FITI ECO COMPETITION IN-FLIGHT ADJUSTABLE PROPELLER

OPERATING INSTRUCTIONS AND TECHNICAL DESCRIPTION

In-flight adjustable two- and three-blade propellers
for sporting flying equipment.

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1. TECHNICAL DESCRIPTION

General

Fiti Eco Competition is an in-flight adjustable two- and three-blade propeller with composite blades.

The propellers are designed for specific engine and reducer types.

The propeller hub, which is divided into two parts, holds the steal shanks on the blade roots using the M6 screws.

The mechanism for adjusting the pitch of the blades is located in the upper part of the propeller hub. It is connected using pull rods with sleeves on each blade.

The pull rod for adjusting the pitch goes through the propeller hub and the reducer.

The propeller is delivered with a spinner, driver and fixing screws.

2. WARRANTY CONDITIONS

The manufacturer provides a warranty on the propeller for the duration of 200 flight hours (however, no more than 24 months after the date of purchase), subject to performing regular checks. The manufacturer accepts no liability for damages arising from usage on the engines not listed herein or from mistakes caused by incorrect mounting.

3. TECHNICAL SPECIFICATIONS

3.1 Engine types

The propellers are designed for the following engines:

ROTAX 912UL, ULS, iS SPORT
ROTAX 912 S
ROTAX 582 – C type reducer

Maximum rpm allowed
The maximum allowed rpm's for the Fiti Eco Competition in-flight adjustable propellers:

Two-blade prop	diameter 1600 mm	2500 rpm,
Two-blade prop	diameter 1650 mm	2500 rpm,
Two-blade prop	diameter 1710 mm	2500 rpm,
Three-blade prop	diameter 1580 mm	2500 rpm,
Three-blade prop	diameter 1600 mm	2500 rpm,
Three-blade prop	diameter 1710 mm	2500 rpm,

Type certificate:

ULL – 05/2004

3.2 Operating limits

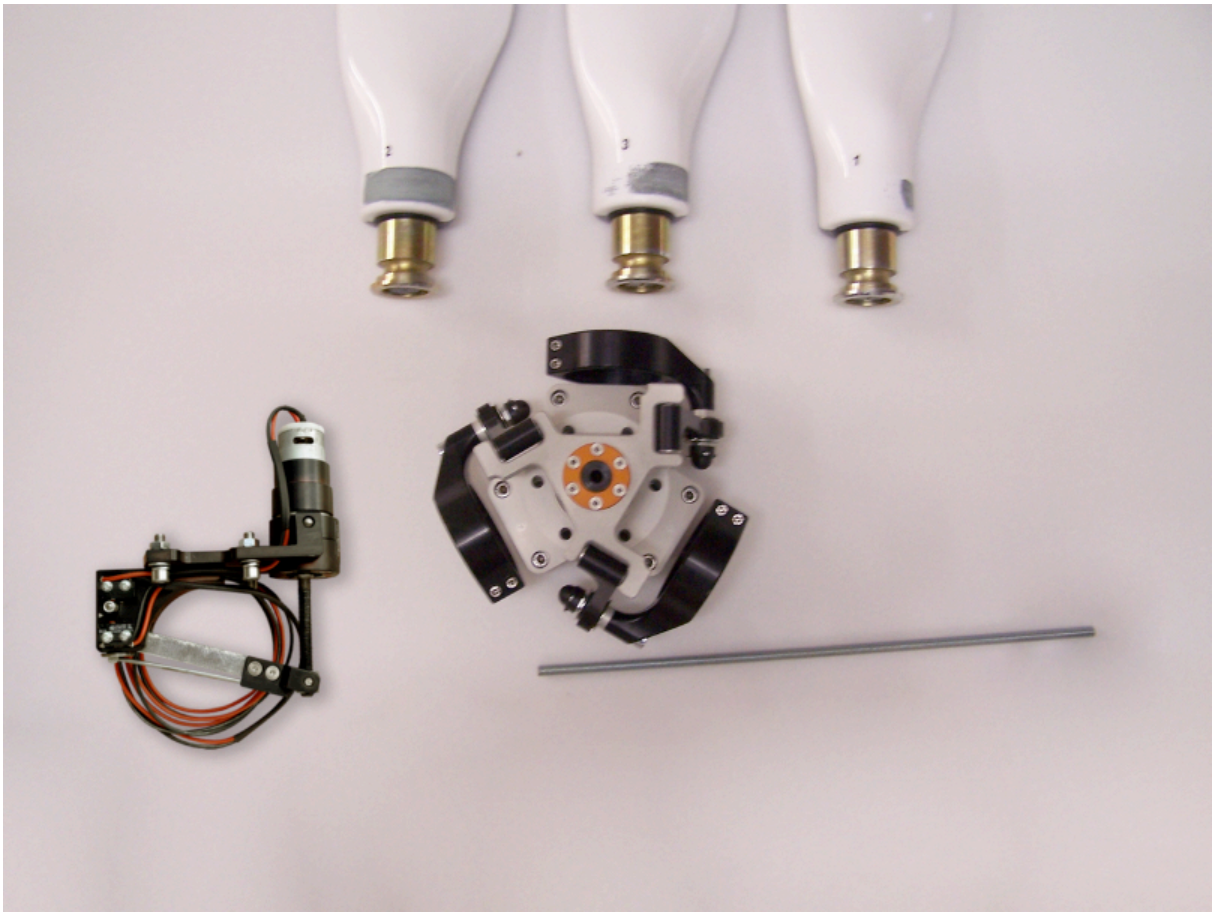
- Altitude 0 – 5000 m MSA
- Operating temperatures range from -25 °C to +35 °C
- Air humidity 30 – 98 % relative humidity
- Maximum load factor from -2.65 G to +5.3 G
- Operation under icing conditions prohibited

