crease considerably the mechanical characteristics of the composite to a change in its inertial behavior.

The Inconel SWIRL blade is protected with Inconel metallic reinforcement. For engines with high power, its structure can be reinforced (SWIRL-R).

- A high user comfort
- Many cruise extension
- Improved efficiency at takeoff and climb rate due to higher engine

Because of the extra flat profile and low chord, excellent performance is obtained in both: Aerodynamic and acoustic performance, but also in fuel consumption. Thanks to the "constant speed" effect, there is very small engine speed difference between the aircraft on ground and in flight. This propeller allows for excellent performance throughout the flight envelope including:

- Improved efficiency at takeoff and climb rate due to higher engine speed
- Many cruise extension
- A high user comfort

Propeller is available in Two-Blade and Three-Blade.

For engines with high power, its structure can be reinforced (SWIRL-R). The Inconel SWIRL blade is protected with Inconel metallic reinforcement. It increases the life of the propeller and also performance due to a change in its inertial behavior.

**DUC SPINNERS**

The DUC spinners are carried out in preimpregnated carbon fiber materials with on the surface woven carbon fabric. The mounting plate, entirely out of carbon, thickness 0.12" (3mm), is produced with the Carbon Forged® process, also used for the manufacture of the DUC propeller hubs.

This patented process makes it possible to increase considerably the mechanical characteristics of the composite parts.

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**DISCLAIMER:**

Prices Subject to Change Without Notice

**AIRCRAFT SPRUCE WEST**
CORONA, CA • (877) 4-SPRUCE

**AIRCRAFT SPRUCE EAST**
PEACHTREE CITY, GA • (877) 477-7823

**PROPS SPACERS**

Solid Prop Spacers, 6 thru holes. The prop bolt goes thru the prop and spacer and threads into the engine.

<table>
<thead>
<tr>
<th>Bolt Diameter</th>
<th>Part No.</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>Prop Spacer 1.5&quot;x5&quot; Rotax</td>
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<tr>
<td>Prop Spacer 2.25&quot;x5&quot; Rotax</td>
<td>05-02473</td>
<td>$407.00</td>
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<tr>
<td>Prop Spacer 3&quot;x5&quot; Rotax (Spool)</td>
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<td>Prop Spacer 4&quot;x5&quot; Rotax (Spool)</td>
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<td>$361.00</td>
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**DRIVE LUGS FOR EXTENSIONS**

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<tr>
<th>Part No.</th>
<th>Type</th>
<th>O.D.</th>
<th>I.D.</th>
<th>Thread</th>
<th>Price Ea</th>
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<tbody>
<tr>
<td>05-28310</td>
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<td>5/8&quot;</td>
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<td>3/8-24</td>
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<td>Threaded</td>
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<td>$33.25</td>
</tr>
</tbody>
</table>

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**PRICES ON PROP EXTENSIONS CAN VARY PER APPLICATION PLEASE CALL AND REQUEST A QUOTE FOR YOUR APPLICATION.**

**PROP HUB FRONT PLATES**

Required for wooden propellers. Flange equivalent to Cont. P/N 3991. For use with A-65, C-85 installations or Lyc. 0-235 with SAE1 (43/8") bolt pattern.

P/N: 10351Cont. .................................................. $34.75

Flange equivalent to Lyc. P/N 45688, for use with Lyc. 0-235 thru 0-360 engines with SAE2 Bolt Pattern engines.

P/N: 10352Lyc. .................................................. $36.75

**DUC SWIRL PROPELLERS**

The aerodynamic design of this propeller has been designed to have a "constant speed" effect. The blades are made from unidirectional layers of carbon fiber prepeg epoxy and their structure has been defined in order to obtain the maximum stresses in torsion and bending. Therefore the effect of "constant speed" is not related to the deformation of the blade but its geometry and its particular profile.

Because of the extra flat profile and low chord, excellent performance is obtained in both: Aerodynamic and acoustic performance, but also in fuel consumption. Thanks to the "constant speed" effect, there is very small engine speed difference between the aircraft on ground and in flight. This propeller allows for excellent performance throughout the flight envelope including:

- Improved efficiency at takeoff and climb rate due to higher engine speed
- Many cruise extension
- A high user comfort

Propeller is available in Two-Blade and Three-Blade.

For engines with high power, its structure can be reinforced (SWIRL-R). The Inconel SWIRL blade is protected with Inconel metallic reinforcement. It increases the life of the propeller and also its performance due to a change in its inertial behavior.

**DUC FC WINDSPOON PROPELLERS**

The FC WINDSPOON propeller, with its revolutionary shape called WINDSPOON, offers unrivaled performance. Its technical innovations have several consequences:

- Better performance.
- Lower fuel consumption
- Less Noise

The very special profile of the FC WINDSPOON blade has been calculated to optimize the airflow over the whole surface of the WINDSPOON. The offset of the twisting results in better reduction of friction and a longer life.

The FC WINDSPOON propellers are produced in accordance with the strictest standards of the industry, with unique equipment specially made to ensure the highest quality.

Propeller is available in Two-Blade and Three-Blade.

For engines with high power, its structure can be reinforced (FC-R WINDSPOON).

The Inconel FC WINDSPOON blade is protected with Inconel metallic reinforcement. It increases the life of the propeller and also its performance due to a change in its inertial behavior.

Available Diameter: 068"