

# PROPELLERS

## PRINCE AIRCRAFT COMPANY P-TIP PROPS



**WOOD P-TIP PROPELLER** - Before the "Carbon Fiber P-TIP Propeller", this had been considered one of the most efficient and lowest noise propellers available; the only wood/carbon fiber anti-vortex droop tipped propeller in the world. This propeller is a wood, fixed pitch propeller that relies on the forward pull of the propeller to automatically provide pitch change proportional to the amount of force being applied to the propeller disk. When a propeller operates at a slower airspeed than its maximum capabilities, it has a proportional pull in relation to the velocity of forward motion, so at takeoff and climbing condition the propeller will have its largest forward pull. Due to the scimitar shape, the tip of the propeller cones forward, as the coning angle changes the propeller will lessen pitch that provides shorter takeoffs and higher rates of climb. As the propeller increases in forward speed the disk pressure is reduced, this forces the propeller to increase pitch and top speed. This change in pitch is approximately four inches from takeoff to cruise. The droop P-TIP is to control the air spillage over the propeller tip that delays the tip vortices which cause drag and turbulence within the propeller arc. A propeller, like a wing, works best when it has unturbulated air over the airfoil sections. The P-TIP delays the vortices, the propeller then has smooth air to provide best thrust and a pronounced reduction in propeller noise. Additional benefit of the P-TIP design is the volume of air the propeller produces. When air flows through a standard tip propeller design, the airflow at the tip will flow over the propeller tip. As soon as it passes the tip it will tuck down behind the propeller blade giving a cone of air from the propeller smaller than the propeller diameter. For example, a 72" diameter propeller without a P-TIP will give a volume of air from the propeller of approximately 68" of diameter; a P-TIP propeller will provide 72" of air volume. This means that a 68" P-TIP will give the same volume of air as a standard tip 72" propeller. By reducing propeller diameter there is less frontal area or flat plate drag of the aircraft. Higher top speeds are the result without sacrificing takeoff or climb. Your benefit is a lightweight, pitch changing propeller that will give you the best of short takeoff, maximum cruise, and more flying enjoyment in a quieter cockpit. **COMPOSITE P-TIP PROPELLER** - Composite P-Tip Props retain the same qualities of the wood P-TIP but are more efficient and durable. Prince uses the reliable time proven wood core of hard maple, then completely encloses the blades in multiple layers of high tensile strength composites. The hardwood core absorbs the dangerous harmonic vibrations and benefits your airframe by smoothing the engine power pulses, and the composite wrapping allows the airfoils sections to be thinner, reducing drag while increasing durability and locks each blade into operating at precise angles. The best working propeller is one that is rigid enough to allow all blades to move alike, thin at the cord section to eliminate as much drag as possible, and strong enough to satisfy the large amounts of stress required during flight. Urea Formaldehyde adhesive meets Military Specifications to insure reliable operation and trouble free flying for the life of the propeller. Propellers are finished in a metal prop gray color, this shade will match nearly every paint scheme, the Durability and Ultrahigh Gloss finish is a two-part Urethane, machine buffed to achieve a propeller that reflects the quality of manufacturing like no other propeller available.

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**Note: Request Prince Propeller order form at time of order we will fax or mail form to you to complete to insure correct propeller is furnished for you application.**

### APPLICATION CHART

Aircraft	Engine	HP	Dia./Pitch	Hub Thickness	Price Schedule
Acro Sport	0-320	150	71/48	3.7	F
Avid Flyer	Rotax 503	52	68/34	2.1	B
	Rotax 532	64	71/35	2.1	B
Baby Great Lakes	C-80A	80	66/48	3.25	F
Cozy	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
Dragonfly	1834VW	60	52/45	2.75	D
	2100VW	82	52/48	2.75	D
Glasair	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
Glass Goose	0-540	270	69/113	3.7	F
	0-320	150	64/62	3.7	E
Kitfox	0-320	160	64/64	3.7	E
	Rotax 503	46	68/30	2.1	B
KR-2	Rotax 912	80	68/47	2.25	B
	1835 VW	55	52/48	2.75	D
Lancair	2100 VW	80	52/50	2.75	D
	Subaru	75	53/68	3.7	D
	0-200	100	58/68	3.7	E
	0-235	118	58/68	3.7	E
	0-290	140	60-72	3.7	E
	0-320	150	62/72	3.7	E
	0-320	160	62/74	3.7	E
	0-360	180	68/76	3.7	F

### LOW HORSE POWER PROPS

(Ultralight Type) Composite Schedule

Up to 54"	P-Tip	P-Tip
.....	\$8.00	\$12.20
B 55"-110" .....	\$8.50	\$12.75

### HIGH HORSEPOWER PROPS

Composite Schedule

Up to 45"	P-Tip	P-Tip
C Up to 45" .....	\$12.50	\$18.65
D 46"-55" .....	\$13.00	\$19.20
E 56"-65" .....	\$15.50	\$23.10
F 66"-110" .....	\$16.40	\$24.40

### PRINCE AIRCRAFT PROPELLER ORDERING INFORMATION

#### HOW TO DETERMINE COST

- Select style and price, P-TIP or Composite P-TIP propeller.
- Multiply propeller diameter times price per inch, e.g.: High Horsepower 68" dia. P-TIP propeller, 68 x 13.51 = **\$918.68**, Composite P-TIP 68 x 18.48 = **\$1256.64**
- Add Leading Edge Protectors, if required.

#### MULTI-BLADE PROPS

Three-Blade..... 2 Blade rate x 3      Four-Blade..... 2 Blade rate x 4

#### LEADING EDGE PROTECTOR

Up to 48" diameter ..... **\$61.00**      49" - 110" ..... **\$83.00**

**CALL FOR QUOTE ON ALL PRINCE AIRCRAFT PROPELLERS.**

### HARTZELL PROPELLER HARDWARE



Description	Part No.	Price
Hartzell Prop O-Ring C-3317-228	05-11998	---
Hartzell Prop O-Ring C-3317-230	05-12380	---
Hartzell Prop Fiber Washer A-1020	05-11999	---
Hartzell Prop Screw B-3845-8	05-12001	---
Hartzell Prop O-Ring C-3317-028	05-12509	---
Hartzell Propeller Nut B-3808-4	05-21990	---

### O-RING FOR HARTZELL COMPACT HUB PROPELLERS



The O-ring is A1633-11 or PRP909-6; commonly made by Parker Seal Company. Outside Diameter: .048 Length Under Flange: .096 Flange Diameter: .072 .....P/N 04-04566