The propeller is a part of a sporting flying equipment whose operator solely is responsible for its usage.

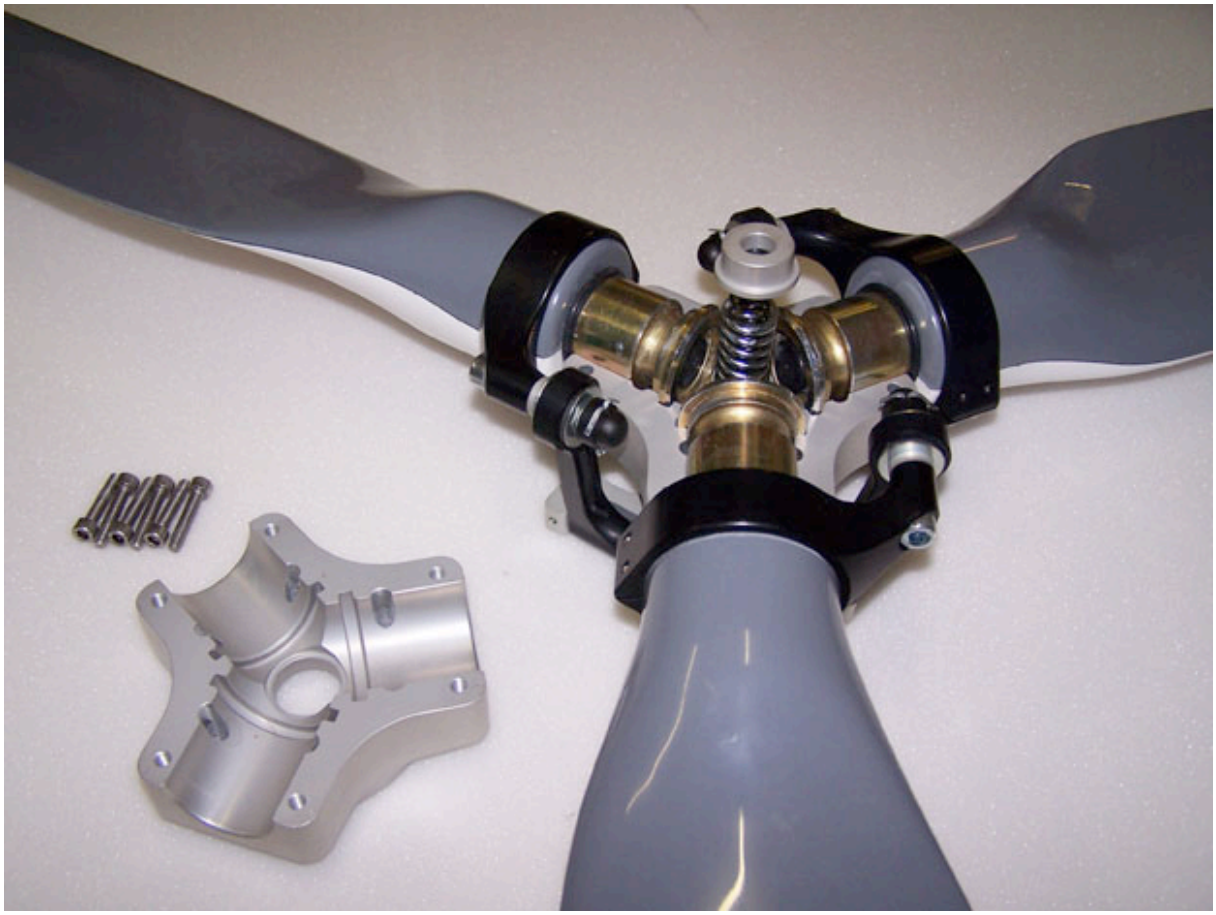
4. INSTALLATION INSTRUCTIONS

Description

