

MANDATORY SERVICE BULLETIN**NUMBER:** SB14-04**REVISION:** 00**DATE:** June 10, 2014**SUBJECT:** SLINGER RING INSPECTION**EFFECTIVITY:**

TKS™ Equipped KODIAK® 100 Series Aircraft Serial Numbers: 100-0001 thru 100-0092

SUMMARY:

The accompanying Field Service Instruction provides instruction for inspecting the slinger ring for damage caused by insufficient clearance between the propeller slinger ring and the propeller reversing lever on TKS™ equipped KODIAK® 100 airplanes including the Hartzell Propeller Anti-Ice Kit Part Number 103726.

COMPLIANCE:

This Mandatory Service Bulletin must be complied with on or before the next 100 Hour Inspection or Annual Inspection, whichever comes first.

ATTACHED DOCUMENTS:

Document #:	Document Title:
FSI-074	SLINGER RING INSPECTION

FAA APPROVAL STATUS:

The instructions attached to this Service Bulletin have demonstrated compliance with all applicable Federal Aviation Regulations and are approved by the Federal Aviation Administration.

CREDIT AND WARRANTY INFORMATION:

Quest will supply one Service Kit FSI-074 per aircraft at no cost to owner, and reimburse up to 4 hours of labor costs associated with FSI-074. Contact Quest Customer Service to order Kit, and refer to Quest's website for information on submitting invoices for labor reimbursement.

If slinger ring is found damaged, refer to SPECIAL INSTRUCTIONS section of this SB for instructions on obtaining and performing FSI-084 SLINGER RING REPLACEMENT.

Quest Customer Service**Service Bulletin: SB14-04****Phone: (208)263-1111 Toll Free: 1(866)263-1112****Email: Customerservice@questaircraft.com****SPECIAL INSTRUCTIONS:**

If slinger ring is found damaged, Quest will supply one Service Kit FSI-084 per aircraft at no cost to owner, and reimburse up to 8 hours of labor costs associated with this FSI.



FIELD SERVICE INSTRUCTION

TITLE:

Slinger Ring Inspection

SERIAL RANGE:

TKS™ Equipped 100-0001 thru 100-0092

JASC CODE: 6100

PAGE:

1 of 14

REPORT NO.:

FSI-074

REVISION:

00

SUBJECT

This Field Service Instruction provides instruction for inspecting the slinger ring for damage caused by insufficient clearance between the propeller slinger ring and the propeller reversing lever on TKS™ equipped KODIAK® 100 airplanes including the Hartzell Propeller Anti-Ice Kit Part Number 103726.

AFFECTED MANUALS AND PUBLICATIONS

None

INDUSTRY REFERENCES

None

WEIGHT AND BALANCE

Negligible

MANPOWER

The estimated man-hours and minimum number of persons required to perform this Field Service Instruction are listed below. The “Minimum Persons” refers only to maintenance personnel or installers, and unless otherwise specified within this instruction does not include additional personnel that may be needed solely to comply with safety requirements (for example, safety observers that are not performing tasks within this instruction). It is the responsibility of maintenance personnel to comply with safety requirements, including having a safety observer available as needed.

Estimated Man-hours: 4 hours

Minimum Persons: 2 persons

If more than the minimum personnel perform this instruction, the actual man-hours required may be reduced due to increased efficiencies. As appropriate, Quest encourages the use of additional personnel; man-hour estimates are based on the minimum personnel required.

RECORD OF COMPLETION

- Update the appropriate maintenance log books
- Ensure the KODIAK® 100 Aircraft Maintenance Manual is up-to-date with the current revision (Rev 13 or later)

Quest Aircraft Company, LLC
1200 Turbine Drive
Sandpoint, ID 83864

⚠ DISCLAIMER ⚠

The instructions / procedures presented herein are based upon the systems and components of the aircraft when it was delivered from the factory, or as modified by Quest Service Bulletins. Third-party modifications that have affected any component, system, or operating characteristic discussed by this document may invalidate the instructions / procedures provided. Before performing the instructions / procedures herein, examine all Supplemental Type Certificate (STC), Supplemental Type Authority (STA), or equivalently authorized modifications to verify that the instructions/procedures presented in this document can be properly completed. If an aircraft has an STC, STA, or equivalently authorized modification that affects any component, system, or operating characteristic also affected by this document, the operator is responsible for obtaining appropriate regulatory approval before performing the instructions / procedures herein. Quest Aircraft Company cannot be responsible for the quality of work performed in accomplishing the requirements of this document.

