Hartzell Propeller Inc
One Propeller Place
Piqua, OH 45356

Maintenance Manual
Supplement
Document No. 208-3BP-MMS

CESSNA
1985 & ON
MODEL 208
SERIES

The information contained herein supplements or supersedes the basic Maintenance Manual only in those areas listed herein. For maintenance information not contained in this supplement, consult the latest revision of the appropriate manual.

Original Issue May 12, 2000
Revision 4, May 13, 2016

Maintenance Manual Supplement

Document No. 208-3BP-MMS

LOG OF REVISIONS

Revision Number	Revised Pages	Description of Revision	Date
New	--	Original issue	May 12, 2000
1	Page 1 & 2 [list of publications]. Page 1 [Sect. 4-11-00].	Added revision log page & note. Updated "List of publications" Ch. 30 & 61 vendor addresses; Updated title, publication ATA numbers and rev footers. Added Manual 118 to List of Publications. Corrected propeller model number section 4-11-00 and "List of chapters" effective date.	March 21, 2002
2	Sect. 5-12-01 page 2; Sect. 30-30-00 page 8	Removed blank page 5-12-01,P-2 [no content change]. Corrected page number 9 to 8 Sec. 30-60-00. Updated "List of chapters" effective date.	April 15, 2002
3	List of publications section pages 1&2; 4-11-00 page 1, 5-11-00 page 1, 5-12-00 page 1, 5-20-01 page 1, 30-60-00 page 1, 6, 7, 8 61 Contents page 1, 61-12-00 page 1, 61-12-00 page 501	Added optional propeller model with start-locks, model HC-B3TN-3AF(Y)/ T10890CN(K)-2	June 17, 2003
4		Re-released in its entirety.	May 13, 2016
	Multiple pages	Included the (B) optional suffix in most places where the propeller model number appears. Originally "de-" and "anti-" ice were used almost interchangeably. Clarified ice protection types by specifying as *electric* de-ice or *fluid* anti-ice.	
	List of Publications pp. 2-3	Added reference publications for fluid anti-ice system. Added fluid anti-ice spinner part number to Ch. 61 table.	
	4-11-00	Modified statement for Life Limited components for current regulation amendments.	
	5-10-01 p. 2; 5-12-01 p. 1; 5-12-02 p. 1; 5-12-03 p. 1; 5-12-04 p. 1;	Added propeller anti-ice and deice 100 hour inspection to Table of Inspection Items	
	30-Contents; 30-60-00 p.6	Added propeller fluid anti-ice maintenance practices.	
	30-60-00 pp.1-3	Removed detailed maintenance procedures where such procedures are provided in Hartzell Manuals 180, 181, 182, or 183.	

Note: All changes are indicated by a black vertical line along the left margin.

LIST OF PUBLICATIONS

1. List of Manufacturers Technical Publications in addition to the existing list in the maintenance manual.

Note: Publications produced by Hartzell for the HC-B3TN-3AF(Y)/T10890CN(B,K)-2 propeller may be ordered directly from Hartzell. Manufacturer, publication names, numbers and addresses are listed below.

CHAPTER 30 – ICE AND RAIN PROTECTION

Item	Cessna Part Number	Manufacturer Part Number	Publication Part Number	Publication Title	Manufacturer
Propeller De-ice Brush Block (Electric)		3E2090-1	30-60-01	Component Maintenance Manual Brush Assemblies Electrothermal Propeller De-icing Systems	Goodrich Corporation De-icing and Specialty Systems 1555 Corporate Woods Parkway Uniontown, Ohio 44685
Propeller De-ice (Electric)		4E2560-10	30-60-07	De-icer Installation Manual	Goodrich Corporation De-icing and Specialty Systems 1555 Corporate Woods Parkway Uniontown, Ohio 44685
Propeller De-ice/ Anti-ice System		HC-B3TN-3AF(Y)/ T10890CN(B,K)-2	180 30-61-80	Propeller Ice Protection System Manual	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356
Propeller De-ice/ Anti-ice Components		HC-B3TN-3AF(Y)/ T10890CN(B,K)-2	181 30-61-81	Propeller Ice Protection System Component Maintenance Manual	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356

