



DUC *Helices* Propellers

Social reason: SOCIETE DUC

Instruction Manual 5-blade Inconel FLAIR-2 Certified Propeller



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Revision Update

Date	Revision	Index	Object of Modification
28/10/2016	A	-	Creation
19/03/2018	B	-	New hub
05/09/2018	C	-	Modification of step 5 of installation of the FLAIR-2 propeller and DUC spinner
20/02/2020	D	(00)	Update of the § Applications + addition of tightening torque AN7

Each modification relating to the last revision or index in the list above has a dark red font color.
With each new revision or index, the entire body of the text is switched back to black.

Identification Form

Date		Delivery note n°	
Owner		Engine/Gearbox ratio	
Aircraft		1 st recommended pitch blade angle	
Notes :			
.....			
.....			
.....			
.....			

This instruction manual is to be maintained throughout the life of the propeller.
He may have to evolve. The owner must check with the DUC Hélices company
the latest version being valid applicable to the propeller.

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1. Presentation of the FLAIR-2 propeller

1.1. Description

The **FLAIR-2** propeller was developed for better acoustic performance for a silent propeller reference.

The blades are manufactured from carbon cloths and their design was performed in order to obtain maximum torsional stresses and bending.

The propeller blades 5 FLAIR-2 is not fixed and adjustable floor and has a diameter of 1680mm, with a weight of 11.3kg.

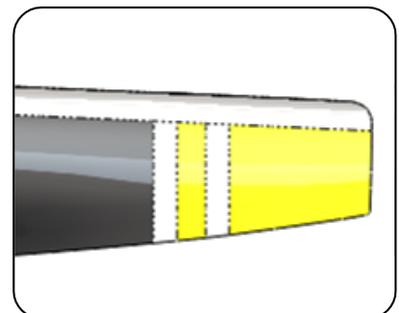
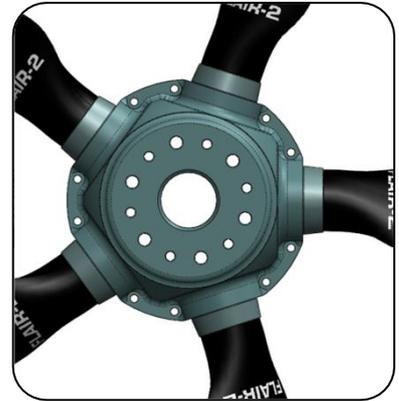
Its anodized aluminum hub is directly machine in mass by CNC machine.

The leading edge of the **FLAIR-2** blades is equipped with a metal shield Inconel®. This material is a superalloy with a very high surface hardness.

1.2. Characteristics

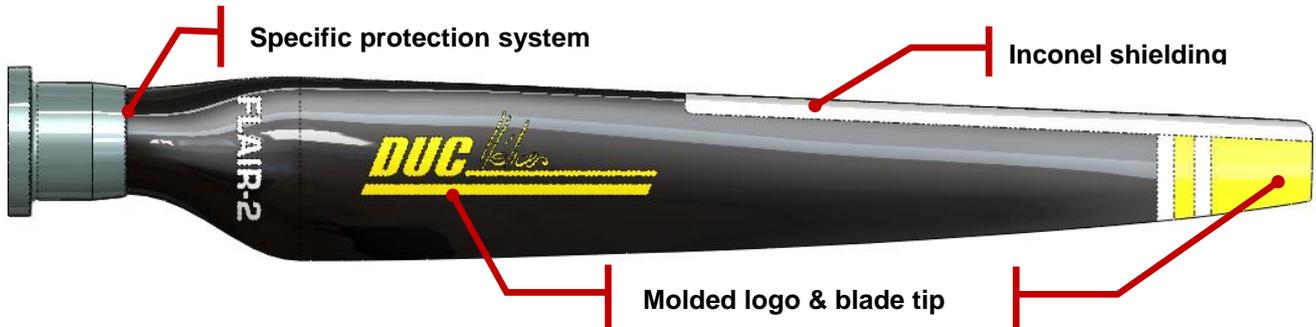
The certified **FLAIR-2 propeller** has the following specification:

- Tractor configuration, Right
- Diameter Ø1680mm (Ø66")
- **AN6, AN7 and AN8 fixing**
- Shielded leading edge in Inconel®
- Anodized aluminum hub
- Equipped with protection against lightning
- Direct assembly on the SAE2 propeller-shaft (Ø120.65mm)
- Mark in blade tip



1.3. Shielding leading edge in Inconel®

The leading edge of the **FLAIR-2** blades is equipped with a metallic shielding in Inconel®. This material is a superalloy containing mainly nickel, with a very high hardness of surface.
 In addition, the composite structure and the aluminum shade used at the foot of the blade are specific to fully block the phenomenon of galvanic corrosion between 2 materials of different natures.
 Finally, the color decorations (DUC logo + blade tip) are integrated during molding in the composite structure using technology specific to DUC. This makes them very robust and insensitive to wear or abrasion.



1.4. Accessories

- **Aluminum mounting spacer (Direct mounting on P.C.D SAE2_AN6 / SAE2_AN8)**
 Moves the plane of the propeller to adjust the position according the engine hood

- **Aluminum adaptor spacer (Direct mounting on P.C.D SAE2_AN7)**
 Move the propeller plane and adaptor the P.C.D fixation of the propeller

- **Spinner available in diameter Ø250mm (Ø9.8") to Ø340mm (Ø14.4")**
 + Spinner fillets to close the openings behind the blades

- **Adjusting tool for the setting of the pitch angle of the blades**

- **Neoprene cover protection of the blade**

- **Cleaning treatment for composite propellers**
 Save money! A clean propeller is more efficient and decreases the fuel consumption.



1.5. Sales Reference

Designation	Reference	Part number
Five-blade Inconel FLAIR-2 certified propeller, Right	01-25-001	H-FLR2_5-D-I_C

Note :
 Specify the airworthiness of the aircraft (CDN) when ordering.

2. Applications

The DUC propellers are given for a flight potential under normal operating conditions.

To keep the unlimited potential, DUC Propellers defined a TBO (Time Between Overhaul) for a propeller depending on its engine. Refer to section **7.1 Airworthiness Limitations** for more information.

Engine	Limitations applicable	Propeller diameter (mm)	Blade angle (°)	Blade angle allowed range (°)	TBO*
LYCOMING O-320 (AN6 flange)	160 HP 2 700 RPM	Ø1680	18° ± 2°	14° → 24°	2 000 hours or 6 years
LYCOMING O-320 (AN7 flange)	160 HP 2 700 tr/min	Ø1680	18° ± 2°	14° → 24°	2 000 hours ou 6 years
LYCOMING O-360 (AN8 flange)	180 HP 2 700 RPM	Ø1680	19° ± 2°	15° → 25°	2 000 hours or 6 years

* This is the maximum life of the propeller authorized by the Type Certificate.

Note

The values of the pitch angle are applied to 20cm from the tip of the blade. They were determined following flight tests on each of these engines.

For a good utilization of the propeller, refer to section **7. Maintain of Airworthiness**

3. Installation precautions

WARNING

Make sure the ignition is turned off before starting any type of operation on the propeller.
Do not run the engine without propeller, engine damage will result.

IMPORTANT

The blades of a propeller are part of a whole. **DO NOT INTERCHANGE** with other similar blades from propeller. The propeller blades are manufactured to their application. Their structure, weight and balance are different from a propeller to another.

The spinner is an important element for cooling the engine. It is highly recommended to use a spinner.

The propeller is supplied with the appropriate screws. The screw change is contrary to our recommendations

WARRANTY CONDITIONS

The user is still flying under its full responsibility (see **8. General terms of sale**).