If you have any questions as to the applicability of this document to your specific aircraft, contact Quest Customer Service by telephone at (208) 263-1111, toll-free at (866) 263-1112, or via email at CustomerService@QuestAircraft.com



FIELD SERVICE INSTRUCTION

TITLE:

Slinger Ring Inspection

SERIAL RANGE: TKS™ Equipped 100-0001 thru 100-0092

JASC CODE: 6100

PAGE:

2 of 14

REPORT NO.:

FSI-074

REVISION:

00

REVISION RECORD

REV	PAGE	CHANGE DESCRIPTION
00	All	Initial Release



FIELD SERVICE INSTRUCTION

TITLE: Slinger Ring Inspection
SERIAL RANGE: TKS™ Equipped 100-0001 thru 100-0092
JASC CODE: 6100

PAGE: 3 of 14
REPORT NO.: FSI-074
REVISION: 00

TABLE OF CONTENTS

REVISION RECORD..... 2

TABLE OF CONTENTS..... 3

1. Special Safety Instructions..... 4

 1.1 Warnings..... 4

 1.2 Cautions..... 4

 1.3 Notes..... 4

2. Parts, Tools, and Equipment..... 4

 Table 2-1: Parts and Tools Included in the Service Kit..... 4

 Table 2-2: Consumables Included in the Service Kit..... 4

 Table 2-3: Serial-Number-Specific Parts Included in the Service Kit..... 4

 Table 2-4: Parts and Tools NOT Included in the Service Kit..... 4

3. General..... 5

 Figure 3-1: Propeller TKS™ Slinger Ring Overview..... 5

4. Preparation..... 6

5. Instructions..... 6

 5.1 Visual Inspection..... 6

 Figure 5-1: Damaged Slinger Ring Example..... 6

 5.2 Prepare For Clearance Inspection..... 8

 Figure 5-2: Beta Valve Piston Viewed From Below..... 8

 Figure 5-3: Beta Valve Piston Viewed From Above..... 8

 Figure 5-4: Propeller Reversing Cable/Beta Arm..... 9

 Figure 5-5: Reset Arm Castle Nut..... 10

 Figure 5-6: Slide Beta Arm to Disengage Propeller Beta Feedback Ring..... 10

 Figure 5-7: Beta Arm In Position For Clearance Inspection..... 11

 Figure 5-8: Extend Beta Valve Piston..... 12

 5.3 Measure Clearance..... 13

 Figure 5-9: Measure Beta Arm/Slinger Ring Gap..... 13

 5.4 Component Reassembly..... 13

6. Completion..... 14



FIELD SERVICE INSTRUCTION

TITLE:

Slinger Ring Inspection

SERIAL RANGE: TKS™ Equipped 100-0001 thru 100-0092

JASC CODE: 6100

PAGE:

4 of 14

REPORT NO.:

FSI-074

REVISION:

00

1. Special Safety Instructions

1.1 Warnings

Failure to comply with “Warnings” contained in this instruction may result in financial loss, significant delay in the completion time, and/or serious injury to personnel.

1.2 Cautions

Failure to comply with “Cautions” contained in this instruction may result in the destruction of components, unnecessary complications, the need to reverse completed work, and/or delays in the completion time.

1.3 Notes

“Notes” are provided when additional information may lead to an increase in efficiency.

2. Parts, Tools, and Equipment

The following tables describe the parts, tools, and equipment necessary to successfully complete this instruction. Where applicable, reference to drawings provided with this instruction is provided.

Table 2-1: Parts and Tools Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-1-1	MS9245-23	3	Cotter Pin	N/A	N/A

Table 2-2: Consumables Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-2-1	N/A	-	N/A	N/A	N/A

Table 2-3: Serial-Number-Specific Parts Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-3-1	N/A	-	N/A	N/A	N/A

Table 2-4: Parts and Tools NOT Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-4-1	Commercially Available	1	Feeler Gauge	N/A	N/A

3. General

This Field Service Instruction provides instruction to inspect the propeller slinger ring on TKS™ equipped airplanes to ensure proper clearance between the aft face of the propeller slinger ring and the propeller reversing lever (also known as the beta arm).