- The propeller is delivered dismantled.



- Place each blade into the lower part of the propeller hub.

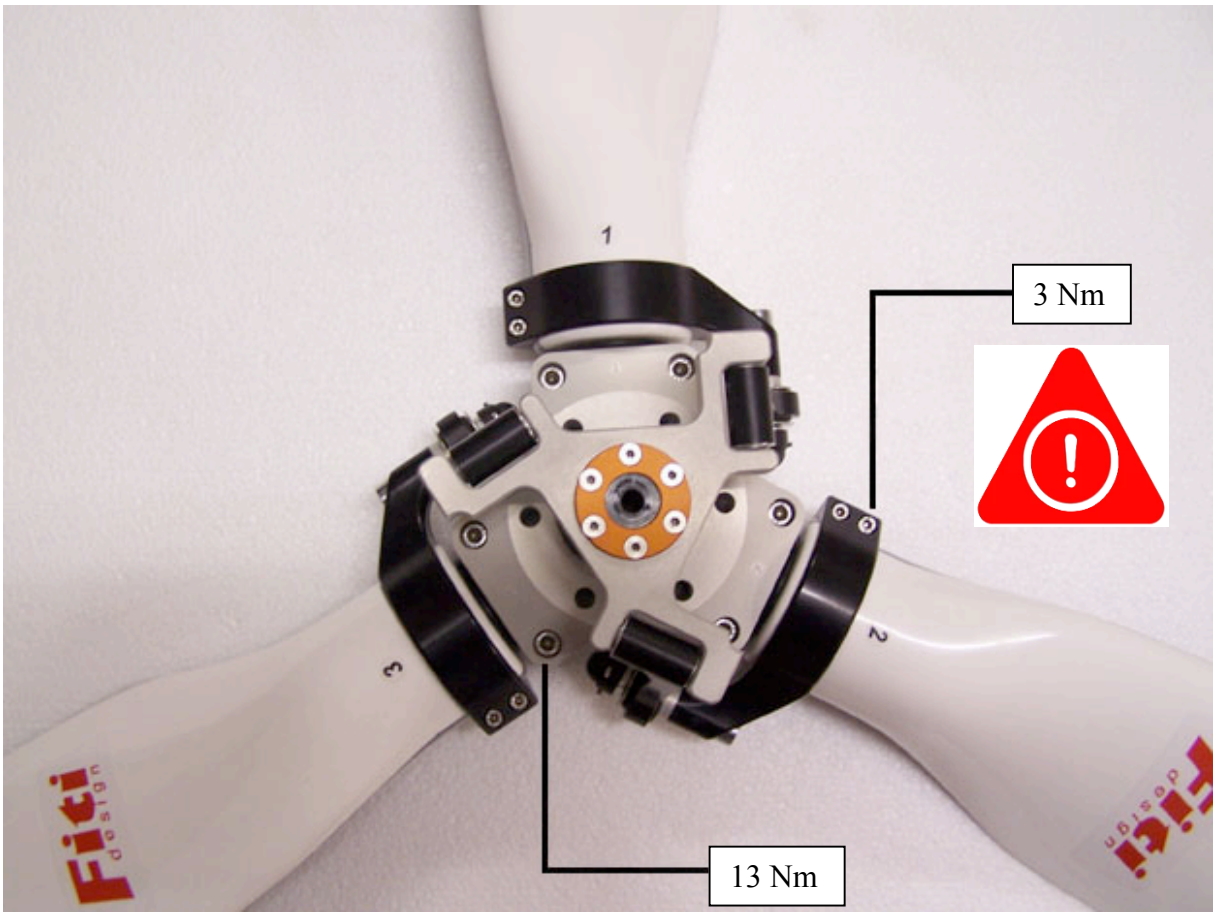


- The numbers on the blades MUST correspond to the numbers on the propeller hub.

