DUC SWIRL PROPELLER

CHARACTERISTICS

PROPELLERS :

This propeller is available in :

- Two-bladed,
- Three-bladed.

Diameter :

1400 to 1745 mm.

Weight :

Two-bladed STD:	2.680 kg
Three-bladed STD:	3.520 kg
Two-bladed INCONEL:	2.740 kg
Three-bladed INCONEL:	3.610 kg

HUB :

The hub used is a carbon hub identical to DUC FC WINDSPOON propeller, made out of the FORGED CARBON PROCESS which makes it possible to obtain exceptional mechanical strength.

This propeller was found to have an « constant speed » effect. The blades are manufactured with part of carbon plies and their design was carried out to obtain maximum strains in torsion and inflection. It's why the constant speed effect is not dependent on the blade distortion but on its geometry and its particular profile.

Because of the extra flat profile and a small cord, we obtain an excellent thrust as well:

- high performance,
- lower noise,
- lower consumption.

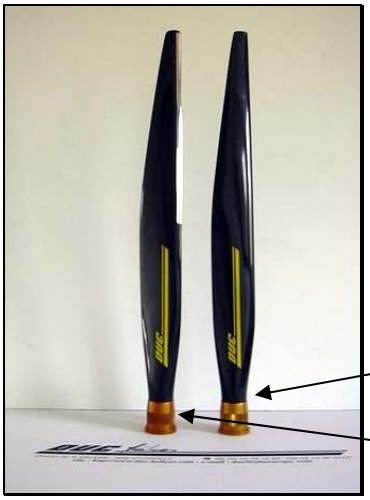
ADVANTAGES

Thanks to the « constant speed » effect, we have very little variation of the RPM engine between static and cruise.

This propeller makes it possible to have more performance on the whole of flight due to :

- Better take off and climb with higher rpm
- Better speed at cruise rpm
- Smooth and low vibration

TYPES OF BLADE



SWIRL STANDARD
and INCONEL blades

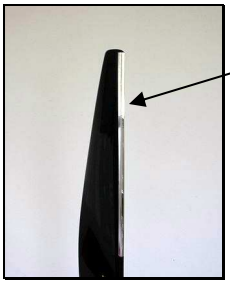
The SWIRL blade is available in two versions :

- The STANDARD SWIRL BLADE,
- The INCONEL SWIRL BLADE.

SWIRL STANDARD

SWIRL INCONEL

The INCONEL SWIRL Blade protects the leading edge with an Inconel insert.
INCONEL is a stainless steel with a very hard surface.



INCONEL insert

DUC hélices

APPLICATIONS

Engine	type	Reducer	Recommended system	Blade diameter
TRACTOR				
ROTAX 912	4 strokes	2.27	Three-bladed RIGHT tractor SWIRL	ø STANDARD
ROTAX 912 S	4 strokes	2.48	Three-bladed RIGHT tractor SWIRL	ø STANDARD
ROTAX 503 / 582	4 strokes	2.58 / 2.62	Two-bladed LEFT tractor SWIRL	ø STANDARD
ROTAX 503 / 582	2 strokes	3	Three-bladed LEFT tractor SWIRL	ø STANDARD
JABIRU 2200	4 strokes	-	Two-bladed RIGHT tractor SWIRL	ø 1620 mm *
JABIRU 3300	4 strokes	-	Three-bladed RIGHT tractor SWIRL	ø 1520 mm *
VOLKSWAGEN	4 strokes	-	Two-bladed RIGHT tractor SWIRL or LEFT according to the engine	ø 1620 mm *
PUSHER				
ROTAX 912	4 strokes	2.27	Three-bladed LEFT pusher SWIRL	ø STANDARD
ROTAX 912 S	4 strokes	2.48	Three-bladed LEFT pusher SWIRL	ø STANDARD
ROTAX 503 / 582	2 strokes	2.58 / 2.62	Two-bladed RIGHT pusher SWIRL	ø STANDARD
ROTAX 503 / 582	2 strokes	3	Three-bladed RIGHT pusher SWIRL	ø STANDARD
JABIRU 2200	4 strokes	-	Two-bladed LEFT pusher SWIRL	ø 1620 mm *
VOLKSWAGEN	4 strokes	-	Three-bladed RIGHT SWIRL or LEFT according to the engine	ø 1620 mm *
PENDULARS				
ROTAX 503 / 582	2 strokes	2.58	Two-bladed RIGHT propelling SWIRL	ø STANDARD

* For very fast machines (speed higher than 200 km/h) we advise a 2 blade right tractor propeller with a reduction of the diameter according to the smoothness and speed.

