	<b>SERVICE BULLETIN</b>	
	<b>Flight Design GmbH</b> Sielminger Str. 65 D-70771 L.-Echterdingen Tel +49 (0)711 90287-0 Fax +49 (0)711 90287-99 E-Mail: <a href="mailto:info@flightdesign.com">info@flightdesign.com</a>	<b>SB-ASTM-CT__-02; SB-ASTM-CT2k-03;          SB-ASTM-CTSW-05          Revision 1</b>
		Date of Initial Publication: <b>15-Oct-2008</b> Publication Date of this Revision: <b>15-Oct-2008</b>

## SERVICE BULLETIN

### Inspection of Neuform 3-Bladed Variable Pitch Propeller Installation

**SB-ASTM-CT\_\_-02;  
 SB-ASTM-CT2k-03;  
 SB-ASTM-CTSW-05**

#### 1 Planning Information

##### 1.1 Affected Aircraft

Type: CT  
 Model: CT, CT2k, CTSW  
 Serial Number: All serial numbers  
 Applicable Countries: All Countries where ASTM standards are in effect

##### 1.2 Concurrent Documents

None

##### 1.3 Reason

Re- issue of existing document in order to implement it to the new Service document numbering system

##### 1.4 Subject

All information see paragraph 3

##### 1.5 Compliance

All information see paragraph 3

##### 1.6 Personnel Qualifications


All information see paragraph 3

##### 1.7 Approval

All information see paragraph 3

##### 1.8 Weight and Center of Gravity

All information see paragraph 3

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### 1.9 References

All information see paragraph 3

### 1.10 Superseded Documents

Technical Advice No. 15

### 1.11 Contact Details

For further information or to report any Safety of Flight or Service Difficulty issues contact your Distributor responsible for your country.

Specific contact in USA:

Flight Design USA  
 P.O. Box 325 South Woodstock, CT 06267  
 Tel: 860 963 7272 / Fax: 860 963 7152  
 Web: [www.flightdesignUSA.com](http://www.flightdesignUSA.com)  
 E-Mail: [airworthiness@flightdesignUSA.com](mailto:airworthiness@flightdesignUSA.com)

For all other countries and in cases where the local distributor is not known or available contact Flight Design GmbH directly.

## 2 Resources

### 2.1 Materials

All information see paragraph 3

### 2.2 Manpower


All information see paragraph 3

### 2.3 Cost

All information see paragraph 3

## 3 Instructions

The following is the 1:1 copy of the existing document following the old numbering system.

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## 1 Planning Information

### 1.1 Affected Types

Type:	CT
Model:	CT, CT2k, CTSW, CTSW2006, CTLS
Serial Number: V3-R2	All aircraft equipped with Neuform 3-Blade- Variable Pitch Propeller (Including factory installed or in-field installations). Exemptions: Propellers that already had this rework completed.

### 1.2 Further Applicable Documents

LTA-Nr. LSG 08-001; DAeC; 25.02.2008 (for Germany registered aircraft)

TM-08-01; Neuform; 22.02.2008 (English version at the date of publication of this TA not published; according to Neuform it will be published by Wednesday March 5th as download on their website)

AA-08-01; Neuform; 22.02.2008 (English version at the date of publication of this TA not published; according to Neuform it will be published by Wednesday March 5th as download on their website)


Neuform-3-Blatt-Verstellpropeller der Baureihe R2; Betriebshandbuch für Rotax 912, 912S, 914; Neuform; 15.02.2008 (English version at the date of publication of this TA not published; according to Neuform it will be published by Wednesday March 5th as download on their website)

### 1.3 Reason

Failure of cut-thread type propeller mounting bolts on the Neuform 3-blade variable pitch propeller on Rotax 912 series engines. According to our knowledge this has led to at least one propeller being lost in flight.

Following TM-08-01 Neuform failure of the bolts is seen as a result of insufficient fastening torque when mounting the propeller. According to independent investigations by Flight Design this failure is mainly supported by the attachment design that uses cut-thread type bolts. Cut threads provide significantly reduced strength compared to the typically used roll formed threads for bolts. This is due to the changes to the metallurgic structure (crystal cells are cut).