CHAPTER 61 - PROPELLERS

Item	Cessna Part Number	Manufacturer Part Number	Publication Part Number	Publication Title	Manufacturer
Propeller		HC-B3TN-3AF(Y)/ T10890CN(B,K)-2	139 61-00-39	Propeller Owner's Manual & Log Book	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356
Propeller		HC-B3TN-3AF(Y)/ T10890CN(B,K)-2	133C 61-13-33	Aluminum Blade Inspection, Repair and Overhaul Instructions	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356
Propeller Spinner		D-4897(P), D-4897-2(P)	127 61-16-27	Spinner Assembly Maintenance Instruction Guide	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356

Item	Cessna Part Number	Manufacturer Part Number	Publication Part Number	Publication Title	Manufacturer
Propeller		HC-B3TN-3AF(Y)/ T10890CN(B,K)-2	118 61-10-18	Propeller Maintenance Manual	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356
Propeller De-ice Boots		HC-B3TN-3AF(Y)/ T10890CNK-2	182 61-12-82	Propeller Electrical De-Ice Boot Removal and Installation Manual	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356
Propeller Anti-Ice Boots		HC-B3TN-3AF(Y)/ T10890CNB-2	183 61-12-83	Propeller Anti-Icing Boot Removal and Installation Manual	Hartzell Propeller Inc. 1 Propeller Place Piqua, Ohio 45356

LIST OF CHAPTERS

AIRWORTHINESS LIMITATIONS

REPLACEMENT TIME LIMITS

1. General

   NOTE: The Airworthiness Limitations section is FAA approved and specifies maintenance required under 14 CFR §43.16 and §91.403 unless an alternative program has been FAA approved.

   There are no new or additional airworthiness limitations associated with this equipment and/or installation.

2. Replacement Schedule
   A. Propellers (Chapter 61)
      (1) Hartzell HC-B3TN-3AF(Y)/T10890CN(B,K)-2 Propeller. Refer to the Hartzell Aluminum Blade Inspection, Repair and Overhaul Instructions, and the Hartzell Spinner Assembly Maintenance Instruction Guide listed in the List of Publications at the front of this publication.

TIME LIMITS / MAINTENANCE CHECKS

CONTENTS

TIME LIMITS / MAINTENANCE CHECKS

INSPECTION TIME LIMITS

1. Inspection Interval Requirements

    A. Every 100 hours.
    B. Every 200 hours.
    C. Every 400 hours.
    D. Every 500 hours or 1 year, whichever occurs first.
    E. Every 800 hours or 1 year, whichever occurs first.
    F. Every 1000 hours or 1 year, whichever occurs first.
    G. Every 2000 hours or 2 years, whichever occurs first.
    H. Every 1 year.
    I. Every 2 years.
    J. Every 3 years.
    K. Every 4 years.
    L. Every 6 years.
    M. Every 12 years.
    N. Every 1200 hours or 1 year, whichever occurs first.
    O. Every 100 hours and every external engine wash or engine compartment wash.
    P. Every 500 hours.
    Q. Every 1200 hours or 2 years, whichever occurs first.
    R. Every 1000 hours.
    S. At 13,000 hours and every 4000 hours thereafter.
    T. At 10,000 hours and every 5000 hours thereafter.

TIME LIMITS / MAINTENANCE CHECKS

INSPECTION TIME LIMITS

REVISION STATUS	INSPECTION ITEM CODE NUMBER	DESCRIPTION	INTERVAL	OPERATION	ZONE
	306004	Prop Electric De-ice Varister –Check for condition and security of installation and condition of electrical contacts.	C	1	151
	306005	Prop Electric De-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	A	1, 2, 3, 4	110
	306006	Prop Fluid Anti-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	A	1, 2, 3, 4	110
	633001	Hartzell Propeller Spinner - Remove, wash, inspect for cracks, fractures, condition and security.	A	1, 2, 3, 4	110
	633002	Hartzell Spinner Bulkhead - Inspect for cracks, condition and security.	A	1, 2, 3, 4	110
	633003	Hartzell Propeller Blades - Wash, check for nicks, gouges, scratches, corrosion, leading edge looseness, depressions, erosion, cracks, condition and security.	A	1, 2, 3, 4	110
	633004	Hartzell Propeller Blades - Check alignment and freedom of movement.	A	1, 2, 3, 4	110
	633005	Hartzell Propeller Hub (exposed area) - Inspect for cracks, wear, condition, and security of components to hub.	A	1, 2, 3, 4	110
	633006	Hartzell Propeller - Inspect for oil and grease leaks.	A	1, 2, 3, 4	110
	633007	Hartzell Propeller Mounting - Visually check for security of installation.	A	1, 2, 3, 4	110
	633008	Hartzell Propeller Hub - Lubricate and check for security of blades. (Refer to Chapter 12 for type of lubrication, and Chapter 61 for specific lubrication instructions).	A	1, 2, 3, 4	110
	632001	Hartzell Beta System Feedback Ring - Inspect ring for condition, warpage and security of installation. Inspect carbon brush for wear and evidence of damage. Inspect linkage for condition and security. (Refer to Chapter 61).	B	1, 3	110
	632002	Propeller Governor and Overspeed Governor - Inspect for oil leaks, condition and security.	A	1, 2, 3, 4	121
	632003	Overspeed Governor - Inspect electrical connection wiring for evidence of damage and security.	C	1	121
	632004	Propeller Governor Operational check with engine running - Perform check.	A	1, 2, 3, 4	ENG