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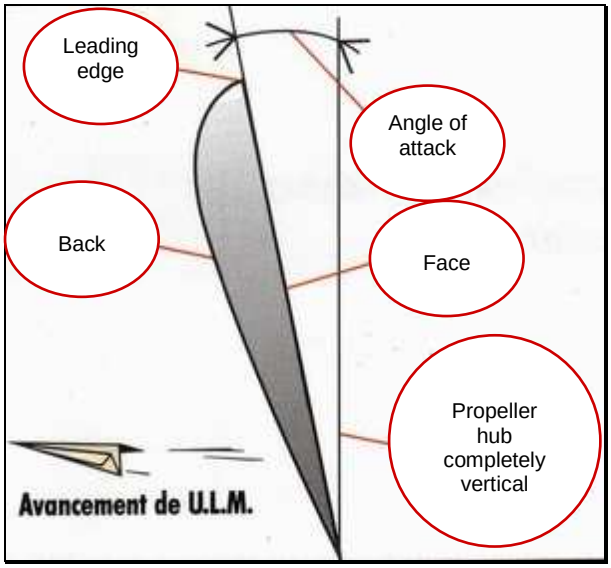
ADJUSTMENT

ANGLE OF ATTACK :

The values which follow are recommended base values and the engine static RPM must be checked.

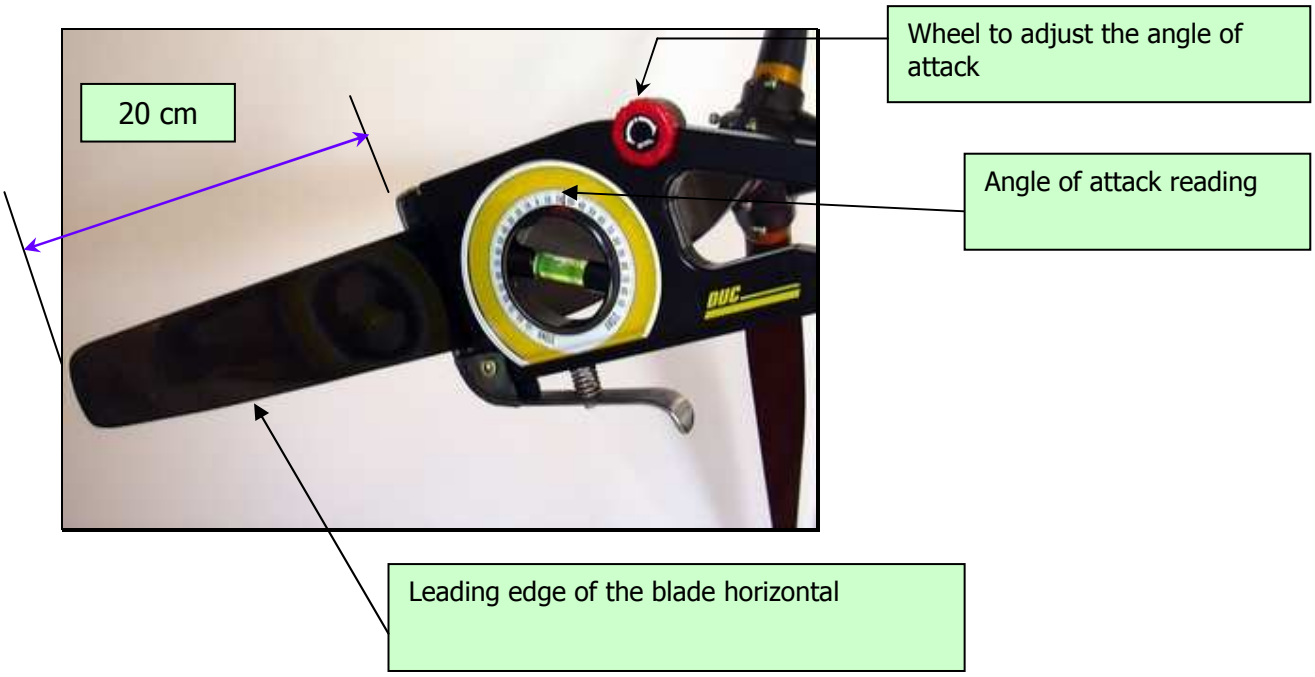


TWO-BLADED		
JABIRU 2200	/	17°
VW	/	17°
503	2.58	16°
582	2.58	18°
503	2.62	18°
582	2.62	20°

Three bladed		
JABIRU 2200	/	17°
912	/	20°
912 S	/	24°
503	2.62	13°
582	2.62	15°
503	3	15°
582	3	17°

The check is carried out with the inclinometer placed on the face (leading edge at top) at 20 cm from the blade tip. The angle of attack is formed between the vertical and the leading edge of the blade. For this, place your ULM so that the propeller hub is perfectly vertical.

ADJUSTMENT :



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ASSEMBLY AND ADJUSTMENT

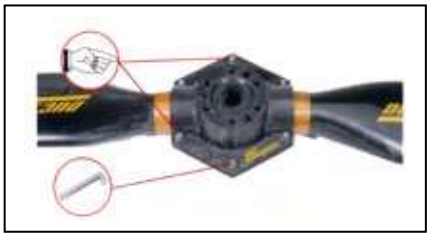
Upon receipt of your package, make sure that all the parts are included !