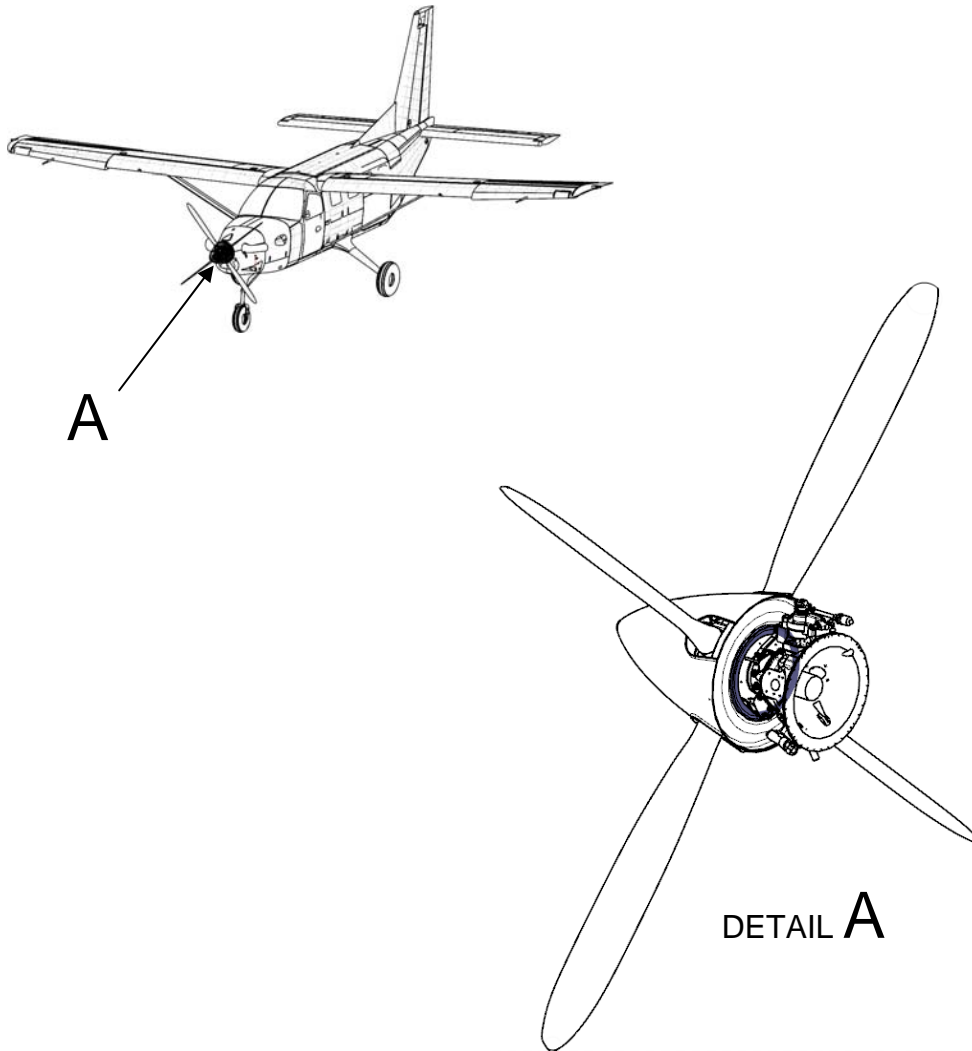


Figure 3-1: Propeller TKS™ Slinger Ring Overview

4. Preparation

Remove the forward engine cowling in accordance with the *KODIAK® 100 Airplane Maintenance Manual*, Chapter 71 in order to gain access to the propeller governor and the aft face of the propeller bulkhead.

⚠ CAUTION ⚠

KODIAK® 100 Airplane Maintenance Manual, revision 13 or higher must be used to complete this FSI.

5. Instructions

5.1 Visual Inspection

1. Visually inspect the aft face of the propeller slinger ring (P/N 13025-1) for any sign of rubbing or scoring of the aft face as shown in **Figure 5-1**. An undamaged slinger ring will be free of any marks or scoring of the aft surface.