Also note that the numbers are shown on both parts of the propeller hub.
The pull rods for adjusting the blade-pitch are marked by numbers too.
During the assembly, these numbers MUST correspond to each other.

Screw:

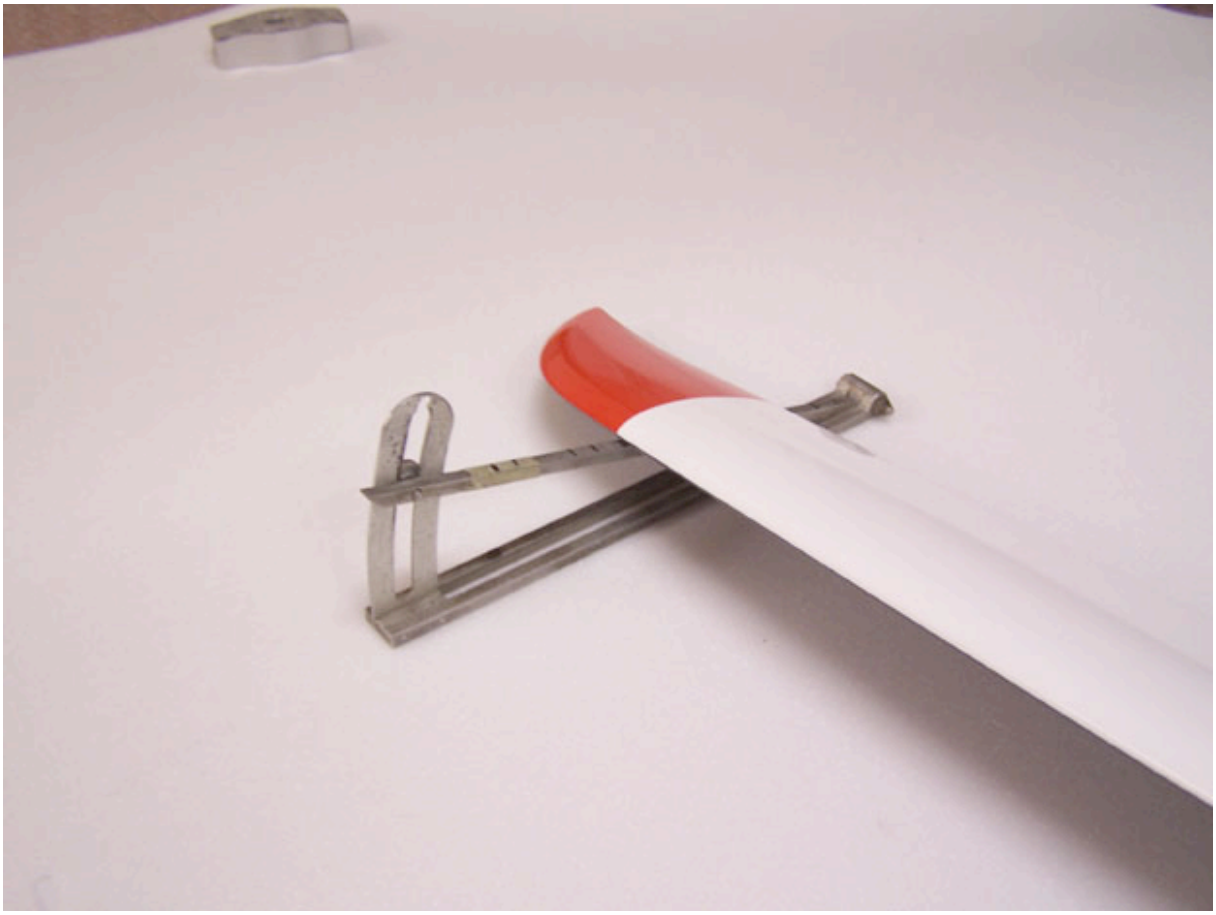
- Six M6 screws into the upper part of the propeller hub. Tighten the screws only lightly!



Place the assembled propeller on a level surface and adjust the pull rods and the adjusting sleeves of each blade.