- Blades
- Hub halfs
- spacer
- Bolts (short and long)
- Nuts and washers

- Place one of the hub halfs on a table.
- Put the spacer in the center of the hub half.

- Place the 2 or 3 blades in their slots.
- Make sure that the DUC logo is facing you.

- Put the 2nd hub half over the assembly.



- From the back of the hub insert the 6 assembly bolts.
- Put on the assembly nuts and tighten moderately.

- If assembling with the propeller spinner, include the back plate.

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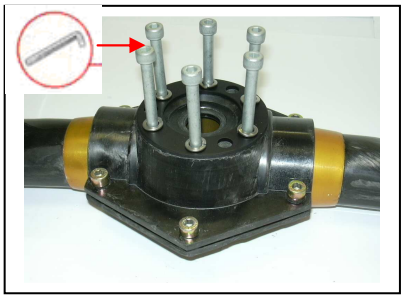
- Be careful you get the washers in the correct order first the black washer and after the GROWER washer.



- Put the propeller on the reducer, tighten moderately.

- Position your microlight so that the propeller hub is completely vertical.
- Measure this with the level on the adjusting tool/inclinometer.

- Loosen the assembly bolts enough to enable you to turn each blade easily in its slot.

- Rotate the first blade horizontal.

- Take the adjusting tool in your hand, press the lever, put the tool right at the end of the Windspoon.
- Make sure that the tool is flat and steady against the face of the blade, leading edge uppermost.
- Turn the wheel with your thumb to the desired angle of attack.

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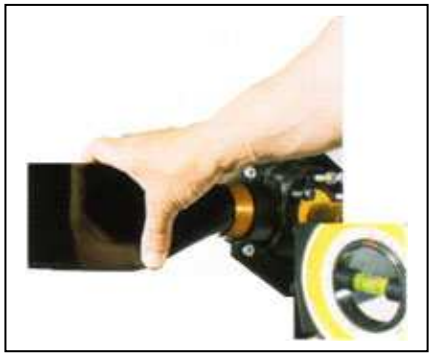


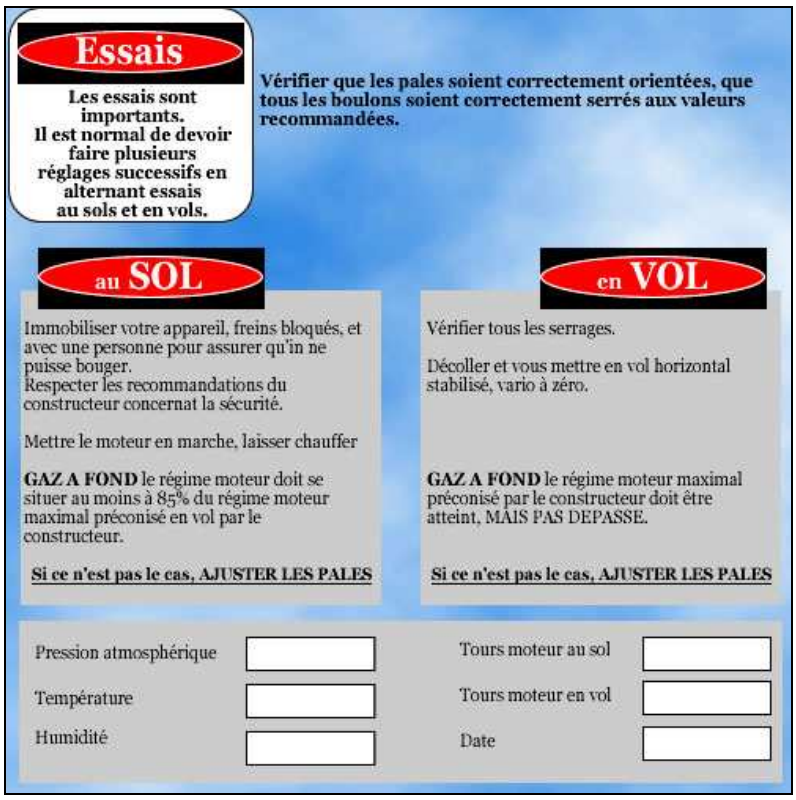
- Hold the foot of the blade and turn slowly until the bubble of the tool is completely in the middle and level. Wriggle the blade to get fine adjustment.

The tightening of the bolts on the propeller is carried out in 2 stages :

- 1st tighten the bolts moderately,
- 2nd tighten with a torque wrench.

Tightening
2.5 Kg/m 25 Nm

Attention
Retorque your propeller after 1 hour of use.



If you note anomalies during assembly or operation, do not undertake flight and contact the DUC-HELICES company immediately.

The accessories and the DUC propeller must be assembled in accordance with the technical notes of the DUC company.

Any deviation from this data will release the DUC company from any responsibility.