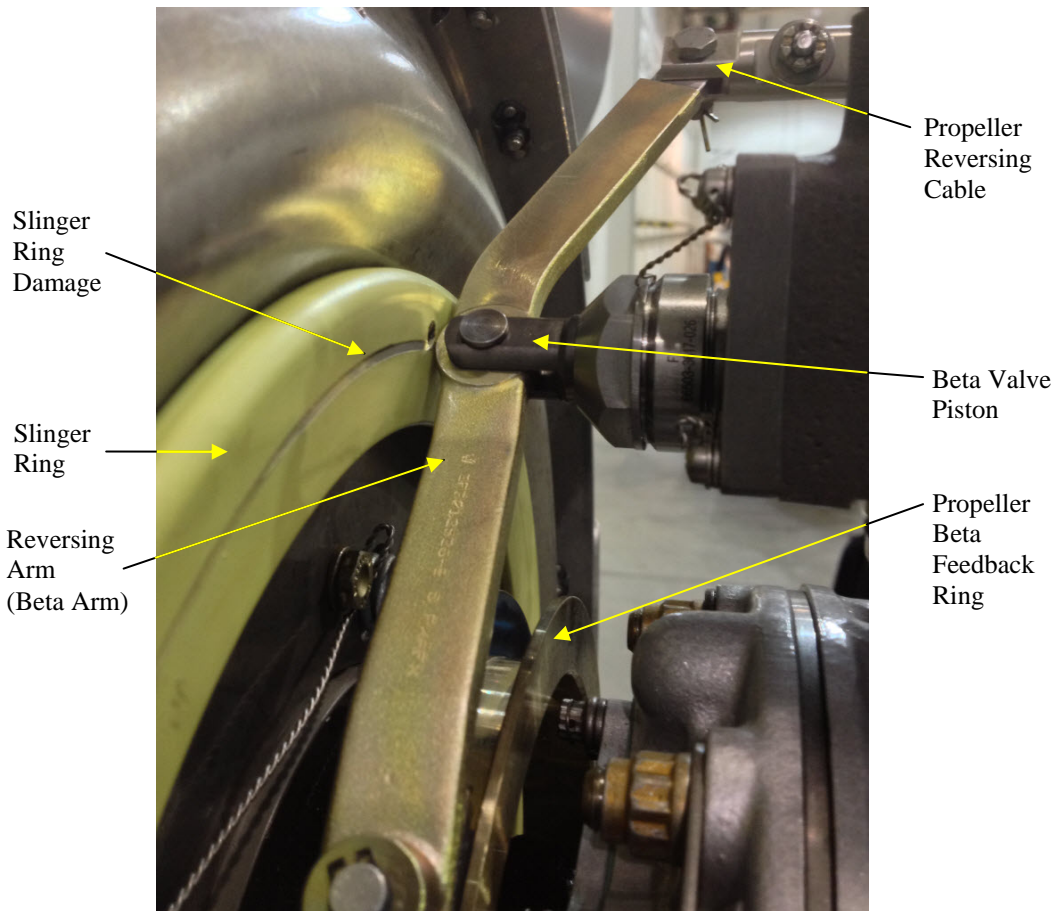


Figure 5-1: Damaged Slinger Ring Example



FIELD SERVICE INSTRUCTION

TITLE:

Slinger Ring Inspection

SERIAL RANGE: TKS™ Equipped 100-0001 thru 100-0092

JASC CODE: 6100

PAGE:

7 of 14

REPORT NO.:

FSI-074

REVISION:

00

2. If no damage is visible, proceed to **Section 5.2**.
3. If damage to the slinger ring is visible, examine the beta arm:
 - a. If damage to the beta arm is limited to the surface plating, note in the maintenance schedule the requirement to perform Quest Aircraft Company FSI-084 *Slinger Ring Replacement* and replace the beta arm at next scheduled annual or 100-hour maintenance interval. Proceed to **Section 6**.
 - b. If damage to the beta arm has progressed beyond the plating and any portion of the beta arm base material has been removed, perform Quest Aircraft Company FSI-084 *Slinger Ring Replacement* and replace the beta arm prior to the next flight. Proceed to **Section 6**.

▲ NOTE ▲

Special flight or ferry permits can be obtained through the operator's local FSDO or equivalent office.