4. Components of the FLAIR-2 propeller

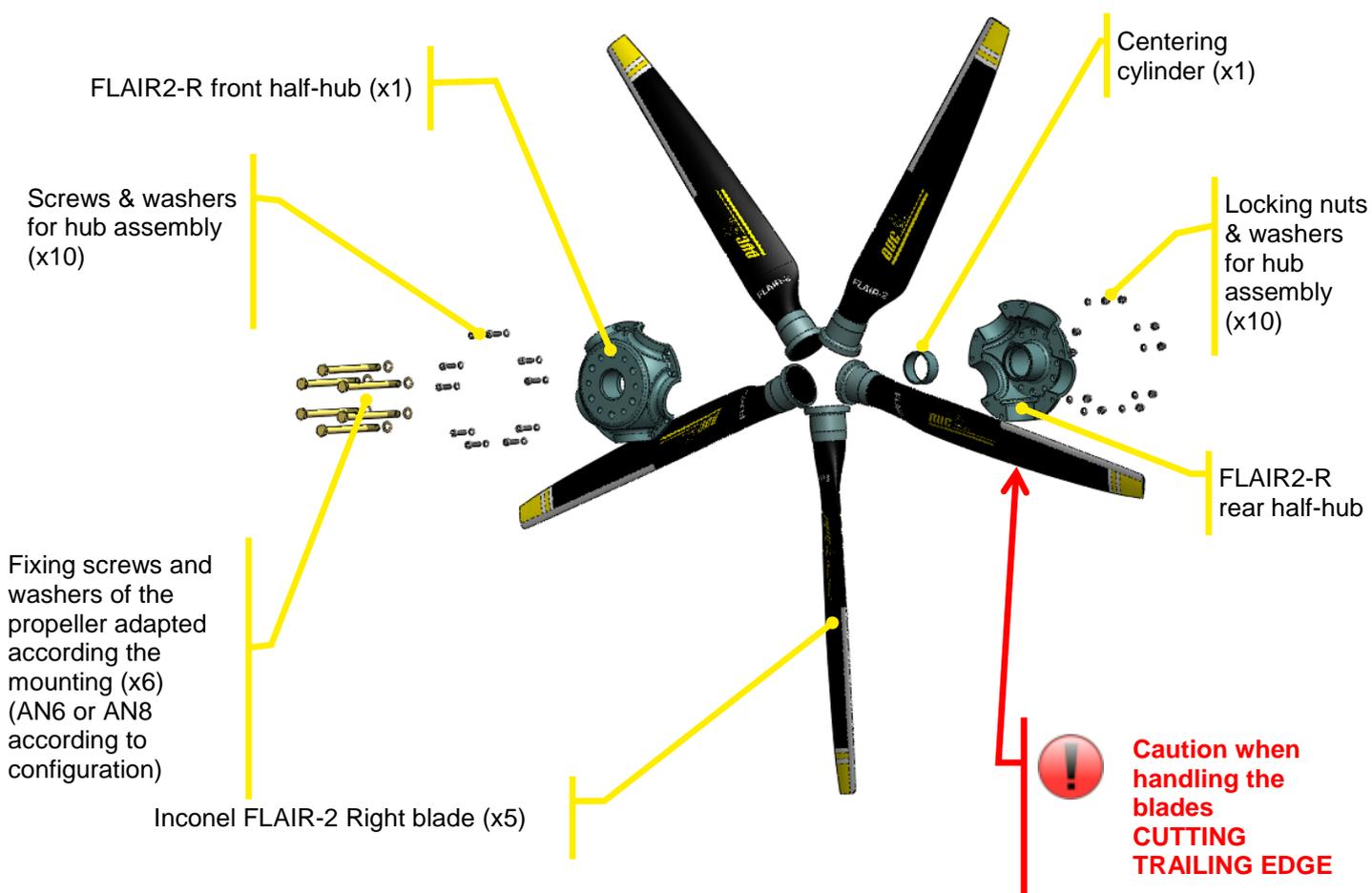
4.1. Mounting configuration of the FLAIR-2 propeller

Here is a configuration table of the FLAIR-2 propeller mounting according to the propeller-shaft of the engine.

If needed, see annex 9.1.Dimension of the engine propeller-shaft.

MOUNTING	ENGINE PROPELLER-SHAFT		
	Type SAE2 N6 Ø4-5/8" / Ø120.65mm (Ex : Lycoming O-320)	Type SAE2 AN7 Ø4-3/4" / Ø120.65mm (Ex : Lycoming O-320)	Type SAE2 AN8 Ø4-3/4" / Ø120.65mm (Ex : Lycoming O-360)
Direct on propeller-shaft (without spacer)	X		X
With adaptor spacer		X	

4.2. Exploded view for propeller



Note

This exploded view shows the principle of the FLAIR-2 propeller assembly. The size of all of these components changes depending on the configuration of the propeller (length of the screws...).

4.3. List of components

Designation	Optional (according to the recommended mounting)	Part Number	Quantity
Blade			
Inconel FLAIR-2 Certified Right Blade (The 5 blades of the propeller are statically balanced together)	-	FLR2-D-I_C	05
Hub			
FLAIR-2-R 5-blade Rear Half-Hub	-	DMFLR2R-5-AR	01
FLAIR-2 Centering Cylinder	-	CC-FLR2-C	
FLAIR-2-R 5-blade Front Half-Hub	-	DMFLR2R-5-AV	
CHC M8x30mm Screws (Included washers Ø8mm and M8 locking nuts)	-	V-CHC8FLR2-30	10
Entretoises			
SAE2-AN8 20mm spacer	X	EI-SAE2AN8-20	01
DUC Ø19 AN8 pawn	X	PI-DUC19-AN8	06
SAE2AN7-SAE2AN6 90mm adaptor spacer	X	E-S2A7_S2A6-90	01
SAE2AN7-SAE2AN6 100mm adaptor spacer	X	E-S2A7_S2A6-100	
DUC Ø17 AN6 pawn	X	PI-DUC17-AN6	06
DUC Ø17 AN8 pawn	X	PI-DUC17-AN8	
DUC AN7 secure washer	X	RS-AN7	
7/16" UNF 3" fixing screw	X	TH 7/16 UNF 3"	
Accessories : Mounting Plate & Spinners			
5-blade Mounting Plate Ø290mm [SAE2-AN6]	X	P-290_5-SAE2AN6	01
5-blade Mounting Plate Ø300mm [SAE2-AN6]	X	P-300_5-SAE2AN6	
5-blade Mounting Plate Ø340mm [SAE2-AN6]	X	P-340_5-SAE2AN6	
5-blade Mounting Plate Ø290mm [SAE2-AN8]	X	P-290_5-SAE2AN8	
5-blade Mounting Plate Ø300mm [SAE2-AN8]	X	P-300_5-SAE2AN8	
5-blade Mounting Plate Ø340mm [SAE2-AN8]	X	P-340_5-SAE2AN8	
5-blade white spinner Ø290mm	X	C-290_5	
5-blade white spinner Ø300mm	X	C-300_5	
5-blade white spinner Ø340mm	X	C-340_5	
M5x16mm spinner screw	X	V-P5-16	10
AN525-10R8 screw	X	AN525-10R8	
Propeller fixing bolt			
AN6-64 bolt kit	X	V-AN6-64	06
AN8-52 bolt kit	X	V-AN8-52	
AN8-60 bolt kit	X	V-AN8-60	
AN8-64 bolt kit	X	V-AN8-64	

4.4. List of required tools

SAE2 AN6 aircraft mounting
M8 Torque Hex key (Tightening: 25 to 30Nm) 13mm Flat Key 3/8" Torque Wrench (Tightening range: 30 to 80 Nm) Inclinometer (pitch adjusting tool) Plastic mallet Torque Screwdriver (Tightening: 4 Nm)
SAE2 AN7 aircraft mounting
M8 Torque Hex key (Tightening: 25 to 30Nm) 13mm Flat Key 7/16" Torque Wrench (Tightening range: 30 to 80 Nm) 3/8" Torque Wrench (Tightening range: 30 to 80 Nm) Inclinometer (pitch adjusting tool) Plastic mallet Torque Screwdriver (Tightening: 4 Nm)
SAE2 AN8 aircraft mounting
M8 Torque Hex key (Tightening: 25 to 30Nm) 13mm Flat Key 1/2" Torque Wrench (Tightening range: 30 to 80 Nm) Inclinometer (pitch adjusting tool) Plastic mallet Torque Screwdriver (Tightening: 4 Nm)

5. Assembly Instruction of the propeller

The assembly of the FLAIR-2 propellers is shown below. It is recommended to assemble the propeller on a worktable before installing it on the plane.