TIME LIMITS / MAINTENANCE CHECKS

COMPONENT TIME LIMITS

1. Component Time Limit

   A. All components not listed herein should be inspected as detailed in the basic Maintenance Manual, chapter 5, and repaired, overhauled or replaced as required. Items shown here should be overhauled or replaced during the regular maintenance periods falling due nearest to the specified limit.

   B. The replacement life of each component listed in this section applies to the part throughout its life on the original installation and on later installations. The life (number of hours or number of landings) must be recorded individually for these components and must remain with the component during removal. For example, if a component is removed for overhaul, it must be tagged with the life to the date of removal ant this tag must remain with the component throughout the overhaul process. (Overhaul of a component does not zero time the life of the component.) When received from overhaul and installed on an airplane the life of the component must be recorded to allow continued accumulation toward the life limit.

1. Schedule

   A. Propeller - Hartzell HC-B3TN-3AF(Y)/T10890CN(B,K)-2 (Chapter 61)
      (1) Propeller - Overhaul Refer to Service Letter SL61.
      (2) Governor (Woodward) - Overhaul Refer to Pratt & Whitney Service Bulletin number 1003.
      (3) Overspeed Governor (Woodward) - Overhaul at engine overhaul plus 500 hours.

TIME LIMITS / MAINTENANCE CHECKS

PROGRESSIVE CARE PROGRAM

1. Progressive Care Program

   A. Purpose and Use.
      (1) The Inspection Charts and Progressive Care Program is designed to assist the owner or operator in meeting the intent of FAR Part 91.409(a), (b), and (d). These Inspection Charts are not intended to be all inclusive, for no such charts can replace the good judgment of a certified airframe and powerplant mechanic in performance of his duties. As the one primarily responsible for the airworthiness of the airplane, the owner or operator should select only qualified personnel to maintain the airplane.

2. Construction

   A. Following is the recommended supplementary progressive inspection for Model 208, 208A, and 208B airplanes equipped with a Hartzell HC-B3TN-3AF(Y)/ T10890CN(B,K)-2 propeller.

   B. The program is divided into four primary operations (operations 1 through 4) which cover all 100 hour, 200 hour, and 400 hour inspection requirements. The remaining operations include all of the inspection requirements due at other intervals and can be found in the basic Maintenance Manual.

   C. The inspection program is divided into operations to enable the progressive inspection to be accomplished.
      Operation 1 - Covers items in the engine, wing, empennage and fuselage areas.
      Operation 2 - Covers items in the engine, wing, and landing gear areas.
      Operation 3 - Covers items in the engine, wing, empennage and fuselage areas.
      Operation 4 - Covers items in the engine, wing, empennage and fuselage areas.

TIME LIMITS / MAINTENANCE CHECKS

PROGRESSIVE CARE PROGRAM

3. Procedure

   A. The inspection Time Limits Charts show the recommended intervals at which items are to be inspected based on normal usage under average environmental conditions. Airplanes operated in extremely humid areas (tropics), or in exceptionally cold, damp climates, etc., may need more frequent inspections for wear, corrosion, and lubrication. Under these adverse conditions, perform periodic inspections in compliance with this chart at more frequent intervals until the operator can set his own inspection periods based on field experience. The operator's inspection intervals shall not deviate from the inspection time limits shown in this manual except as provided below:
      (1) Each inspection interval can be exceeded by 10 hours (if time controlled), or by 30 days (if date controlled) or can be performed early at any time prior to the regular interval as provided below:
         (a) In the event of late compliance of any operation scheduled, the next operation in sequence retains a due point from the time the late operation was originally scheduled.
         (b) In the event of early compliance of any operation scheduled, that occurs 10 hours or less ahead of schedule, the next phase due point may remain where originally set.
         (c) In the event of early compliance of any operation scheduled, that occurs more than 10 hours ahead of schedule, the next operation due point must be rescheduled to establish a new due point from the time of early accomplishment.