P&WC 24-Hour Global Service Customer First Center may be contacted by any of the following means:

Toll Free: (1) 800-268-8000 Alternate: (1) 450-647-8000

Fax: (1) 450-647-2888

Email: CFirst@pwc.ca

Website: <http://www.pwc.ca>

5.2 Prepare For Clearance Inspection

To conduct the clearance inspection the beta valve piston must be fully extended. The beta valve piston is normally fully extended only during engine operation. To manually extend the beta valve piston complete the steps that follow.

1. Disengage the beta arm from the beta valve piston.
 - a. Remove the cotter pin and washer from the clevis pin securing the beta arm to the beta valve piston. Refer to **Figure 5-2**.

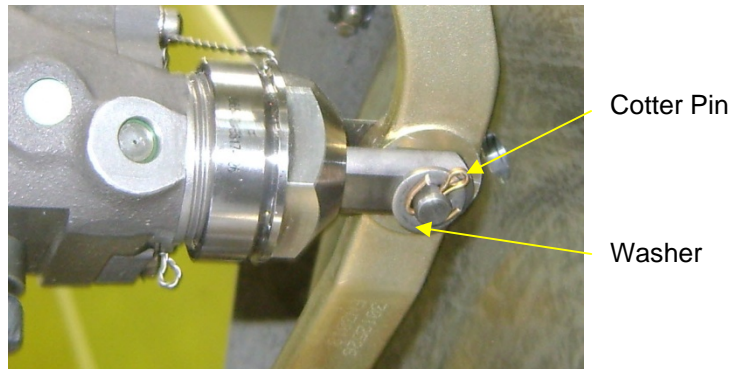


Figure 5-2: Beta Valve Piston Viewed From Below

- b. Remove the clevis pin securing the beta arm to the beta valve piston. Refer to **Figure 5-3**.

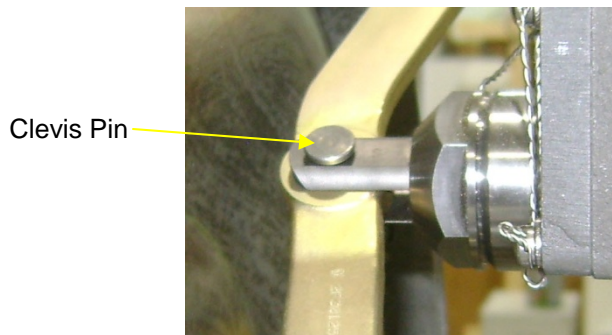


Figure 5-3: Beta Valve Piston Viewed From Above

2. Disengage the beta arm from the propeller reversing cable.
 - a. Remove the cotter pin and castle nut securing the bolt in the beta arm and the propeller reversing cable. Refer to **Figure 5-4**.

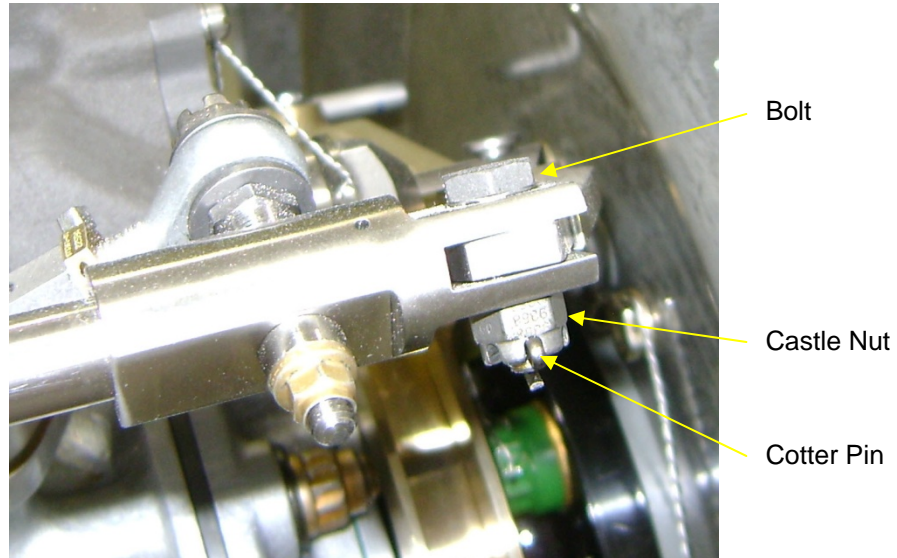


Figure 5-4: Propeller Reversing Cable/Beta Arm

- b. Carefully remove the bolt securing the beta arm to the propeller reversing cable. Refer to **Figure 5-4**.

