pitch. Specify aircraft and engine make and model, and propeller diameter. \* Ultralight Ivoprop (3.5" cord, 48" to 72" diameter) is for engines up to 100 hp. \* Medium Ivoprop (4.5" cord, 52" to 74" diameter) is for engines around 100HP. \* Magnum Ivoprop (5.5" cord, 58" to 76" diameter) is a high-horsepower version for engines up to 700 HP. \* Magnum Paddle Ivoprop (5.5" constant cord, 58" to 84" diameter) is for high-horsepower air boats and bush planes.

- Ultralight 2-Blade Ivoprop..... P/N 05-33220.....
- Ultralight 3-Blade Ivoprop..... P/N 05-33225.....
- Ultralight 6-Blade Ivoprop..... P/N 05-33235.....
- Medium 2-Blade Ivoprop..... P/N 05-00692.....
- Medium 3-Blade Ivoprop..... P/N 05-00693.....
- Magnum 2-Blade Ivoprop..... P/N 05-33240.....
- Magnum 3-Blade Ivoprop..... P/N 05-33250.....
- Magnum 6-Blade Ivoprop..... P/N 05-33260.....

## IN-FLIGHT ADJUSTABLE PITCH IVOPROPS



The In-Flight Adjustable Pitch Ivoprop allows the pilot to change the propeller pitch in flight through a toggle switch mounted in the cockpit. Pressing the toggle switch one way sends an electric current through the graphite brushes to the slip rings and finally to an electric motor. Torque from the electric motor is channeled to a planetary gear drive which turns the lead screw. Torsional rods transmit movement from the center of the prop to the outside section of the blades,

causing the blade to twist therefore changing pitch. Total time for the full range of adjustment is about 5 seconds. Mounts directly to any Rotax gear box (B or C0 and can be adapted to VW, Subaru, Hirth, Arrow and smaller Lycoming and Continental engines. Older model Ivoprop ground adjustable props can be converted to the In Flight System with the Retrofit Kit. In Flight adjustable hub comes assembled with complete instructions. Weight of 3 blade 72" In Flight Adjustable Prop including all required parts (furnished) is 9 lbs. Specify aircraft and engine make and model, and propeller diameter (48" to 76"). Standard Ivoprop is for engines up to 100 hp. Medium Ivoprop is for engines around 100HP (52"-74" prop dia.). Magnum Ivoprops are a high-horsepower version with wider blades and a bigger hub for engines up to 700 HP (56"-76" prop. dia.).

- Standard 2-Blade Ivoprop Kit..... P/N 05-33205.....
- Standard 3-Blade Ivoprop Kit..... P/N 05-33210.....
- Standard Retrofit Kit for Ground Adjustable Ivoprops..... P/N 05-33215.....
- Medium 2-Blade Ivoprop..... P/N 05-00694.....
- Medium 3-Blade Ivoprop..... P/N 05-00695.....
- Medium Retrofit Kit for Ground Adjustable Ivoprops..... P/N 05-00696.....
- Magnum 2-Blade Ivoprop Kit..... P/N 05-33270.....
- Magnum 3-Blade Ivoprop Kit..... P/N 05-33280.....
- Magnum 6-Blade Ivoprop Kit..... P/N 05-33290.....
- Magnum Retrofit Kit for Ground Adjustable Ivoprops..... P/N 05-33295.....

## CONSTANT SPEED ELECTRONIC GOVERNOR



• Converts In-Flight Adjustable Ivoprop into the constant speed propeller • Plugs into existing wiring harness • Size: 2" x 4" x 1" P/N 05-00601.....

## ULTRA-PROP



Select 2, 3, or 4 blade props. Each blade is moulded from a high strength glass-reinforced composite. High efficiency airfoil design means high thrust from a 59" diameter prop. One set of pitch blocks included, additional blocks available in 1" increments. Universal hubs made from high strength composite. Accommodates most popular bolt-mounting patterns. Each prop comes complete with all assembly and mounting hardware, and complete instructions. Black blades and hub are beautifully complemented by high impact polyester spinner. Blades can be trimmed to length, allowing custom prop diameters as small as 48".

Description	Part No.	Price	Description	Part No.	Price
Kit 2 Blade LH	UP102L		Kit 2 Blade RH	UP102R	
Kit 3 Blade LH	UP103L		Kit 3 Blade RH	UP103R	
KIT 4 Blade RH	UP104R				

## ACCESSORIES

Description	Part No.	Price	Description	Part No.	Price
Pitch Block Set 9 DG	UP9	.	Pitch Block Set 10 DG	UP10	.
Pitch Block Set 11 DG	UP11	.	Pitch Block Set 12 DG	UP12	.
Pitch Block Set 13 DG	UP13	.	Pitch Block Set 14 DG	UP14	.
Pitch Block Set 15 DG	UP15	.	Pitch Block Set 16 DG	UP16	.
Pitch Block Set 17 DG	UP17	.	Pitch Block Set 18 DG	UP18	.
Pitch Block Set 20 DG	UP20	.	Hardware Pack	UPHDW	.
Bolt Sleeve Set	UPSLEEVE	.	Spinner	UPSPIN	.
LH Blade White	UP105P	.	Blade RH Yellow	UP105T	.
Hub half 2 Blade	UP1072	.	Hub Half 3 Blade	UP1073	.
Hub Half 4 Blade	UP1074	.			