Neuform TM-08-01 concentrates on checking for insufficient tightening torque needed to re-tighten the bolts. The Neuform directions as written do not take into account the typically observed torque settlement effect due to typical elongation of the connection bolts. The possibility of over tightening of the bolts by too high a torque moments or impact damage due to propeller ground contact within the lifetime of the propeller are not covered by this check. Over torque is critical for cut threaded bolts. Neuform ground adjustable propellers use roll formed threads unlike the variable pitch propellers and are not subject to this TA.

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Failures like that experienced on the variable pitch propellers have never been reported according to our knowledge.

Flight Design therefore considers TM-08-01 Neuform as insufficient. Due to this reason Flight Design published this Technical Advice for all CT aircraft, exceeding TM-08-01 Neuform. This TA enhances TM-08-01 Neuform, it does not replace it.

#### 1.4 Subject

Compliance with TM-08-01 Neuform; 22.08.2008 and exchange of the bolts against new bolts with roll formed threads.

The prop has to be removed and must be sent to Neuform, or one of the workshops qualified by Neuform to perform tasks c) and d) of TM-08-01. According to the existing confirmation of Neuform in this step the bolts are exchanged against new bolts with roll formed threads.

Following compliance with TM-08-01 the propeller has to be reinstalled and adjusted following the applicable Neuform installation manual.

#### 1.5 Personnel Qualifications

Applicable national requirements for maintenance personnel qualifications have to be considered, as well as requirements regarding checking by authorized inspectors after compliance with this TA.

#### 1.6 Compliance

Prior to your next flight.

**Warning:** Non-compliance with this Advice can lead to damage to the aircraft as well as injury or even death for the Pilot, Passenger or people on the ground!

#### 1.7 Manpower

Removal of the propeller can be completed in 45 Minutes.

Compliance with TM-08-01 Neuform is within the responsibility of Neuform and can not be influenced by Flight Design.


Re-installation of the propeller can be done within 2 hours and includes propeller check run and, if required, re-adjustment of the propeller.

#### 1.8 Cost

Required components within TM-08-01 will be provided by Neuform free of charge. Neuform does not cover work time or shipping expenses.

#### 1.9 Mass (weight) data, Center of Gravity

There are no implications to aircraft mass (weight) or center of gravity of the aircraft.

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## 1.10 References

Neuform-3-Blatt-Verstellpropeller der Baureihe R2; Betriebshandbuch für Rotax 912, 912S, 914; Neuform; 15.02.2008 newly published and applicable for all propellers new and in service with immediate effectivity. (English version at the date of publication of this TA not published; according to Neuform it will be published by Wednesday March 5th as download on their website.) Existing manuals have to be replaced, old manuals have to be marked clearly visible as „invalid“.

Removal and re-installation of the propeller have to be marked and signed by the mechanic within the CT Aircraft Logbook.

Compliance of this TA has to be noted and signed within the CT aircraft Logbook.

Compliance of TM-08-01 Neuform has to be noted and signed within the CT Aircraft Logbook.

Feedback template LTA-Nr. LSG 08-001; DAeC; 25.02.2008 has to be filled and returned (for Germany registered aircraft only).

Feedback as in the Appendix 3.1 of this TA has to be returned to Flight Design upon completion of this TA.

## 2 **Procedure / Conduct**

### 2.1 Removal of the Propeller


Before taking off the spinner, mark the position of Spinner back plate and spinner in reference to the propeller shaft with a marker. When the spinner cap is taken off, mark the propeller hub rear end front half with reference to the propeller back plate. Also mark the position of each individual blade with reference to the front propeller hub half. This information is needed to re-install the propeller exactly in the same arrangement. This will help to achieve good propeller balance results.

Removal of the propeller is done following the actual Neuform Installation and Maintenance Manual.

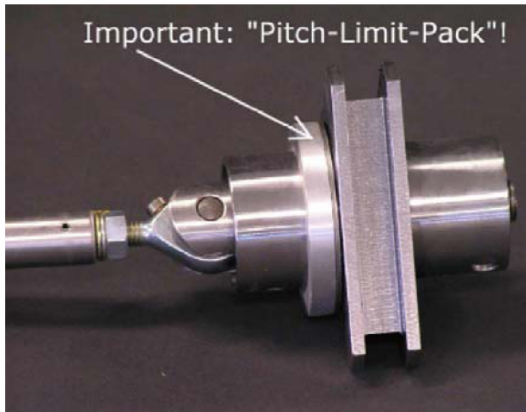
Adjustment of the propeller is done by adjustment of the actuation mechanism located behind / above the propeller gearbox. To achieve identical adjustment of the propeller after conduct of the TA and TM, the following two points have to be considered:

- The actuation mechanism, including the swivel head joints, must not be misadjusted at all. It is highly recommended to mark the position of the swivel head joints including nuts with paint.



