

HARTZELL PROPELLER INC.
SERVICE BULLETIN
HC-SB-61-393
Propeller Mounting Nut/Torque Inspection

1. Planning Information

A. Effectivity

- (1) Hartzell Propeller Inc. Raptor-series turbine propeller models 5D3-NK366A1 with serial numbers listed in Table 1 are affected by this Service Bulletin.

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN. INFORMATION CONTAINED IN THIS SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE SERVICE BULLETIN INDEX FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE BULLETIN.

B. Concurrent Requirements

- (1) Additional service documents may apply to the components/propellers affected by this Service Bulletin. Compliance with additional service documents may be necessary in conjunction with the completion of the Accomplishment Instructions in this Service Bulletin. Refer to the Hartzell Propeller Inc. website at www.hartzellprop.com for a cross-reference of service documents.

Serial Numbers for Affected 5D3-NK366A1 Propellers		
TS1	TS12	TS24
TS2	TS14	TS25
TS3	TS15	TS26
TS4	TS17	TS27
TS5	TS18	TS28
TS6	TS19	TS30
TS7	TS20	TS32
TS8	TS21	TS33
TS10	TS22	-
TS11	TS23	-

**Affected Propellers/Serial Numbers
Table 1**

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C. Reason

- (1) In Hartzell Propeller Inc. Owner's Manual 486 (Rev. 2), the part number for the propeller mounting nut and the associated torque value were listed incorrectly for the affected propellers.

NOTE: Hartzell Propeller Inc. Owner's Manual 486 (Rev. 3) was released on February 01, 2021 with the correct mounting nut part number and torque value.

- (a) In Manual 486 (Rev. 2), Table 3-1 ("Propeller Mounting Hardware") listed the propeller mounting nut as p/n C-6006.

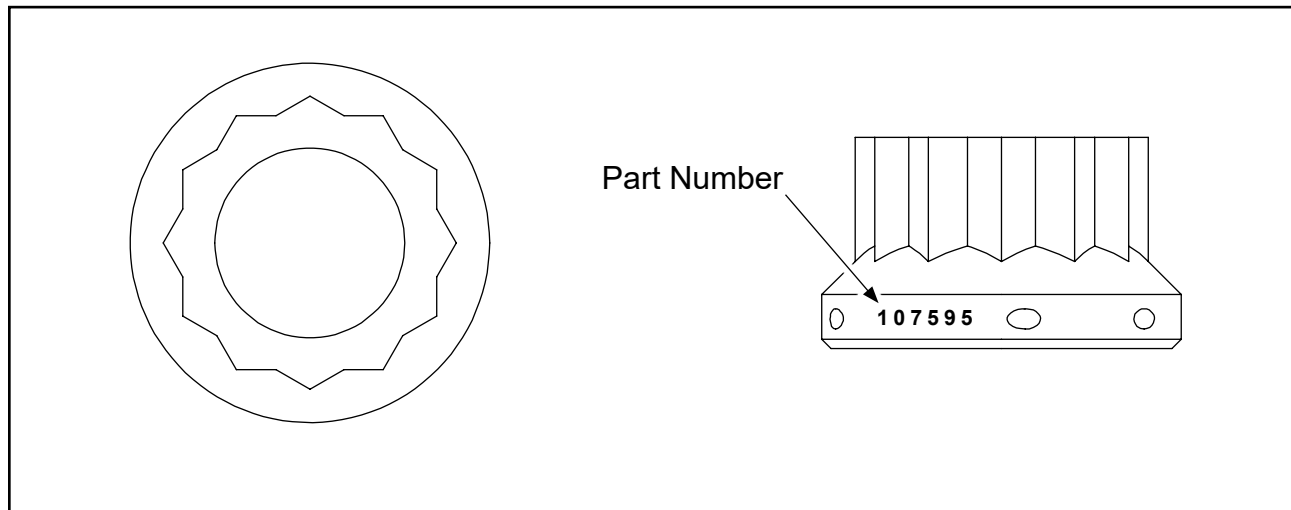
1 The mounting nut used on the affected propellers is p/n 107585.

NOTE: All of the affected propellers were packaged and shipped from Hartzell with the 107585 mounting nuts. The part number is stamped on the 107585 mounting nuts as shown in Figure 1 of this Service Bulletin.