   C. Component Time Limits should be checked at each inspection interval to ensure proper overhaul and replacement requirements are accomplished at the specified times.

4. Inspection Guidelines.

   A. The inspection Charts are to be used as a recommended inspection outline and are supplementary to the existing charts in the basic Maintenance Manual. Detailed information of systems and components in the airplane will be found in various chapters of the basic Maintenance Manual and the pertinent vendor publications. It is recommended that reference be made to the applicable portion of this manual or the basic Maintenance Manual for service instructions, installation instructions, and to the vendor's data or publications specifications for torque values, clearances, settings, tolerances, and other requirements.

TIME LIMITS / MAINTENANCE CHECKS

PROGRESSIVE CARE PROGRAM

B. Definitions and procedures

(1) For the purposes of this inspection program, the term “on condition” is defined as follows: The necessary inspections and/or checks to determine that a malfunction or failure of the component will not occur prior to the next scheduled inspection.

(2) For the purpose of this inspection program, the term “condition” is defined as follows: Inspect for, but not limited to, cleanliness, cracks, deformation, corrosion, wear, and loose or missing fasteners.

(3) MOVABLE PARTS: Inspect for lubrication, servicing, security of attachment, binding, excessive wear, safetying, proper operation, proper adjustment, correct travel, cracked fittings, security of hinges, defective bearings, cleanliness, corrosion, deformation, sealing, and tension.

(4) FLUID LINES AND HOSES: Inspect for leaks, cracks, bulging, collapsed, twisted, dents, kinks, chafing, proper radius, security, discoloration, bleaching, deterioration, and proper routing; rubber hoses for hardness or flexibility and metal lines for corrosion.

(5) METAL PARTS: Inspect for security of attachment, cracks, metal distortion, loose or broken terminals, heat deterioration, and corroded terminals.

(6) WIRING: Inspect for security, chafing, burning, arcing, defective insulation, loose or broken terminals, heat deterioration, and corroded terminals.

(7) STRUCTURAL FASTERNERS: Inspect for correct torque in accordance with applicable torque values. Refer to Bolt Torque Data during installation or when visual inspection indicates the need for a toque check.

NOTE: Torque values listed are not to be used for checking tightness of installed parts during service.

(8) FILTERS, SCREENS, AND FLUIDS: Inspect for cleanliness and the need for replacement at specified intervals.

(9) System check (operation or function) requiring electrical power must be performed using 28.0Volts ±0.5 Volts, bus voltage. This will ensure all components are operating at their operational voltage.

TIME LIMITS / MAINTENANCE CHECKS

PROGRESSIVE CARE PROGRAM

INSPECTION OPERATION 1

ITEM CODE NUMBER	DESCRIPTION	ZONE	MECH	INSP REMARKS
306004	Prop Electric De -ice Varister –Check for condition and security of installation and condition of electrical contacts.	151		
306005	Prop Electric De-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
306006	Prop Fluid Anti-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
633001	Hartzell Propeller Spinner - Remove, wash, inspect for cracks, fractures, condition and security.	110		
633002	Hartzell Spinner Bulkhead - Inspect for cracks, condition and security.	110		
633003	Hartzell Propeller Blades - Wash, check for nicks, gouges, scratches, corrosion, leading edge looseness, depressions, erosion, cracks, condition and security.	110		
633004	Hartzell Propeller Blades - Check alignment and freedom of movement.	110		
633005	Hartzell Propeller Hub (exposed area) - Inspect for cracks, wear, condition, and security of components to hub.	110		
633006	Hartzell Propeller - Inspect for oil and grease leaks.	110		
633007	Hartzell Propeller Mounting - Visually check for security of installation.	110		
633008	Hartzell Propeller Hub - Lubricate and check for security of blades. (Refer to Chapter 12 for type of lubrication, and Chapter 61 for specific lubrication instructions).	110		
632001	Hartzell Beta System Feedback Ring - Inspect ring for condition, warpage and security of installation. Inspect carbon brush for wear and evidence of damage. Inspect linkage for condition and security. (Refer to Chapter 61).	110		
632002	Propeller Governor and Overspeed Governor - Inspect for oil leaks, condition and security.	121		
632003	Overspeed Governor - Inspect electrical connection wiring for evidence of damage and security.	121		