The tightening torque of the bolts securing the propeller blade clamp, specified as 3 Nm, is extremely important and must always be strictly adhered to.If the torque is lower than 3 Nm, the clamp may not be sufficiently secured against rotation. Conversely, if the torque exceeds 3 Nm, irreversible damage to the clamp may occur, potentially leading to its failure.
When the clamp is properly tightened to the specified torque, a visible gap must exist between the mating surfaces of the clamp. A completely unacceptable condition is when the clamp is over-tightened and no visible gap exists between its mating surfaces.

The basic setting of the blade angle



Measuring is performed on the boundary of the red and white color.
Rotax 912 80 HP - 17º
Rotax 912 100 HP - 19º

Tight the M4 Allen screws lightly. Make sure that the root shank is correctly positioned in the lock of the propeller hub (by pulling each blade).

Tighten in successive steps:

- M6 screws – the propeller hub – tightening torque 13 Nm
- M4 screws – the adjusting sleeves – tightening torque 3 Nm

WARNING! Tighten the screws carefully. First apply less tightening torque.

APPLY THE LOCTITE 243 PREPARATION ON THE FULL LENGTH OF THE SCREW-THREAD BEFORE FIXING THE SCREWS OF THE SLEEVES.

Install the propeller to the engine using six M8 screws, tightening torque 25 Nm.

Mutually secure the screwheads using a binding wire.

When installing the propeller spinner, the driver must be inserted between the engine flange and the propeller head.

5. PROPELLER DISASSEMBLY

Description

Loosen the bolt of the middle operating pull rod.

Dismantle the propeller spinner and the security wire.

Loosen the fixing screws.

6. OPERATION

6.1 Description

During the operation, the propeller fixing on the aircraft must be checked regularly.
Remove the propeller spinner, remove the screw securing.
Check, how tightened the screws are – ALWAYS USE A TORQUE WRENCH!
Secure the screwheads using a new wire and install the propeller spinner back to its position.
Record the check to the “REPAIR RECORDS”, see below.
Perform the first check after 5 flight hours and then after 25 flight hours.
After the first 200 hours of operation or after 12 months of operation the propeller must be checked by the manufacturer.

The subsequent checks are performed by the owner (operator) after every 50 hours of operation. Service checks at producer are made every 12 months within 6 years or after 1200 flight hours, during general inspection. General inspection of the propeller is required after 1200 flight hours or 6 year.

6.2 Daily check

When starting or completing every flying day, perform the check of:

- the correct fixing of blades in the propeller hub;
- the entering edge and the trailing edge for any damage (cracks, unstuck parts);
- the cleanliness of each blade (polluted by insects) and the overall condition of the surface.

CAUTION

When moving the aircraft, the propeller must be held on the blade roots. Moving the aircraft holding the pitch-adjusting pull rods or the blade ends is prohibited!

7. REPAIRS

General

The owner (operator) may repair only minor surface damages on the blades, no deeper than 0.4 mm.
The area to be repaired must not exceed 10.5 sq.mm.
Other repairs can be performed by the manufacturer only. After such a repair, the manufacturer will correct the balance of the propeller.

7.1 Small repair - instructions

1. Roughen the area surrounding the damage by a sandpaper (grade 120).
2. Remove any grease from the damaged area using acetone.
3. Use a putty knife for filling the damaged area by a two-part polyester putty. The ambient temperature must be from 20 to 25 °C.
4. Let the putty harden for about 1 hour.
5. Then use a sandpaper (grade 300) to grind the putty to the required shape.
6. Finally polish the repaired area using a sandpaper grade 500 – 1000 and apply some putty in the form of aerosol.

The type and description of any repair must be recorded by the owner (operator) into the propeller “REPAIR RECORDS”.

8. MAINTENANCE AND REPAIR RECORDS

General

Claims for maintenance of props are minimal, as it only consists of regular inspections and checks.
1 - 50 hours after the inspection carried out by the owner itself by removing the propeller cone, and drop the appropriate bolt torque under section 4 (installation).
2 - Control by the manufacturer each year or 200 hours.
Clean the surface of the propeller perform lukewarm water with the addition of non-aggressive detergent.

9. RECORDS CONCERNING INSTALLATION AND REGULAR CHECKS

Date	Description	Signature

10. SERVICE AND REPAIR RECORDS

Date	Description	Signature