- (b) In Manual 486 (Rev. 2), Table 3-2 ("Torque Table"), listed the torque for the C-6006 propeller mounting nut as 120-130 Ft-Lbs (163-176 N•m) wet.

1 The torque value for the 107585 mounting nut is 100-105 Ft-Lbs (136-142 N•m) wet.

- (2) To verify the condition of the mounting bolts/nuts on the affected propellers, a torque inspection of the mounting nuts is required.



107595 Mounting Nut Identification
Figure 1

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D. Description

- (1) This Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Service Bulletin corrects the propeller mounting nut part number and torque specification that was previously published in Hartzell Owner's Manual 486 (Rev. 2).
 - (a) Refer to the Material Information section of this Service Bulletin for the propeller mounting nut part number and the applicable torque value.
- (3) This Service Bulletin provides instructions for a "Mounting Nut Torque Inspection" for the affected propellers.
 - (a) Hartzell Propeller Inc. will warrant the labor costs associated with the "Mounting Nut Torque Inspection" when performed in accordance with the Accomplishment Instructions section in this Service Bulletin.
 - 1 Refer to the Appendix section of this Service Bulletin for additional information about the warranty program.

E. Compliance

- (1) Within 200 flight hours from the release date of this Service Bulletin or at next annual inspection, whichever occurs first, perform the "Mounting Nut Torque Inspection" in accordance with the Accomplishment Instructions section in this Service Bulletin.

F. Approval

- (1) FAA acceptance has been obtained on technical data in this publication that affects type design.

G. Manpower

Procedure	Allowable Man-Hours (per propeller)
Mounting Nut Torque Inspection	1.5 Man-hours

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H. Weight and Balance

- (1) Not changed

I. Electrical Load Data

- (1) Not changed

CAUTION: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF A DOCUMENT.

J. References

- (1) Hartzell Propeller Inc. Tool and Equipment Manual 165A (61-00-65)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (2) Hartzell Propeller Inc. Propeller Owner's Manual 486 (61-00-86)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com

K. Other Publications Affected

- (1) Hartzell Propeller Inc. Propeller Owner's Manual 486 (61-00-86)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com

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2. Material Information

A. Mounting Hardware for Affected Propellers

N-flange for:	O-ring	Bolt/Stud	Washer	Nut
5D()-NK366()	C-3317-230	103560	A-2048-2	107585

B. Torque Information for Propeller Mounting Nuts

CAUTION 1: TORQUE VALUES WITH "WET" NOTED AFTER THEM ARE BASED ON LUBRICATED THREADS WITH APPROVED ANTI-SIEZE COMPOUND MIL-PRF-83483().

CAUTION 2: REFER TO FIGURE 3 FOR PRELIMINARY TORQUE VALUES AND PROPER TORQUING SEQUENCE FOR THE PROPELLER MOUNTING NUTS.

CAUTION 3: REFER TO FIGURE 4 FOR TORQUE READING WHEN USING A TORQUE WRENCH ADAPTER.

Propeller Mounting Nut	Final Torque (Refer to Figure 3 for preliminary torque values and the correct torquing sequence)
107585	100-105 Ft-Lbs (136-142 N•m) Wet