For further information, contact the DUC Propellers Company.

5.1. Assembly of the propeller

A « **Propeller Record Sheet** » will be performed to monitor the propeller. The Parts Number and serial numbers of the issued propeller components are listed on this record sheet.

STEP 1.

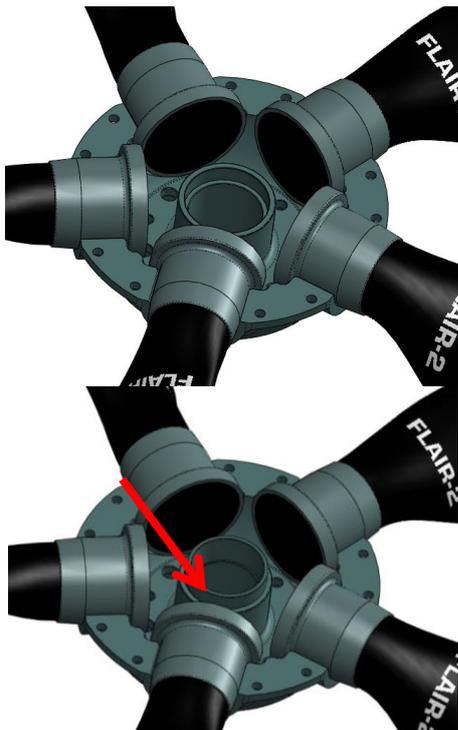


Place the **rear half-hub** on a worktable.

Be careful not to invert with the front hub half.

Depending on your installation, the rear half-hub is one mounted on the propeller-shaft of the engine or on a spacer. The holes the rear half-hub are larger than the holes of the front half-hub.

STEP 2.



Positioning the blades in their hub slots by placing them outwards.

The 5 blade of the propeller were paired together in DUC Propellers company before the shipment.

Once the blades are positioned, insert the centering cylinder at the center of the half-hub.

Orient the **DUC** logo facing you.

STEP 3.



Place the **front half-hub** (with small hole) on the set to fit with the blade roots.

STEP 4.



From the front hub, install the 10 screws and washers for hub assembly. At the rear, place washers and lock nuts.

Perform initial moderate tightening.

5.2. Installation on aircraft

As presented in section 4.1 **Mounting configuration of the FLAIR-2**, several mounting are possible:

1. Installing **directly on propeller-shaft** of the engine
2. Use a **spacer** for spacing propeller from the propeller-shaft
3. Use of an **adaptor spacer** to adapt the fixing points of the engine flange to those of the propeller

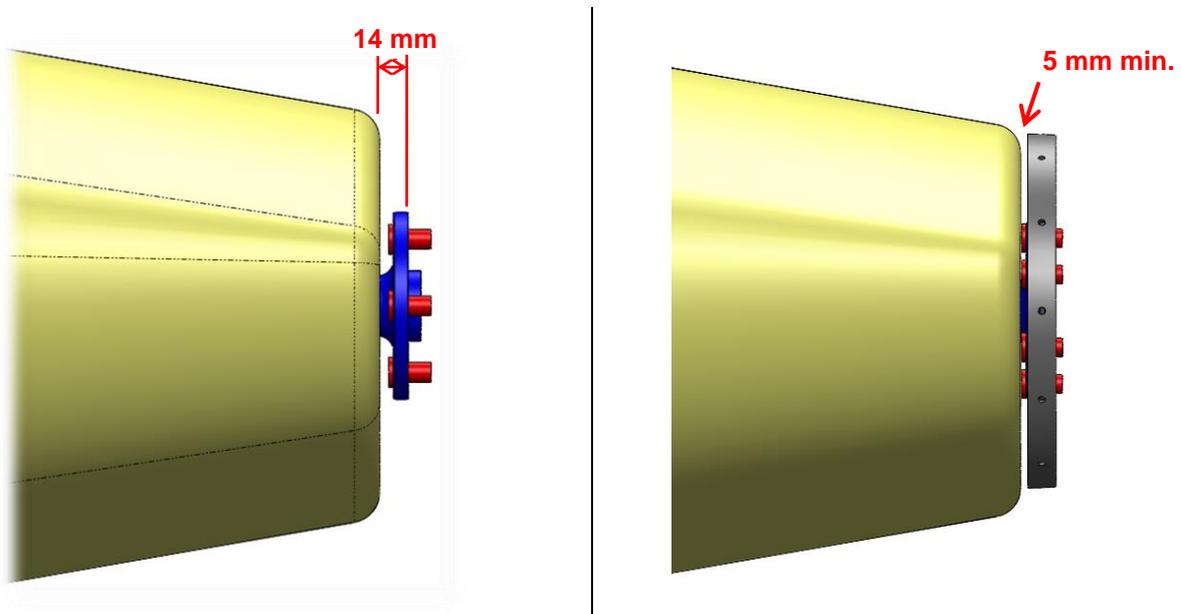
5.2.1. Installation directly on aircraft

Direct installation of the FLAIR-2 propeller is possible **if the following conditions are met:**

- ✓ Engine Propeller-shaft type SAE2 AN6 / AN8 (6 bushes Ø19mm on P.C.D Ø120.65mm / Ø4-3/4")
- ✓ Engine propeller-shaft out of the engine hood of 14mm for the mounting of the DUC spinner
- ✓ Installation of **DUC** spinner Ø290mm, Ø Ø300mm or Ø340mm according to the section **5.4 Case of installation of the FLAIR-2 propeller and DUC spinner**

If needed, see the section **9.1 Dimension** .

Note: All engines having a propeller-shaft with a P.C.D. Ø120.65mm/Ø4-3/4" and threaded pins AN6 or AN8 can install the FLAIR-2 propeller directly. **The holes of the rear half-hub must be adapted to suit with the indexing dowels of the propeller-shaft.** For further information, contact the DUC Propellers.