TIME LIMITS / MAINTENANCE CHECKS

PROGRESSIVE CARE PROGRAM

INSPECTION OPERATION 2

ITEM CODE NUMBER	DESCRIPTION	ZONE	MECH	INSP REMARKS
306005	Prop Electric De-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
306006	Prop Fluid Anti-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
633001	Hartzell Propeller Spinner - Remove, wash, inspect for cracks, fractures, condition and security.	110		
633002	Hartzell Spinner Bulkhead - Inspect for cracks, condition and security.	110		
633003	Hartzell Propeller Blades - Wash, check for nicks, gouges, scratches, corrosion, leading edge looseness, depressions, erosion, cracks, condition and security.	110		
633004	Hartzell Propeller Blades - Check alignment and freedom of movement.	110		
633005	Hartzell Propeller Hub (exposed area) - Inspect for cracks, wear, condition, and security of components to hub.	110		
633006	Hartzell Propeller - Inspect for oil and grease leaks.	110		
633007	Hartzell Propeller Mounting - Visually check for security of installation.	110		
633008	Hartzell Propeller Hub - Lubricate and check for security of blades. (Refer to Chapter 12 for type of lubrication, and Chapter 61 for specific lubrication instructions).	110		
632002	Propeller Governor and Overspeed Governor - Inspect for oil leaks, condition and security.	121		
632004	Propeller Governor Operational checks with engine running - Perform check.	ENG		

TIME LIMITS / MAINTENANCE CHECKS

PROGRESSIVE CARE PROGRAM

INSPECTION OPERATION 3

ITEM CODE NUMBER	DESCRIPTION	ZONE	MECH	INSP REMARKS
306005	Prop Electric De-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
306006	Prop Fluid Anti-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
633001	Hartzell Propeller Spinner - Remove, wash, inspect for cracks, fractures, condition and security.	110		
633002	Hartzell Spinner Bulkhead - Inspect for cracks, condition and security.	110		
633003	Hartzell Propeller Blades - Wash, check for nicks, gouges, scratches, corrosion, leading edge looseness, depressions, erosion, cracks, condition and security.	110		
633004	Hartzell Propeller Blades - Check alignment and freedom of movement.	110		
633005	Hartzell Propeller Hub (exposed area) - Inspect for cracks, wear, condition, and security of components to hub.	110		
633006	Hartzell Propeller - Inspect for oil and grease leaks.	110		
633007	Hartzell Propeller Mounting - Visually check for security of installation.	110		
633008	Hartzell Propeller Hub - Lubricate and check for security of blades. (Refer to Chapter 12 for type of lubrication and Chapter 61 for specific lubrication instructions).	110		
632001	Hartzell Beta System Feedback Ring - Inspect ring for condition, warpage and security of installation. Inspect carbon brush for wear and evidence of damage. Inspect linkage for condition and security. (Refer to Chapter 61).	110		
632002	Propeller Governor and Overspeed Governor - Inspect for oil leaks, condition and security.	121		
632004	Propeller Governor Operational checks with engine running - Perform check.	ENG		

TIME LIMITS / MAINTENANCE CHECKS

PROGRESSIVE CARE PROGRAM

INSPECTION OPERATION 4

ITEM CODE NUMBER	DESCRIPTION	ZONE	MECH	INSP REMARKS
306005	Prop Electric De-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
306006	Prop Fluid Anti-Ice system 100 hour inspection per Hartzell Manual 181, Chapter 5	110		
633001	Hartzell Propeller Spinner - Remove, wash, inspect for cracks, fractures, condition and security.	110		
633002	Hartzell Spinner Bulkhead - Inspect for cracks, condition and security.	110		
633003	Hartzell Propeller Blades - Wash, check for nicks, gouges, scratches, corrosion, leading edge looseness, depressions, erosion, cracks, condition and security.	110		
633004	Hartzell Propeller Blades - Check alignment and freedom of movement.	110		
633005	Hartzell Propeller Hub (exposed area) - Inspect for cracks, wear, condition, and security of components to hub.	110		
633006	Hartzell Propeller - Inspect for oil and grease leaks.	110		
633007	Hartzell Propeller Mounting - Visually check for security of installation.	110		
633008	Hartzell Propeller Hub - Lubricate and check for security of blades. (Refer to Chapter 12 for type of lubrication and Chapter 61 for specific lubrication instructions).	110		
632002	Propeller Governor and Overspeed Governor - Inspect for oil leaks, condition and security.	121		
632004	Propeller Governor Operational checks with engine running - Perform check.	ENG		