C. Special Tooling

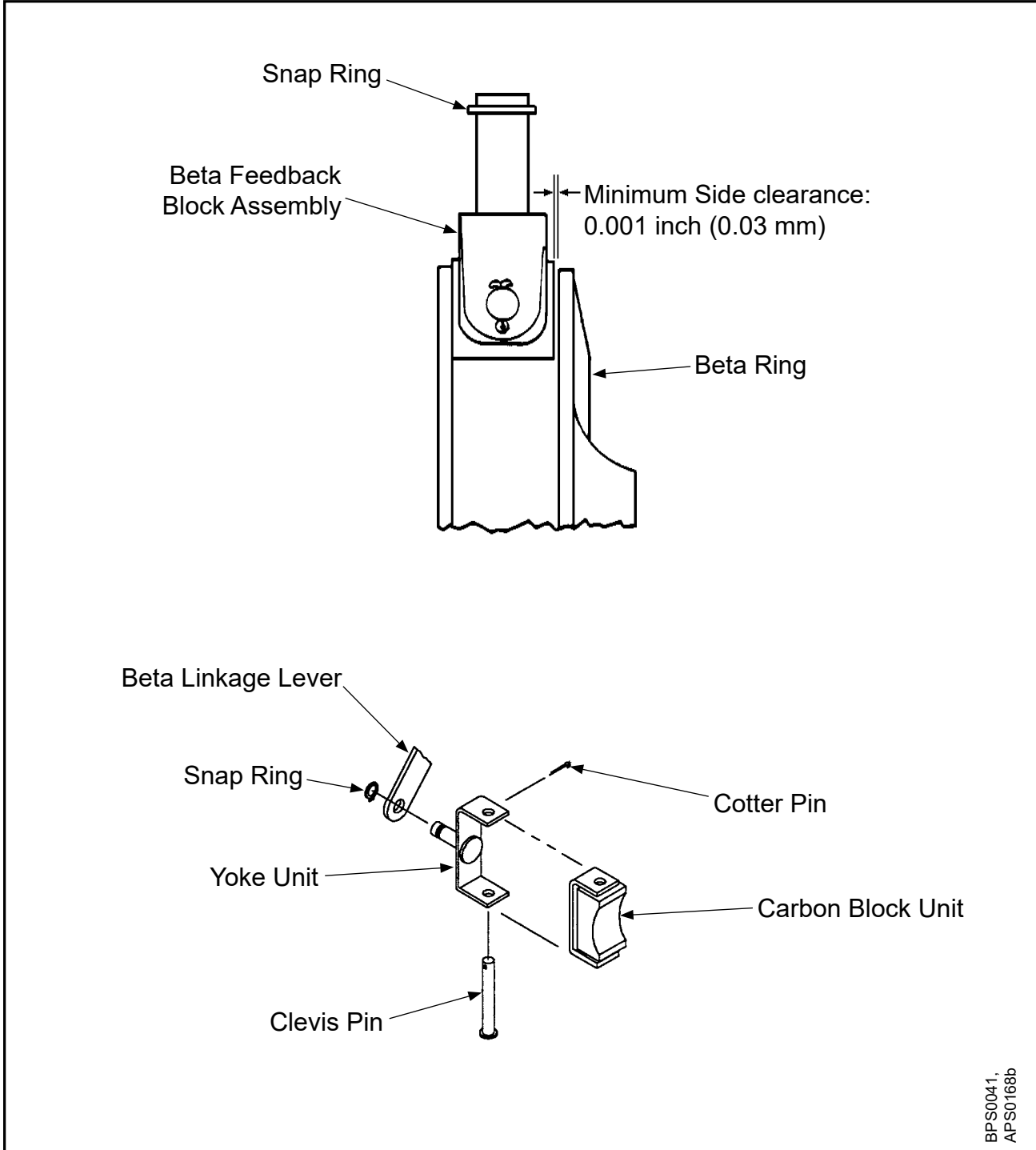
TE Number	Description
TE100	Beta System Puller
TE642	Torque Wrench Adapter

NOTE: All TE numbers in this Service Bulletin refer to Hartzell Propeller Inc. Tool and Equipment Manual 165A (61-00-65).

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BPS0041,
APS0168b

**Beta Feedback Block Assembly
Figure 2**

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3. Accomplishment Instructions

CAUTION: INSTRUCTIONS AND PROCEDURES IN THIS SERVICE BULLETIN MAY INVOLVE PROPELLER CRITICAL PARTS. REFER TO THE APPLICABLE PROPELLER OVERHAUL OR OWNER'S MANUAL FOR INFORMATION ABOUT PROPELLER CRITICAL PARTS.

A. Mounting Nut Torque Inspection

NOTE: This procedure may be performed by a certified airframe and powerplant mechanic with the appropriate rating or by a certified propeller repair station with the appropriate rating.