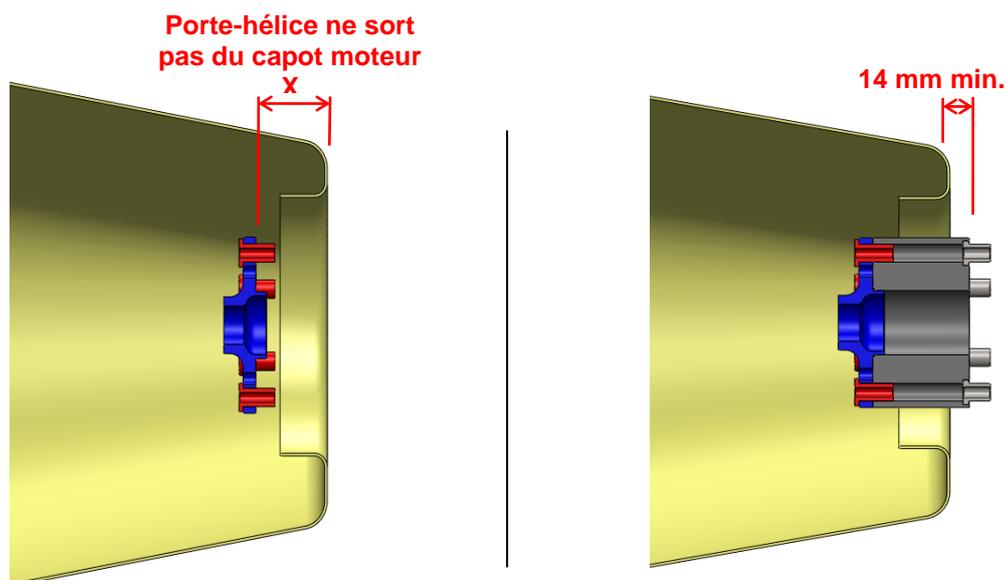


5.2.2. Use of a spacer

The spacer is necessary in the following case where the engine propeller holder is located inside the engine cover or does not exceed 14mm minimum (or 10mm with Ø340mm spinner).

Determination of spacer spacer length:

Measure the **distance X** between the propeller holder and the limit of the engine cover, then **add 14mm** (or 10mm with Ø340mm spinner).



Intermediate spacer available:

Engine	Model	P/N	Length (XX)
Lycoming O-360	Spacer	EI-SAE2AN8-XX	20

→ The length of the screws required to fix the propeller is defined by the DUC Hélices design office. This is also the case when there is a need to install a spacer.

→ Tightening screws: see step 7 of § 5.3. Propeller adjustment & Finalization of assembly.

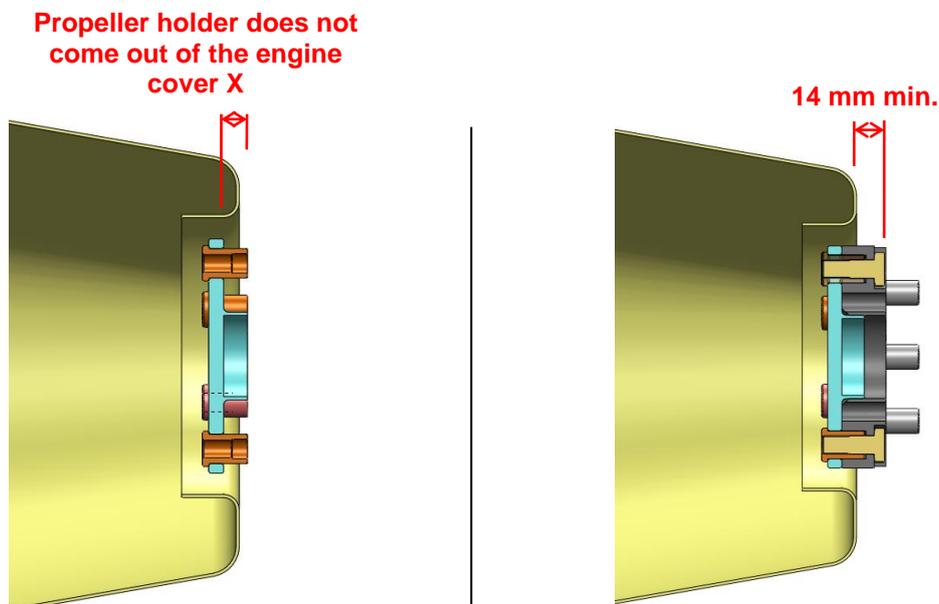
→ The spacers are delivered with the pawns that go to the side of the propeller.

5.2.3. Use of an adaptor spacer

An adaptor spacer is necessary in the case where the engine propeller holder has AN7 pawns (7/16 ")

Determination of spacer length:

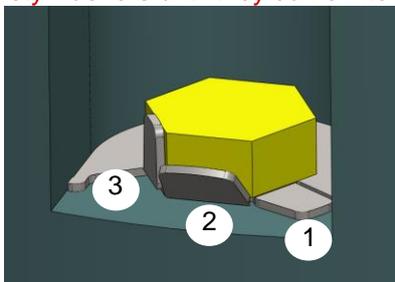
Measure the **distance X** between the propeller holder and the limit of the engine cover, then **add 14mm**.



Adaptor spacer available:

Engine	Model	P/N	Lenght (XX)
Lycoming O-320 (pawns 7/16")	SAE2AN7-SAE2AN6 adaptor spacer	E-S2A7-S2A6-XX	90,100 mm

- The spacers are delivered with the pawns that go to the side of the propeller.
- The length of the screws required to fix the propeller is defined by the DUC Hélices design office. This is also the case when there is a need to install an adaptation spacer.
- Installation of brake plates under the heads of the spacer fixing bolts to prevent them from loosening.
- Tightening screws: see step 7 of § 5.3. Propeller adjustment & Finalization of assembly.
- Complete folding of the 3 tabs of the safety washers until they come into contact with the flat of the screw.



5.3. Setting of the propeller & Finalization of the installation



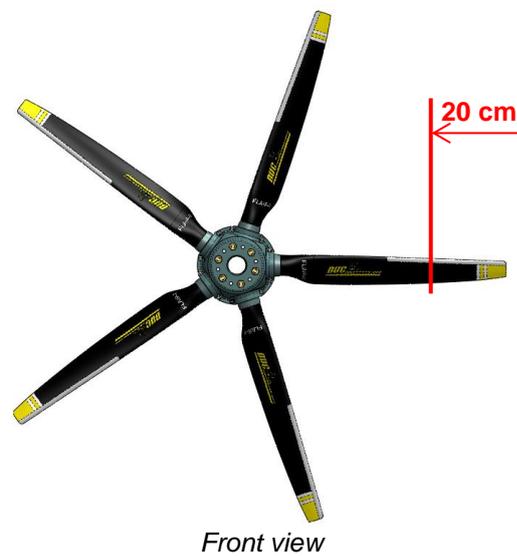
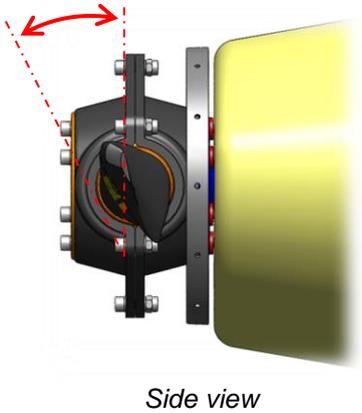
At this point, the propeller is installed on your aircraft with the spinner mounting plate.

If the propeller is already **assembled and the blades angle set**, go directly **STEP 7**.

Otherwise, follow all the steps below to **adjust the pitch angle** before the final tightening of the screw.

A reminder of the definition of the airfoil and its vocabulary is presented in annex **9.2.Airfoil**.

STEP 1.

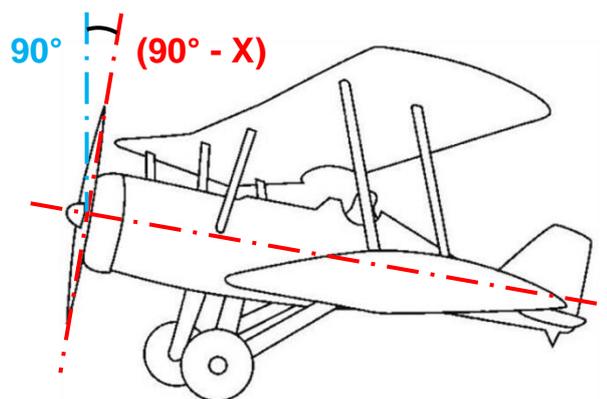
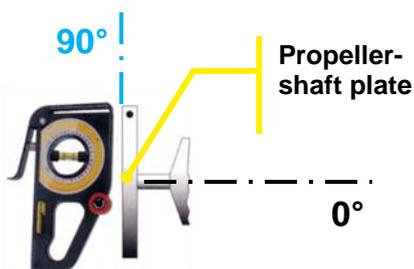


For the setting, the concerned blade must be **place in horizontal position**.