⚠ CAUTION ⚠

There is a bushing in the beta arm where it attaches to the propeller reversing cable. Do not drop the bushing when disconnecting the propeller reversing cable.

- c. Disconnect the beta arm from the propeller reversing cable and move the beta arm so it is able to move without interference from the propeller reversing cable.
 - d. If there is insufficient play in the propeller reversing cable to move the beta arm free from the propeller reversing cable, remove the reset arm cotter pin and castle nut to disconnect the reset arm from the reversing cable, without disturbing the reset arm's safety wire. Be careful to retain the two (2) washers installed on both sides of the reset arm rod end. Refer to **Figure 5-5**.

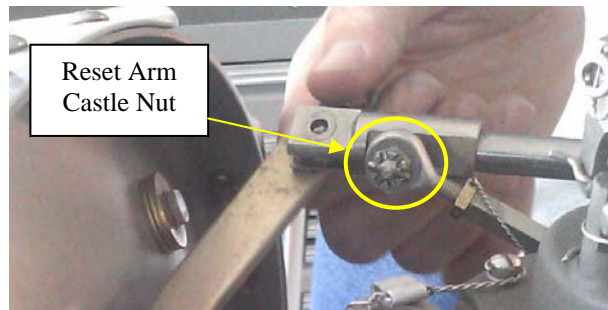


Figure 5-5: Reset Arm Castle Nut

3. Disengage the beta arm from the propeller beta feedback ring.
 - a. Slide the beta arm past the connection point with the propeller reversing cable enough to lift the carbon block out of the propeller beta feedback ring. Refer to **Figure 5-6**.

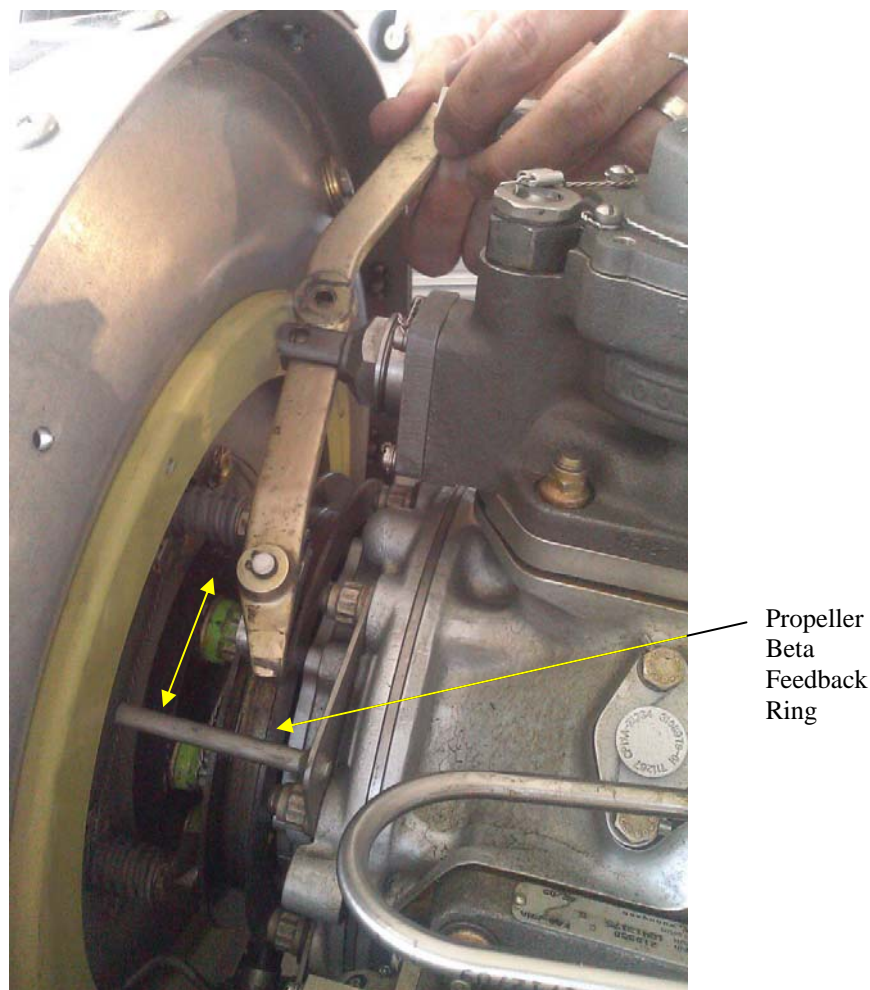


Figure 5-6: Slide Beta Arm to Disengage Propeller Beta Feedback Ring



FIELD SERVICE INSTRUCTION

TITLE:

Slinger Ring Inspection

SERIAL RANGE: TKS™ Equipped 100-0001 thru 100-0092

JASC CODE: 6100

PAGE:

11 of 14

REPORT NO.:

FSI-074

REVISION:

00

- b. Lift the carbon block out of the propeller beta feedback ring and move the carbon block forward of the propeller beta feedback ring. Refer to **Figure 5-7**.

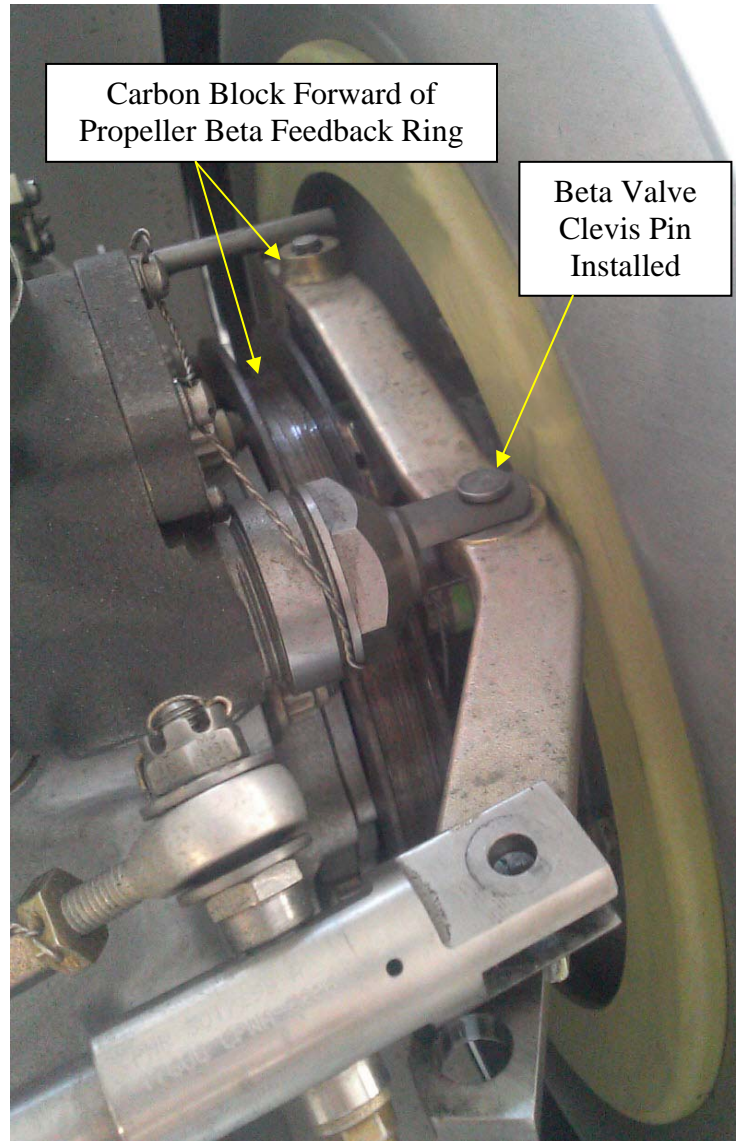


Figure 5-7: Beta Arm In Position For Clearance Inspection

4. Extend the beta valve piston fully forward.
 - a. Install the clevis pin to connect the beta arm to the beta valve piston.
Refer to **Figure 5-7**.
 - b. Apply hand pressure to the beta arm to extend the beta valve piston fully.
Refer to **Figure 5-8**.

▲ NOTE ▲

The beta valve is spring loaded to the full-forward position. To confirm that the beta valve is firmly seated against the full-forward stop, apply hand pressure to push the valve aft, then pull it forward again. The internal beta valve forward stop is detected as a firm abrupt (metal to metal) contact point.