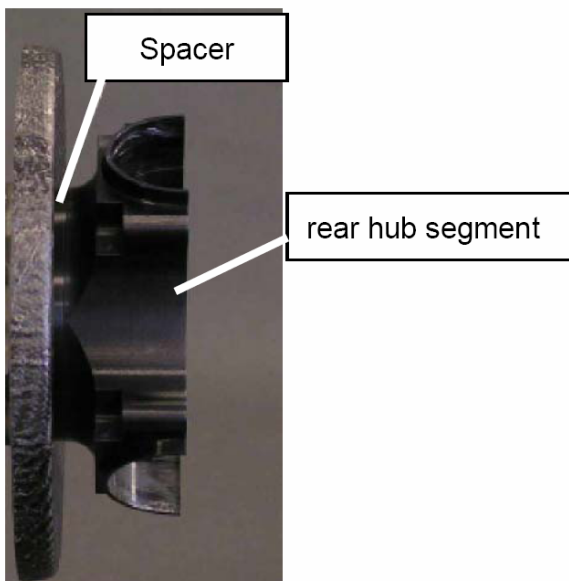
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- The pitch limiter package within the actuation rod may not be altered.



## 2.2 Conduct of TM-08-01 Neuform


To conduct TM-08-01 Neuform it is sufficient to send the rear hub segment and the spacer to Neuform or to one of the workshops qualified by Neuform to perform TM-08-01.



## 2.3 Re-mounting of the Propeller

Re-mounting of the propeller is done following the actual Neuform Installation and Maintenance Manual.

When re-installing the propeller put all components in the same position with reference to the propeller shaft. To do so use the markings set under 2.1. This way the best result for balancing of the propeller can be achieved.

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## 2.4 Test Run

After re-mounting the propeller, a test run must be performed following the Neuform Installation and Maintenance Manual. When the points listed in 2.1 have been followed exactly, necessity for readjustment is highly unlikely. In case the adjustment has changed, please contact your closest Flight Design Service Center for support regarding correct adjustment on a CT aircraft.

## 3 **Appendix**

### 3.1 Changes to Previous Revision

Chapter 1.4	Requirement for individual confirmation of the installation of new bolts with roll formed threads removed. Reference to general confirmation of Neuform that bolts are changed against those with roll formed threads included.
Chapter 2.2	Warning with requirement for individual confirmation of the installation of new bolts with roll formed threads removed.
Appendix 3.1	included
Appendix 3.2	formerly Appendix 3.1. Confirmation of installation of bolts with roll formed threads removed.

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**3.2 Feedback Template Flight Design**

This form has to be returned to Flight Design upon completion of all work defined within this TA. For Aircraft that use a different propeller this form is not required.

**Warning:** As long as the form has not been submitted to Flight Design, this TA is considered not complied-with for the respective aircraft!

Submission can be done by mail, Fax or as scanned copy per E-mail to:

Flight Design GmbH  
 Sielminger Strasse 65  
 70771 L.-Echterdingen  
 Fax +49 (0)711 90287-99  
[info@flightdesign.com](mailto:info@flightdesign.com)

**Herewith it is confirmed that TA15 has been complied with for the following aircraft.**

Aircraft Type: CT

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Serial Number of Propeller: \_\_\_\_\_

Date of Completion of the TA: \_\_\_\_\_

Conduct of TM-08-01 Neuform has been done at the following workshop:

\_\_\_\_\_


Removal and re-installation performed by:

\_\_\_\_\_

	Yes	No
Compliance with TA 15 noted and signed within aircraft Logbook?	<input type="checkbox"/>	<input type="checkbox"/>
Compl. with TM-08-01 Neuform noted and signed within Logbook?	<input type="checkbox"/>	<input type="checkbox"/>
Feedback according LTA LSG 08-001 sent (if applicable)?	<input type="checkbox"/>	<input type="checkbox"/>

Date: \_\_\_\_\_ Location: \_\_\_\_\_ Signature: \_\_\_\_\_



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## 4 Appendix

### 4.1 Changes to Previous Revision

No content changes – re-issue of existing document to new numbering system

### 4.2 Feedback Template Flight Design

All information see paragraph 3