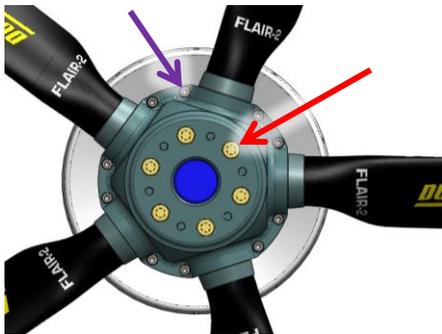
The setting is done with the adjusting tool flatten against the intrados (leading edge up) at **20 cm from the blade tip**. The angle of attack is formed by the **vertical and the intrados of the blade**.

To do this, place your aircraft horizontally, so that the propeller shaft is perfectly vertical.

Check with the level of the adjustment tool (measured value = **90°**). **If unable to change the longitudinal axis of the aircraft, determine the value of the X angle propeller shaft plate to subtract this value from the blade angle to be adjusted.**

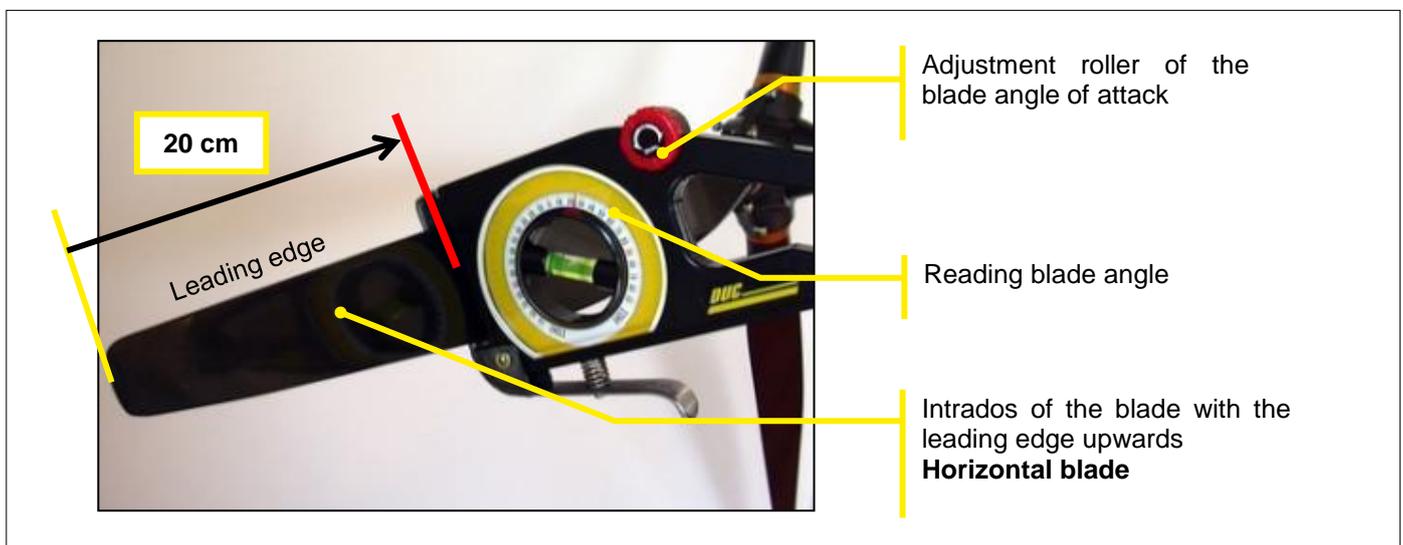


STEP 2.



Slightly untighten the **propeller fixing screws** and the **hub assembly screw**.

STEP 3.



Horizontal blade, leading edge upward, place the adjustment tool at 20 cm from the tip of the blade, intrados side (flat), handle down.

STEP 4.

Set the desired value of the adjustment tool.

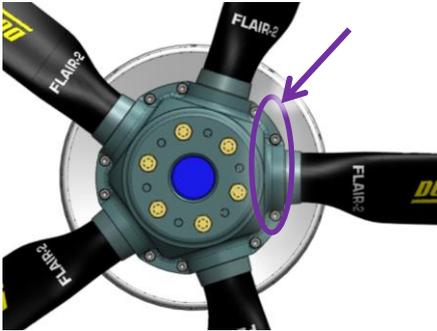
Caution to apply the value X if a correction of the aircraft plan was needed.

STEP 5.

Correct the position of the bubble on the adjustment tool by rotating the blade in the hub. To do this, using a mallet, lightly tap on the root of the blade in the desired direction.

Do not apply pressure near the trailing edge, thinner area.

STEP 6.

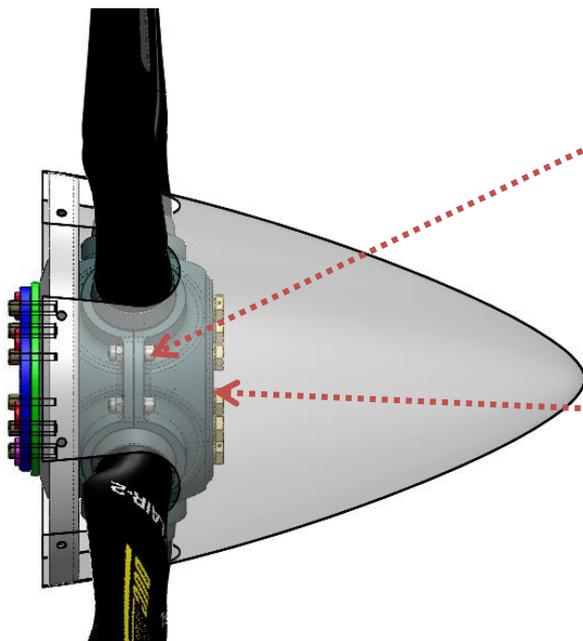


Once the desired pitch angle obtained, slightly tighten the **hub assembly screws**, those around the foot blade and then perform the same operation on each of the other blades.

STEP 7.

Remove the adjusting tool from the propeller then perform a **first tightening of the bolts manually**.

Then, carry out a **progressive tightening** of all the screws by **applying the correct torque** with a torque wrench:



Screw assembly of the 5-blade hub :

TIGHTENING TORQUE
2,5 Kg/m 25 N.m

Propeller fixing screws:

DUC AN6 or AN8 Fixing screws and Washers.
Use with threaded dowels on the Lycoming O-360 engine propeller-shaft.

TIGHTENING TORQUE
3 kg/m 30 N.m (AN6 | 3/8")
4,5 kg/m 45 N.m (AN8 | 1/2")

Fixing screw Adaptation spacer:

AN7 screw
(screw length adapted according to length of spacer and starter ring on the propeller)

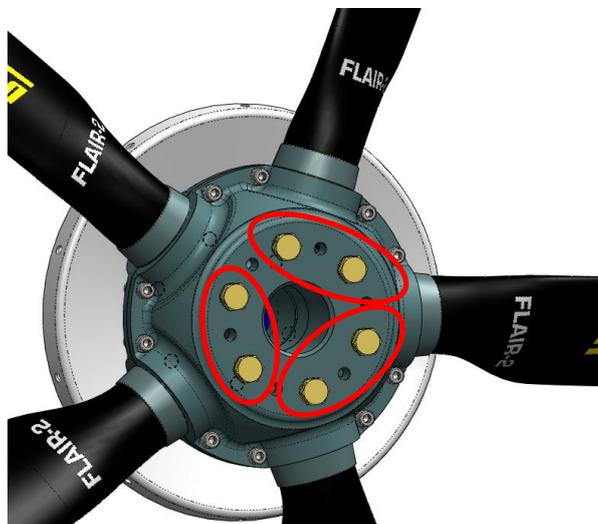
TIGHTENING TORQUE
ADAPTOR SPACER
AN7 (7/16"): 3.5 Kg/m 35N.m



IMPORTANT

After a 1 hour operation following the installation or modification of the assembly, recheck the assembly of your propeller according the instructions manual using appropriate tools (tightening torque, pitch angle...).