- (1) Remove the spinner dome in accordance with Hartzell Propeller Inc. Owner's Manual 486 (61-00-86).
- (2) Disconnect the engine beta linkage and beta feedback block assembly from the beta ring in accordance with the airframe manufacturer's instructions.
 - (a) Remove the snap ring that retains the beta feedback block assembly to the beta linkage. Refer to Figure 2.
 - (b) Remove the beta feedback block assembly. Refer to Figure 2.
- (3) Using beta system puller TE100, compress the beta system and pull the beta ring forward to access the propeller mounting nuts.
- (4) Cut and remove the safety wire that secures each propeller mounting nut.

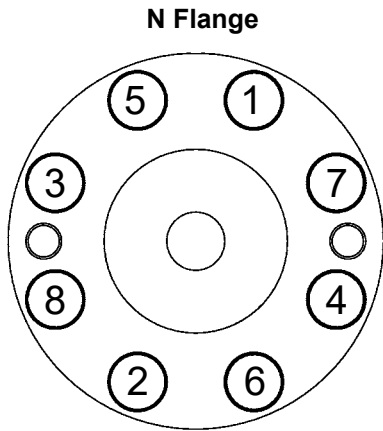
CAUTION: THE PURPOSE OF THE 90 FT-LB (122 N•m) BREAKAWAY TORQUE CHECK IS TO VALIDATE THAT THE MOUNTING NUTS/BOLTS HAVE NOT BEEN DAMAGED OR CRACKED FROM OVER-TORQUING.

- (5) Using a calibrated torque wrench and torque wrench adapter TE642, verify that the breakaway torque on each of the eight mounting nuts is equal to or greater than 90 Ft-Lbs (122 N•m) torque by loosening each nut and noting the breakaway torque.
 - (a) If the breakaway torque of any mounting nut is less than 90 Ft-Lbs (122 N•m), contact Hartzell Propeller Product Support before further flight.

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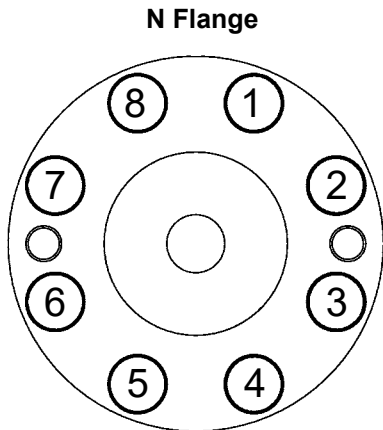


SEQUENCE A

Use Sequence A for Step 1 and Step 2.