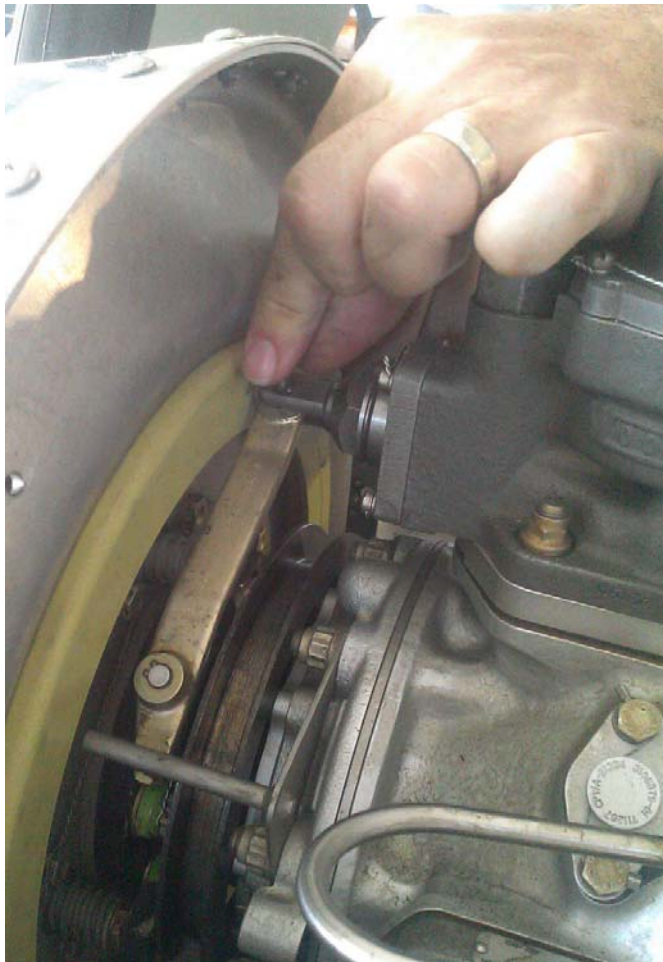


Figure 5-8: Extend Beta Valve Piston

5.3 Measure Clearance

1. With a feeler gauge, measure the gap between the beta arm and the aft face of the slinger ring. Refer to **Figure 5-9**.



Figure 5-9: Measure Beta Arm/Slinger Ring Gap

- c. If the gap is greater than or equal to .025 inch, record a reminder in the airplane maintenance records to perform Hartzell Propeller Inc. Service Bulletin HC-SB-30- 352 at the next propeller overhaul.
- d. If the gap is less than .025 inch, record a reminder in the airplane maintenance records to perform Quest Aircraft Company FSI-084 *Slinger Ring Replacement* at the next 100 hour or annual maintenance inspection.

5.4 Component Reassembly

1. Remove the beta valve clevis pin. Refer to **Figure 5-7**.
2. Reposition the beta arm to re-engage the carbon block with the propeller beta feedback ring. Refer to **Figure 5-6**.



FIELD SERVICE INSTRUCTION

TITLE:

Slinger Ring Inspection

SERIAL RANGE:

TKS™ Equipped 100-0001 thru 100-0092

JASC CODE: 6100

PAGE:

14 of 14

REPORT NO.:

FSI-074

REVISION:

00

3. Position the beta arm in its original position connected to the beta valve piston and the propeller reversing cable.
4. If the propeller reversing cable reset arm was disconnected from the reversing cable, install one of the previously removed washers, reconnect the reversing arm, install the second previously removed washers, install the castle nut and secure the castle nut with a new cotter pin (P/N MS9245-23). Refer to **Figure 5-5**.
5. Install the reversing cable bolt, bushing, and castle nut. Secure the cable bolt with a new cotter pin (P/N MS9245-23). Refer to **Figure 5-1**.
6. Install the beta valve clevis pin and washer. Secure the clevis pin with a new cotter pin (P/N MS9245-23). Refer to **Figure 5-1**.

6. Completion

1. Reinstall engine cowlings in accordance with the *KODIAK® 100 Airplane Maintenance Manual*, Chapter 71.
2. Record all work performed in the appropriate maintenance records.

---END---