STEP 8.



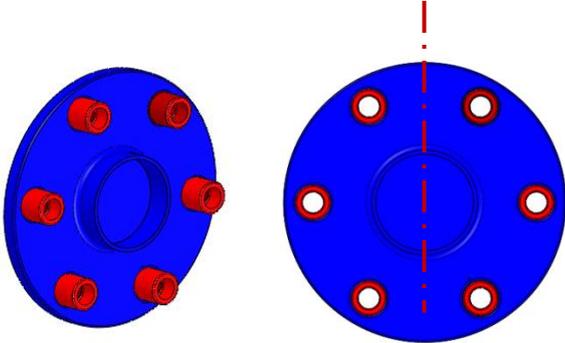
After a final check (position and orientation of parts, clamps, ...), apply the wire locking on all the heads of the six fixing screws according to the usual conventions, 2 screws at a time as follows:



5.4. Case of installation of the FLAIR-2 propeller and DUC spinner

This section present the particular case of installation of the FLAIR-2 propeller on the Lycoming O-360 engine propeller-shaft and the mounting of the DUC spinner Ø290, Ø300 and Ø340mm.

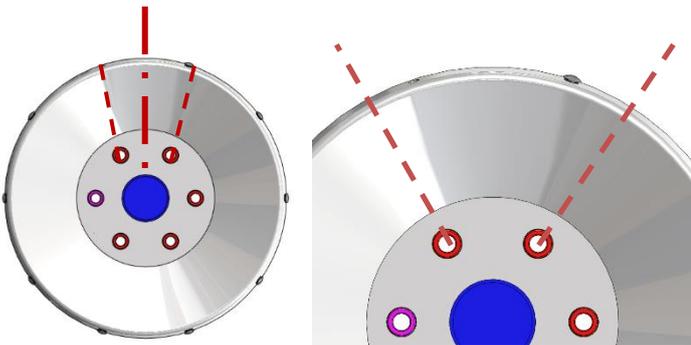
STEP 1.



Position the propeller-shaft of your aircraft as shown against.

The flange of the starter is not represented here against but must be present.

STEP 2.

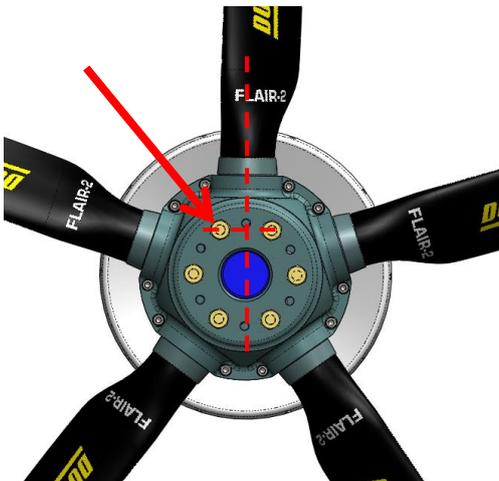


Placement of the mounting plate of spinner Ø290, 300 and 340mm according to the previous holes for the indexing dowels.

Important:

The orientation of the mounting plate depends of the fixing holes of the spinner. Please, respect the following positioning as shown against. **Be careful to keep it in position.**

STEP 4.



Then, place the propeller as shown against.

At this step, the angle pitch of blades must be adjusted and the hub assembly screws are tightened with the good torque. (See paragraph above)

Important:

The blade, which is aligned between two fixing holes, must be positioned **upwards** for the case of an AN8 assembly. In the case of AN6 assemblies, the orientation is offset by 30°.

Fix the propeller with the adequate screws and the recommended torque. (→ see §5.3)

STEP 5.



Now, install the spinner respecting the alignment indicators which are present on the mounting plate and the spinner.

Apply the tightening torque of **screw of spinner to 4Nm (0.4kg/m)** with the appropriate tool.



At this point, the FLAIR-2 propeller is ready for first tests.
The user must perform the appropriate regulations procedures to change the propeller in accordance with applicable regulations of the aircraft.

6. Precautions

PRECAUTIONS

If you notice any abnormal installation or operation, do not undertake the flight and immediately contact the DUC Propellers Company. A Claim Form is available in the Appendix of this document.



Being aware of potential risks during assembly and initial testing of the propeller. Stay focused, attentive and vigilant to your environment. Recheck several times points to be observed. Maintaining high safety clearance during the set operation.

The products of the DUC Propellers company must be installed and used according to the instruction manuals provided. No modification can be made without the agreement of DUC Propellers company. The non-compliance of these data assumes no responsibility for the DUC Hélices company and makes out the warranty of the considered products.

(See section 8. **General terms of sale**).

7. Maintain of Airworthiness

7.1. Airworthiness Limitations

Nowadays, the limited lifetime of the 5-blade FLAIR-2 propeller is **2 000 hours**.

However, a program is set up by DUC Propellers to extend this lifetime.

This paragraph « Airworthiness Limitations » is approved by EASA according to Part 21.A.31(a) and CS-P 30(b) requirements.

All changes of this paragraph or documents related at this paragraph shall be resubmitted to EASA for approval.

For more information, contact DUC Propellers.

7.2. Planning of propeller verification

Type of Inspection	Frequency
Tightening	After the 1 st functioning in flight
Regular	Each pre-flight
General	Every 100 hours ou annually
TBO	All 2 000 hours Refer to Manual DH_TBO_BE_02 – TBO Instruction Manual

7.3. Regular verification (by the user)

For a safety use of the FLAIR-2 propeller, it is necessary that the user performs regular maintenance to detect any abnormalities.

Frequency of checking : Each pre-flight

Checkpointq	Control Methods	Location	Possible Problem	Action
Propeller Fixation	Maintain the tip of one of blades and shake it firmly	Fixation screws of the propeller	Apparition of play at the level of propeller fixation	Stop the use of the propeller and apply the following correctives actions : Checking the state of the screws. If necessary, change of the fixing screws of the propeller & verification of the complete assembly to avoid the problem.
Degradation of propeller	Visually check the set of the propeller without disassembly (blade root, Inconel leading edge, blade surface, spinner, hub...)	Blade root ring	Strong marking/ Scratches on the blade root ring	Stop the use of the blade.* Change the blade.
			Light marking/Scratches on the blade root ring	If surface marking without deformation, continue use.
			Crack	Stop the use of the blade.* Change the blade.
		Edge Inconel®	Peeling of	Stop the use of the blade.* Change the blade.
			Important Impact : Deep scratches, breakage, deformation (see paragraph 7.4)	Stop the use of the blade.* Change the blade.
			Light Impact : Non-deep scratch (see paragraph 7.4)	No mechanical risk. Appearance problem. continue use
		Blade	Important Impact : breakage, profound impact / local delamination (see paragraph 7.4)	Stop the use of the blade.* Change the blade
			Light Impact : Non-profound impact, light scratch, little impact (see paragraph 7.4)	No major risk.
Loss of adhesive colored blade	No mechanical risk. Appearance problem. continue use			
Spinner Fixation	Visually check the hold of the spinner and its fixation screws	Fixation screws of the spinner	Apparition of play at the level of spinner	Check the screws. The change depending on the state. Tighten the screws to a torque. A marking paint can be made between each screw and the cone to have a visual indication of the tightness of the screws.