Step 1: Torque all nuts to 40 Ft-Lbs (54 N•m) Wet

Step 2: Torque all nuts to 80 Ft-Lbs (108 N•m) Wet



SEQUENCE B

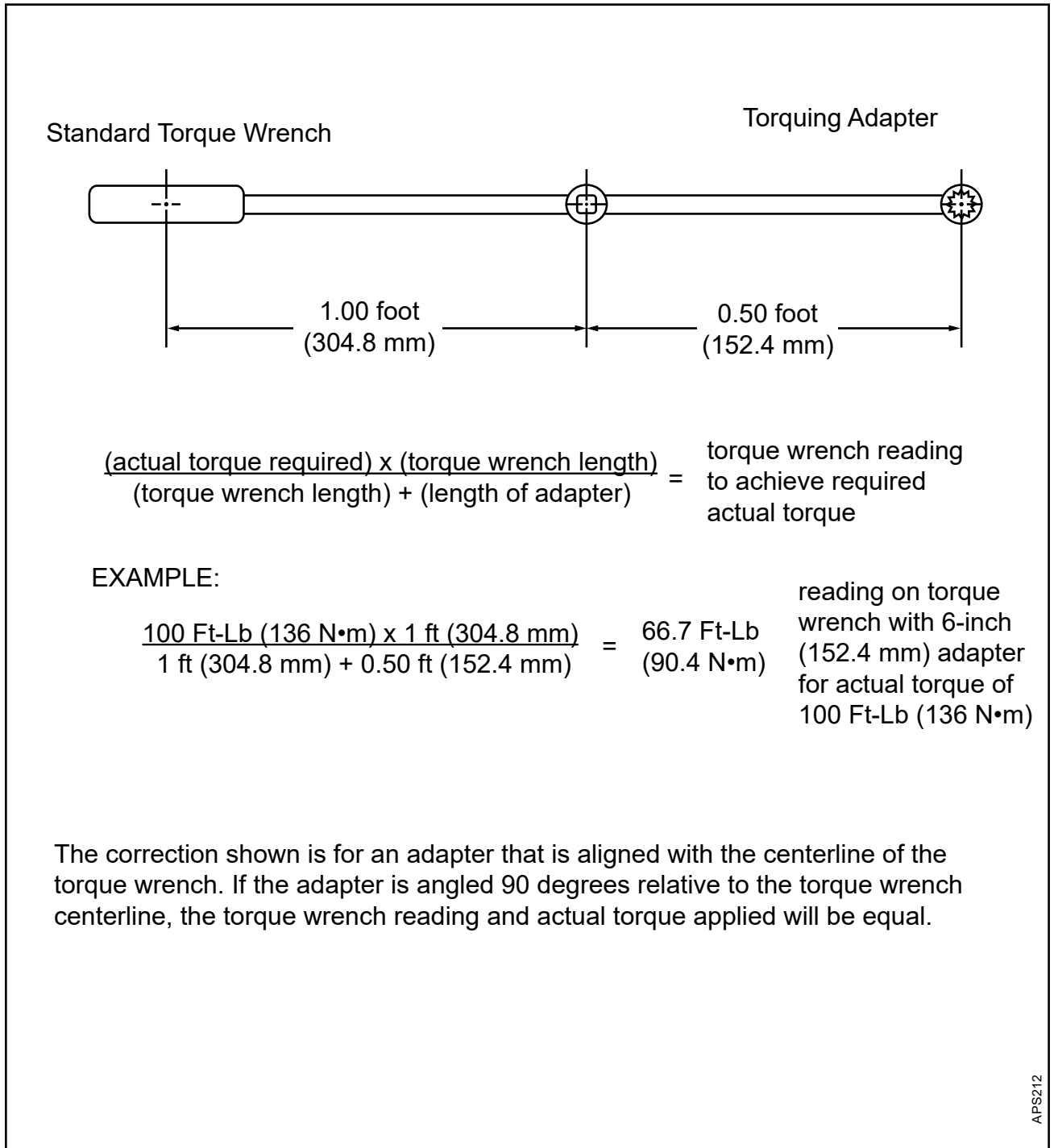
Use Sequence B for Step 3.

Step 3: Torque all nuts to 100-105 Ft-Lbs
(136-142 N•m) Wet

TPI-486-004

**Torquing Sequence for Propeller Mounting Nuts
Figure 3**

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Calculating Torque When Using Torque Wrench Adapter
Figure 4

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- (b) If the breakaway torque on all eight of the mounting nuts is equal to or greater than 90 Ft-Lbs:
 - 1 Completely loosen all eight mounting nuts.
 - a Check the part number of all eight mounting nuts. The affected propellers must use 107595 mounting nuts. Refer to Figure 1 in this Service Bulletin for part number location.
 - 2 Re-torque the mounting nuts in three steps. Use the torque specifications and sequence shown in Figure 3 of this Service Bulletin.
 - 3 Safety all eight mounting nuts with 0.032 inch (0.81 mm) minimum diameter stainless steel wire or equivalent aircraft safety cable. (Two nuts per safety).

- (6) Decompress the beta system and remove the beta system puller TE100.

CAUTION: THE BETA RING MUST NOT CONTACT ANY ENGINE COMPONENT OR MOUNTING NUT SAFETY WIRE OR SAFETY CABLE. THE BETA MECHANISM FEEDBACK COULD BE DAMAGED IF IT CONTACTED ANY STATIC ENGINE COMPONENT WHILE ROTATING.

- (7) Examine the beta ring to make sure that it is not in contact with any engine components or mounting bolt safety wire or safety cable.
 - (a) If there is contact between the beta ring and any engine components or mounting bolt safety wire or safety cable, consult a certified propeller repair station with the appropriate rating.
- (8) Install the beta feedback block assembly into the beta linkage lever, in accordance with the airframe manufacturer's instructions.

CAUTION: FIT THE BETA FEEDBACK BLOCK ASSEMBLY IN THE BETA RING WITH A MINIMUM SIDE CLEARANCE OF 0.001 INCH (0.03 mm). REFER TO FIGURE 2.