TIME LIMITS / MAINTENANCE CHECKS

SCHEDULED INSPECTION CHECKS

A. Hartzell HC-B3TN-3AF(Y)/T10890CN(B,K)-2 Propeller (Chapter 61)

(1) Propeller Governor (operational check with engine running)

(a) With prop control at MAX RPM, advance power lever until prop RPM stabilizes at 1900 RPM, ±10 RPM.

(b) Reduce power to idle and place prop control at minimum RPM.

(c) Advance power lever until prop RPM stabilizes at 1600 RPM, +0, or -50 RPM.

(d) Reduce power to idle and return prop control to maximum RPM.

PROPELLER (HARTZELL) - SERVICING

1. General
   A. Access to propeller grease fittings is gained by removing propeller spinner. Refer to Chapter 61, Propeller (Hartzell) - Maintenance Practices.
   B. Refer to Propeller Owner's Manual 139 for lubrication requirements and procedures for this propeller.

ICE AND RAIN PROTECTION

CONTENTS

ICE AND RAIN PROTECTION

PROPELLER ELECTRIC DE-ICE – MAINTENANCE PRACTICES

1. General

   A. Propeller de-ice maintenance practices consist of propeller de-ice boot removal / installation and electrical components removal / installation.

   B. Refer to STC Installation Instructions (Hartzell Document 208-3BP-IM) for applicable electric de-ice kit part number(s).

2. Propeller De-ice Boots Removal / Installation (Hartzell HC-B3TN-3AF(Y)/T10890CNK-2 Propeller)

   For instructions on the removal and installation of propeller electric de-ice boots, refer to Hartzell Manuals 180 and 182.

3. Slip Ring Assembly Removal/Rework/Installation (Hartzell HC-B3TN-3AF(Y)/T10890CNK-2 Propeller)

   A. Remove Slip Ring Assembly.
      Refer to Hartzell Manual 181.

   B. Rework Slip Ring Assembly.
      Refer to Hartzell Manual 181.

   C. Install Slip Ring Assembly.
      Refer to Hartzell Manual 180.

4. Slip Ring Alignment Check (Hartzell HC-B3TN-3AF(Y)/T10890CNK-2 Propeller)

   Refer to Hartzell Manual 181.

ICE AND RAIN PROTECTION

PROPELLER ELECTRIC DE-ICE – MAINTENANCE PRACTICES

5. Brush Length Inspection (Hartzell HC-B3TN-3AF(Y)/T10890CNK-2 Propeller)

   Refer to Hartzell Manual 181.

6. Brush Block Assembly Removal / Installation (Hartzell HC-B3TN-3AF(Y)/T10890CNK-2 Propeller)

   A. Remove Brush Block Assembly.
      (1) Ensure that airplane electrical power is off.
      (2) Tag to identify and disconnect electrical wires from brush block assembly.
      (3) Remove screws, washers, and nuts securing brush block assembly to mount.
      (4) Remove shim between brush block assembly and mount. Remove brush block assembly from airplane.

   B. Install Brush Block Assembly.

      NOTE: Before proceeding with brush block installation, ensure that brush block alignment has been accomplished.

      Refer to Hartzell Manual 180.

7. Brush Block Assembly to Slip Ring Alignment (Hartzell HC-B3TN-3AF(Y)/T10890CNK-2 Propeller)

   Refer to Hartzell Manual 181.

8. Propeller De-Ice Timer Removal/Installation

   Refer to basic Airplane Maintenance Manual for removal and installation information.

ICE AND RAIN PROTECTION

PROPELLER FLUID ANTI-ICE – MAINTENANCE PRACTICES

1. General

   A. Propeller anti-ice maintenance practices consist of propeller anti-ice boot removal / inspection / installation and fluid tubes, hoses, slinger ring, and bracket removal / inspection / installation.