**Note : All the blade, which compose the propeller, are balanced together. When a blade is changed, the blade must be balanced to keep this balance. For that, thanks to contact DUC Propellers Company.*

General inspection

A general verification by the user or an aeronautics workshop must be made at lower frequency. During this inspection, **clean the propeller.**

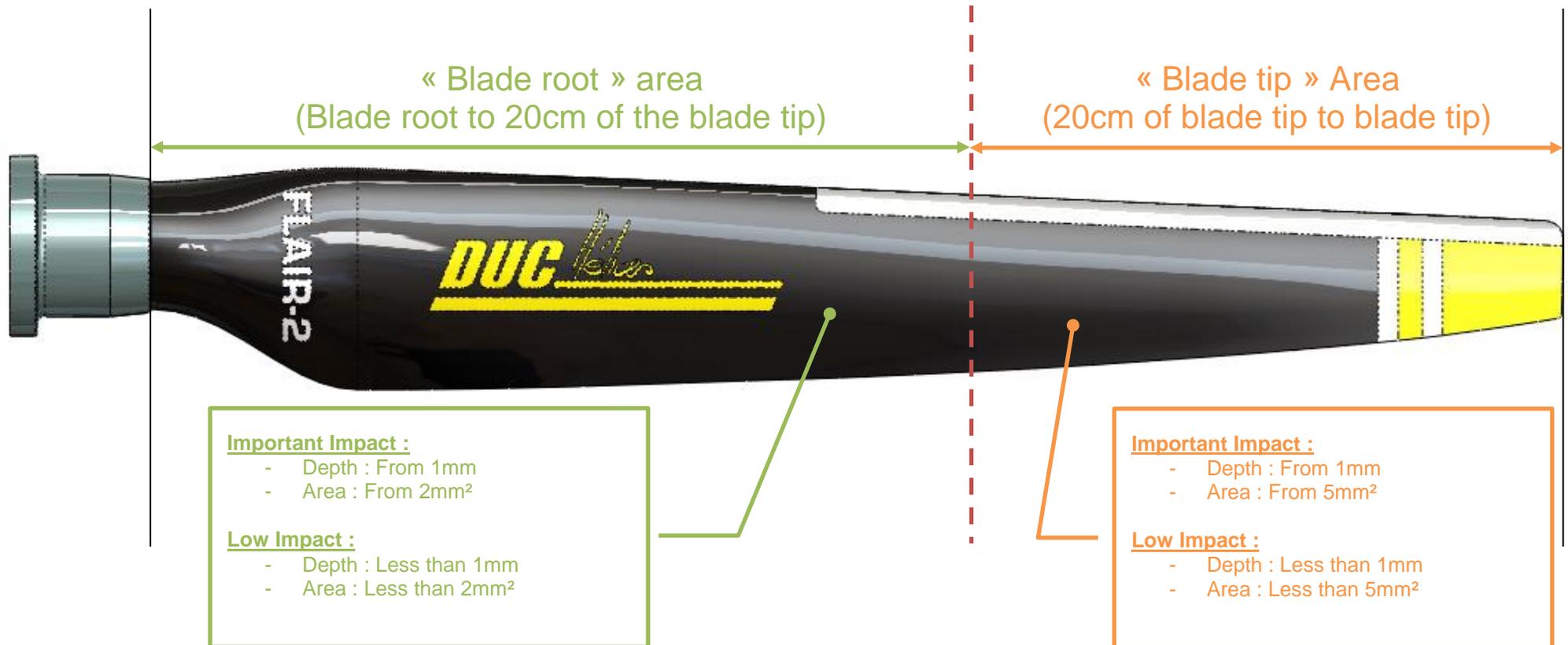
Frequency of checking : 100 hours or annually

Checkpoint	Control Method	Location	Possible Problem	Action
Propeller Fixation	After the disassembly of the spinner, check the tightening of the fixing screws of the propeller with a torque wrench.	Fixation screws of the propeller, of the hub	Apparition of play at the level of propeller fixation	Stop the use of the propeller and apply the following correctives actions : Checking the state of the screws. If necessary, change of the fixing screws of the propeller & verification of the complete assembly to avoid the problem.. Tighten to a torque according to the instruction of the assembly (STEP 7 of the section 5.3 Setting of the propeller & Finalization of the installation).
Degradation of propeller	Visually check the set of the propeller (blade root, Inconel leading edge, blade surface, spinner, hub...)	Blade root ring	Strong marking/ Scratches on the blade root ring	Stop the use of the blade.* Change the blade.
			Light marking/Scratches on the blade root ring	If surface marking without deformation, continue use.
			Crack	Stop the use of the blade.* Change the blade.
		Edge Inconel®	Peeling of	Stop the use of the blade.* Change the blade.
			Important Impact : Deep scratches, breakage, deformation (see paragraph 7.4)	Stop the use of the blade.* Change the blade.
			Light Impact : Non-deep scratch (see paragraph 7.4)	No mechanical risk. Appearance problem. continue use
		Pale	Important Impact : breakage, profound impact / local delamination (see paragraph 7.4)	Stop the use of the blade.* Change the blade.
			Light Impact : Non-profound impact, light scratch, little impact (see paragraph 7.4)	No major risk.
			Loss of adhesive colored blade	No mechanical risk. Appearance problem. continue use
		Complete Hub	Creek	Stop the use of the part. Change of the half-hub necessary
Surface depression	Stop the use of the part. Change of the half-hub necessary			
Vis assemblage Moyeu	Damaging Nylstop nut	Stop the use of the part. Change of the nut necessary		
Reassembly of the spinner	Visually check the hold of the spinner and its fixation screws	Fixation screws of the spinner	Apparition of play at the level of spinner	Check the screws. The change depending on the state. Tighten the screws to a torque. A marking paint can be made between each screw and the cone to have a visual indication of the tightness of the screws.

**Note : All the blade, which compose the propeller, are balanced together. When a blade is changed, the blade must be balanced to keep this balance. For that, thanks to contact DUC Propellers Company.*

7.4. Location Impact on the blade carbon structure

In case of doubt about the blade inspection, thanks to contact DUC Propellers Company.



8. General terms of sale

8.1. Ordering Procedure

Orders placed by fax, by phone or mail server engage the customer upon receipt by our Customer Service Order and the Regulations.

8.2. Delivery

DUC Propellers Company agrees to make every effort to deliver the order within the shortest time, and the receipt of the order together with the Regulation. The delivery times indicated on the order are only indicative and the possible delays do not entitle the buyer to cancel the sale, to refuse the goods or claim damages. Any claim for non-compliance or failure will be sent within one week following the date of receipt of order.

The DUC Propellers Company is released from its obligation to deliver for all fortuitous events or force majeure. As an indication, the total or partial strikes, floods, fires are cases of force majeure. The transfer of ownership of goods supplied or delivered is suspended until full payment of price by the customer and without affecting the transfer of risk.

8.3. Price

The DUC Propellers Company may change its prices at any time.

The customer agrees to pay the purchase price in effect at the time of order entry. Regulation Order is payable in advance in one payment when sending the DUC Propellers Company purchase order.

8.4. Right of withdrawal

Under Article L121-16 of the Consumer Code, the customer shall have seven clear days after the delivery of his order to return the products to the DUC Propellers Company for exchange or refund, without penalties except for the return costs. Returned products must not have suffered modification, damage consequence of shock or improper use and be packaged in original packaging. Good shipped with postage due will not be accepted.