- (9) Install the beta feedback block assembly into the beta ring. Refer to Figure 2.
- (10) Install, adjust, and safety the beta linkage in accordance with the airframe manufacturer's instructions.
- (11) Install the spinner dome in accordance with Hartzell Propeller Inc. Owner's Manual 486 (61-00-86).
- (12) Make an entry in the propeller logbook indicating the "Mounting Nut Torque Inspection" was completed in accordance with this Service Bulletin.

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B. Recommended Service Facilities

- (1) Hartzell Propeller Inc. has a worldwide network of Recommended Service Facilities for overhaul and repair of our products.
- (2) Each service facility must meet standard FAA requirements and additional Hartzell Propeller requirements before being recommended by Hartzell Propeller Inc. Each service facility is audited by Hartzell Propeller Inc. to verify the continuation of the standards.
- (3) Hartzell Propeller Inc. recommends that you use one of these service facilities when having your propeller overhauled or repaired.
- (4) For a current list of Hartzell Propeller Inc. Recommended Service Facilities, contact Hartzell Propeller Inc. Product Support or refer to the Hartzell Propeller Inc. website at www.hartzellprop.com.

C. Contact Information

Hartzell Propeller Inc.
Attn.: Hartzell Propeller Inc. Product Support
One Propeller Place
Piqua, Ohio 45356-2634 USA
Phone: (001) 937.778.4379
Fax: (001) 937.778.4215
E-mail: techsupport@hartzellprop.com

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HARTZELL PROPELLER INC.
SERVICE BULLETIN APPENDIX
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1. Warranty Program Information

A. Eligibility

- (1) Hartzell Propeller Inc. Raptor-series turbine propeller models 5D3-NK366A1 with serial numbers listed in Table 1 of this Service Bulletin are eligible for this warranty program.

B. Mounting Nut Torque Inspection Labor Charges

- (1) Hartzell Propeller Inc. will authorize payment for the allowable labor charges when the "Mounting Nut Torque Inspection" is performed in accordance with the Accomplishment Instructions in this Service Bulletin.
- (a) Complete and sign the Compliance Form in this Service Bulletin Appendix and send it, along with the invoice for the labor charges to Hartzell Propeller Inc. for processing.
- 1 Refer to the Manpower section of this Service Bulletin for the warranted procedures and allowable man-hours.
 - 2 Labor charges will be reimbursed at the service facility's CURRENT POSTED SHOP LABOR RATE, pending Hartzell Propeller Inc. approval.

2. Recommended Service Facilities

- A. Hartzell Propeller Inc. has a worldwide network of Recommended Service Facilities for overhaul and repair of our products.
- B. Each service facility must meet standard FAA requirements and additional Hartzell Propeller Inc. requirements before being recommended by Hartzell Propeller Inc. Each service facility is audited by Hartzell Propeller Inc. to verify the continuation of the standards.
- C. Hartzell Propeller Inc. recommends that you use one of these service facilities when having your propeller overhauled or repaired.
- D. For a current list of Recommended Service Facilities, refer to the Hartzell Propeller Inc. website at www.hartzellprop.com, or contact Hartzell Propeller Inc. Product Support Department.

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Compliance Form

Warranty Claim Number:		
Propeller/Aircraft Information:		
Propeller Model: 5D3-NK366A1	Propeller S/N:	
Aircraft Model:	TSN (Time Since New):	
Aircraft Registration #:		
Owner Information:		
Name:		
City:	State:	
Zip/Postal Code:	Country:	
E-mail:	Phone:	
Repair Facility Information:		
Company:	Contact Name:	
Address:		
City:	State:	
Zip/Postal Code:	Country:	
E-mail:	Phone:	Fax:
Labor Charges for the Mounting Nut Torque Inspection:		
<p>Include the invoice for labor charges when submitting this Compliance Form to Hartzell Propeller Inc. Refer to the Manpower section of this Service Bulletin for warranted procedures and allowable man-hours.</p>		
Signature:		
Repair Technician's Signature:	Date:	
<p>Send this completed and signed form to Hartzell Propeller Inc. Product Support Department: Fax - (001) 937.778.4215 or E-mail - techsupport@hartzellprop.com</p>		

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Authorized By:

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