   B. Refer to STC Installation Instructions (Hartzell Document 208-3BP-IM) for applicable fluid anti-ice kit part number(s)

2. Propeller Anti-ice Boot (Hartzell HC-B3TN-3AF(Y)/T10890CNB-2 Propeller) Removal / Installation

   For instructions on the removal and installation of propeller fluid anti-ice boots, refer to Hartzell Manual 183.

3. Slinger Ring & Feed Tube Assembly Removal / Inspection / Installation

   For instructions on the removal, inspection, and installation of the slinger ring and feed tubes, refer to Hartzell Manuals 180 and 181.

PROPELLER

CONTENTS

PROPELLER

DESCRIPTION AND OPERATION

1. General

   A. The Hartzell propeller installation consists of a Hartzell Model HC-B3TN-3AF(Y)/T10890CN(B,K)-2 three-bladed, constant-speed, full-feathering, reversible, governor-regulated propeller equipped with aluminum blades. A propeller control lever on the control quadrant in the cockpit establishes a setting in the propeller governor through a linkage to the engine compartment. This setting (of the governor pilot valve) establishes propeller speed by balancing governor-boosted oil pressure/flow against a servo piston in the propeller hub with the action of return springs in the hub and centrifugal counter-weights on the blade shanks acting to drive the servo piston in the opposite direction. Since the servo piston is linked to the blades, its position thus governs their setting or blade angle and hence determines propeller speed. Increasing oil pressure against the piston drives the blades toward low pitch (high RPM) and into reverse while the return springs and counterweights acting against the piston, drive the blades toward high pitch (low RPM) and into feather. The source of propeller system oil is the engine pressure lubrication system boosted to a higher pressure by the propeller governor gear pump.

2. Description

   A. The propeller assembly consists of a hollow steel spider hub, which supports three propeller blades, and also houses an internal oil pilot tube and feather return springs. A hydraulic piston mounted at the front of the propeller spider hub controls movement of propeller blades. The servo piston is connected by a link to the trailing edge root of each blade. Centrifugal counterweights on each blade and feathering springs in servo piston tend to drive servo piston into the feather or high pitch position. The propeller governor oil pressure opposes this movement. The governor oil pressure is applied to servo piston via passages in governor body, an oil transfer tube, an oil transfer housing on propeller shaft, and via the hollow centerbore of propeller shaft and propeller hub. An increase in governor oil pressure moves blades toward low pitch position (increased RPM). A decrease in governor oil pressure allows the blades to move toward high pitch position (decreased RPM) under the influence of feathering springs and blade counterweights.

   B. The servo piston is also connected by three spring-loaded sliding rods to a feedback ring mounted at rear of propeller. A carbon block transmits movement of feedback ring through the propeller-reversing lever to Beta valve on propeller governor. This movement is used to control propeller blade angle from the normal forward low pitch stop to full reverse position.

PROPELLER

PROPELLER - MAINTENANCE PRACTICES

1. General

    A. Maintenance practices for the propeller consist of removal, installation, and adjustment / checks. Adjustment/checks include the following: feather blade angle check and adjustment, low pitch stop check and adjustment, and propeller hub lubrication.

2. Propeller Removal / Installation

    A. Remove Propeller.
        (1) Consult the Hartzell Propeller Owner's Manual Number 139 for specific instructions on the removal of the propeller.

    B. Install Propeller.
        (1) Consult the Hartzell Propeller Owner's Manual Number 139 for specific instructions on the installation of the propeller.

3. Adjustment / Checks

    A. Beta Feedback Ring Axial Runout Check.
        (1) Consult the Hartzell Propeller Overhaul Manual Number 118F for specific instructions on the Beta Feedback Ring Axial Runout Check.

    B. Feather Blade Angle Check and Adjustment.
        (1) Consult the Hartzell Propeller Overhaul Manual Number 118F for specific instructions on the pitch control adjustments.

    C. Low Pitch Stop Check and Adjustment
        (1) Consult the Hartzell Propeller Overhaul Manual Number 118F for specific instructions on the pitch control adjustments.

    D. Propeller Hub Lubrication
        (1) Consult the Hartzell Propeller Owner's Manual Number 139 for specific instructions on the lubrication requirements and procedures.

PROPELLER

DYNAMIC BALANCING - ADJUSTMENT / TEST

1. General

Refer to the latest revision of Hartzell Manual 202A for general information regarding dynamic balancing of the Hartzell HC-B3TN-3AF(Y)/T10890CN(B,K)-2.