8.5. Warranties

The DUC Propellers Company's products must be installed and used in accordance with instruction manuals provided. No changes can be made without the prior approval of the DUC Propellers Company. The failure of these data releases any liability of the DUC Propellers Company and makes non-warranty the considered products.

The user is still flying under its sole responsibility.

The legal guarantee of industrial products is six months or for the potential duration of the helix (depends on which engine it is installed) against defects and hidden defects. See the section **2. Applications** to determine the potential value of an hour's flight engine.

DUC Propellers Company guarantees its product defect under normal use in the manner described below: If the customer finds a defect, he must report it immediately to the DUC Propellers and features of one month after its purchase to return to society DUC Helices, all structural defects will snuff into account (except for damage result of incorrect operation, shock, injury, impairment or neglect, water or generally inappropriate use by the engine type, power, speed and gear). To qualify for this warranty, the customer must send at its expense within one month after its purchase to be returned to society with DUC Propellers delivery order attached to the product. In return, the DUC Propellers Company takes no responsibility for damage or loss during transit due to improper or inadequate packaging. The company DUC Propellers then returned at his expense to the customer at the address on the delivery note, an identical or equivalent.

In addition to these guarantees, the company DUC Propellers provides no other warranties.

8.6. Privacy Policy

All the data you entrust to us are able to process your orders. Under Law No. 78-17 of January 6, 1978 relating to data, files and freedoms you have with the customer service company DUC Propellers right to access, review, correct, correct and delete data you have provided.

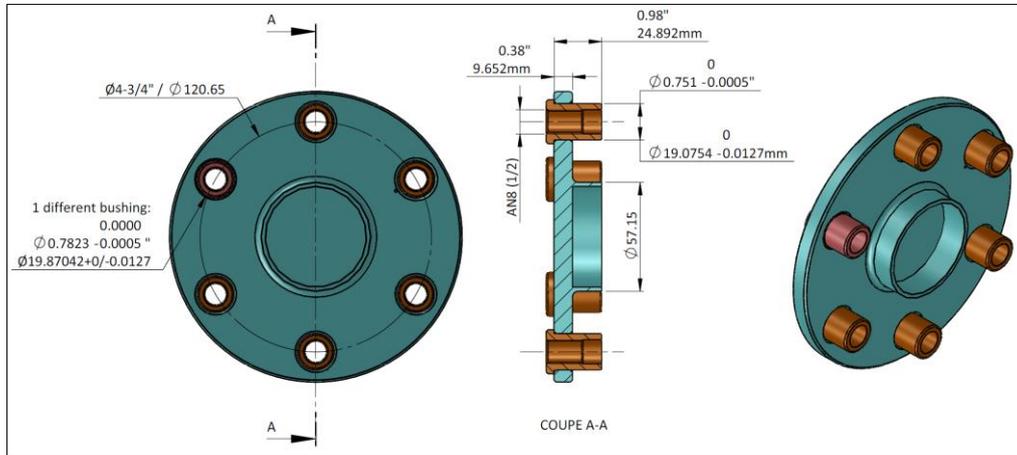
8.7. Litigation

Any order placed convincing the customer, without any restriction, the General Conditions of sale of the DUC Propellers Company. Any dispute concerning the sale (price, GTS, product ...) will be subject to French law before the Tribunal de Commerce de Lyon.

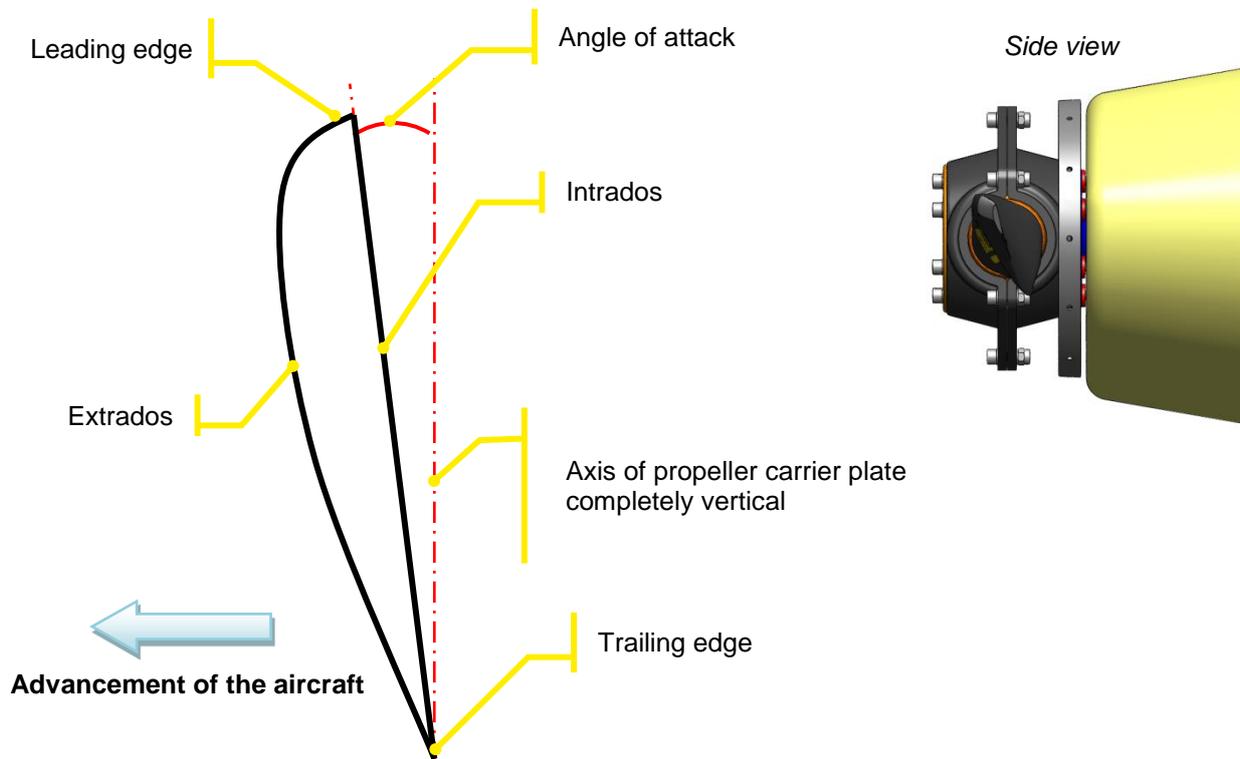
9. Attachements

9.1. Dimension of the engine propeller-shaft

9.1.1. Lycoming O-360-A3A engine propeller-shaft, type SAE 2



9.2. Airfoil



	Record Claim	Document : DH_QU_000_FOR_52_A
		Modified : 02/11/2016

Company/flightclub	
Name/Surname	
Town	
Phone/Mobile	
E-mail	
Adress	
Aircraft	
Engine	
Propeller	P/N Propeller : S/N Hub : S/N Blade :
Register	
Apply	<input type="checkbox"/> aircraft <input type="checkbox"/> glider tow <input type="checkbox"/> Other :

Claim	
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Date	
Signature	

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DUC Hélices Propellers

ISO 9001 : 2015
N° TC EASA : EASA P.038
N° Part 21G EASA : FR.21G.0273

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Entreprise certifiée
ISO 9001:2015

INFO
PILOT



Protect your propeller!

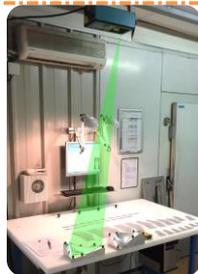
Neoprene cover – Commercial reference: 01-80-002

INFO
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Save money!

Degrease your propeller
REDUCE CONSUMPTION
by improving performance
Commercial reference: 01-80-003



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