

Hartzell Propeller Inc  
One Propeller Place  
Piqua, OH 45356

Installation Instructions  
Hartzell Three Bladed Propeller

Document No. 208-3BP-IM

**CESSNA  
MODEL 208  
SERIES**

FAA Approved



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Hartzell STC ODA-100082-CE

Date

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Rev 3, March 31, 2016

**208-3BP-IM**

**INSTRUCTIONS FOR INSTALLATION OF  
HARTZELL HC-B3TN-AF(Y)/T10890CN(B,K)-2 PROPELLER  
AND D-4897(P) OR D-4897-2(P) SPINNER ON CESSNA  
MODEL 208, 208A AND 208B AIRCRAFT**

**LOG OF REVISIONS**

Revision Number	Revised Pages	Description of Revision	Date
New	--	Original issue	May 21, 2001
1	2, 3, & 4	Added revision log page. Revised airframe de-ice kit reference and installation instructions (2) for Hartzell and McCauley propellers. Corrected parts list B3N0019S prop de-ice kit reference. Removed additional parts table for McCauley propeller with de-ice equipment, added airframe de-ice table. Updated page format.	March 8, 2002
2	1, 2, 3, 4, & 5	Added start-lock equipped propeller model, weight, and parts list information. Deleted commercial part number information. Reformatted pages.	Aug. 20, 2002
3	1, 2, 3, 5, & 6 1, 4, 5, 6 1 3 3 6	Clarified ice protection as either <i>electric deice</i> or <i>fluid (TKS) anti-ice</i> . Numbered all tables. Added B suffix to propeller blade model and D-4897-2P spinner for fluid anti-ice system option. Added fluid anti-ice propeller component weights to Table 1. Specified the required post-installation checks and corrected manual chapter references. Added installation instructions for Hartzell propeller with fluid anti-ice. Added parts list tables for installation of Hartzell propeller with fluid anti-ice.	March 31, 2016

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

## **HARTZELL THREE-BLADED PROPELLER INSTALLATION INSTRUCTIONS**

**Effectivity:** Cessna Models 208, 208A, and 208B (models 208 and 208B must contain Cessna Caravan Service Bulletin CAB00-11 dated August 21, 2000)

**Purpose:** Installation of Hartzell HC-B3TN-3AF(Y)/T10890CN(B,K)-2 three blade (106" dia) propeller and D-4897(P) or D-4897-2(P) spinner assembly.

**Approval:** This installation is FAA approved under a Supplemental Type Certificate.

**References:**

1. Cessna 208 Series Maintenance Manual
2. Cessna 208 Series Illustrated Parts Catalog
3. Hartzell Propeller Manual No. 139, *Propeller Owner's Manual and Logbook*.
4. Aero Twin, Inc., 208 Series Maintenance Manual Supplement

**Man-Hours:** Approximately 5.0 man-hours are required to complete this installation.

**Material:**

Required parts are available from Hartzell Propeller, Inc., One Propeller Place, Piqua, Ohio, 45356-2634, USA. Parts lists are found on pages 4 and 5.

**Weight and Balance:**

The following weight and balance information is applicable to all Caravan Models:

**Table 1. Propeller and associated component weights.**

<b>Item</b>	<b>Weight [lb.]</b>	<b>Arm [in.]</b>
Propeller P/N: HC-B3TN-3AF(Y)/T10890CN(B,K)-2	146.7 lb.	28.5
Spinner	9.0 lb.	24.5
Propeller Electric de-ice (optional)	2.8 lb.	28.0
Propeller Fluid anti-ice (optional)	2.6 lb.	28.0
Propeller Start-locks (optional)	1.0 lb.	28.0

**NOTE: Installation Instructions vary depending on existing propeller. Use appropriate instructions. Please read all steps before beginning installation.**

**A. Installation Instructions for replacement of existing HARTZELL propeller with propeller having no ice protection or an ELECTRIC de-ice system:**

1. Remove the existing Hartzell propeller from the airplane.
  - Refer to chapter 61 of the Cessna 208 Maintenance Manual for removal procedures.
2. (For electric de-ice equipped airplanes only) Refer to BFGoodrich drawing number 5E2715 and installation instructions for installation details of airframe-side (non-rotating) kit 5E2715-2. Reuse or replace existing airframe-side de-ice system components (brush block, brush block bracket, etc.).

- Components in airframe-side kit 5E2715-2 are identical to those specified in airframe-side OEM kit 67-440 (BFGoodrich drawing 7E1559) and therefore may be reused or replaced for the new propeller at the discretion of the customer.

**NOTE: ASSURE THAT BRUSHES ARE ADJUSTED TO THE AFT MOST POSITION OR INSTALL AFTER INSTALLATION OF PROPELLER TO AVOID DAMAGE TO BRUSHES AS THE PROPELLER IS BEING INSTALLED.**

- Refer to BFGoodrich drawing number 5E2715 and installation instructions for installation of components included with BFGoodrich propeller-side de-ice kit 5E2715-1.
3. Install new Hartzell 3-blade propeller on airplane.
    - Refer to chapter 61 of the Cessna 208 Maintenance Manual and to the Propeller Owner's Manual for installation procedures. The latter will supersede the former regarding details specific to this propeller model.
  4. (For electric de-ice equipped airplanes only) Test the operation of the propeller de-icers:

### **CAUTION**

**TO PREVENT OVERHEATING, DO NOT LEAVE THE DE-ICERS ON FOR MORE THAN 1 CYCLE (3 MINUTES). AN ASSISTANT MUST BE POSITIONED AT THE PROPELLER, MUST CONTINUALLY ROTATE THE PROP TO PREVENT SLIP RING DAMAGE, AND TO CHECK FOR HEATING OF ALL THREE BLADES.**

- With the battery switch on and the prop anti-ice circuit breakers pushed in, temporarily place a jumper between terminals "1" and "3" at the pressure switch to test the "auto" function of the propeller de-icers. The propeller de-icers should cycle, 90 seconds on and 90 seconds off, and each blade de-ice boot must get warm. The anti-ice ammeter must read in the green arc during the on portion of the cycle.
  - After the propeller de-icers have cooled, place the "DEICE/ANTI-ICE PROP" switch to the "MANUAL" position and the anti-ice ammeter must read in the green arc.
  - Do not use the propeller anti-ice for the initial 30 minutes of flight after installation to allow the brushes to seat properly on the slip ring.
5. Insert the supplied POH/AFM Supplement in the airplane's POH/AFM.
  6. Update the airplane's weight and balance records and equipment list.
  7. Complete FAA form 337 stating the Propeller has been installed in accordance with this STC.
  8. Make appropriate logbook entries.

### **B. Installation Instructions for replacement of existing McCauley propeller with a propeller having no ice protection or an ELECTRIC de-ice system:**

1. Remove the existing McCauley propeller from the airplane.
  - Refer to chapter 61 of the Cessna 208 Maintenance Manual for removal procedures.
2. (For electric de-ice equipped airplanes only) Refer to BFGoodrich drawing number 5E2715 and installation instructions for installation details of airframe-side (non-rotating) kit 5E2715-3. Replace existing airframe-side de-ice system components: brush block, brush

block bracket, shim and brush attachment hardware with new components. Re-use remaining components (Timer, ammeter, shunt, switch, etc.).

**NOTE: ASSURE THAT BRUSHES ARE ADJUSTED TO THE AFT MOST POSITION OR INSTALL AFTER INSTALLATION OF PROPELLER TO AVOID DAMAGE TO BRUSHES AS THE PROPELLER IS BEING INSTALLED.**

- Refer to BFGoodrich drawing number 5E2715 and installation instructions for installation of components included with BFGoodrich propeller-side de-ice kit 5E2715-1.
3. Install new Hartzell 3-blade propeller on airplane.
    - Refer to chapter 61 of the Cessna 208 Maintenance Manual and to the Propeller Owner's Manual for installation procedures. The latter will supersede the former regarding details specific to this propeller model.
    - Some re-rigging of the reversing lever and controls will be required - follow the procedures outlined in chapters 61 and 76 of the Cessna 208 Maintenance Manual and perform the following checks:
      - Reverse Power test/adjustment (Ch. 76)
      - Maximum Propeller RPM test/adjustment (Ch. 76)
      - Beta Switch adjustment (Ch. 61)
  4. (For electric de-ice equipped airplanes only) Test the operation of the propeller de-icers:

### **CAUTION**

**TO PREVENT OVERHEATING, DO NOT LEAVE THE DE-ICERS ON FOR MORE THAN 1 CYCLE (3 MINUTES). AN ASSISTANT MUST BE POSITIONED AT THE PROPELLER, MUST CONTINUALLY ROTATE THE PROP TO PREVENT SLIP RING DAMAGE, AND TO CHECK FOR HEATING OF ALL THREE BLADES.**

- With the battery switch on and the prop anti-ice circuit breakers pushed in, temporarily place a jumper between terminals "1" and "3" at the pressure switch to test the "AUTO" function of the propeller de-icers. The propeller de-icers should cycle, 90 seconds on and 90 seconds off, and each blade de-ice boot must get warm. The anti-ice ammeter must read in the green arc during the on portion of the cycle.
  - After the propeller de-icers have cooled, place the "DEICE/ANTI-ICE PROP" switch to the "MANUAL" position and the anti-ice ammeter must read in the green arc.
  - Do not use the propeller anti-ice for the initial 30 minutes of flight after installation to allow the brushes to seat properly on the slip ring.
5. Insert the supplied POH/AFM Supplement in the airplane's POH/AFM.
  6. Update the airplane's weight and balance records and equipment list.
  7. Complete FAA form 337 stating the Propeller has been installed in accordance with this STC.
  8. Make appropriate logbook entries.

### **C. Installation Instructions for replacement of an existing propeller with a propeller having fluid (TKS) anti-ice system:**

1. Remove the existing propeller from the airplane.
  - Refer to chapter 61 of the Cessna 208 Maintenance Manual for removal procedures.

2. Install new Hartzell 3-blade propeller on airplane.
  - Refer to chapter 61 of the Cessna 208 Maintenance Manual and to the Propeller Owner's Manual for installation procedures. The latter will supersede the former regarding details specific to this propeller model.
  - Some re-rigging of the reversing lever and controls may be required - follow the procedures outlined in chapters 30, 61, and 76 of the Cessna 208 Maintenance Manual and perform the following checks:
    - Installation and Adjustment of Fluid Anti-Ice System Propeller Components (Ch. 30)
    - Reverse Power test/adjustment (Ch. 76)
    - Maximum Propeller RPM test/adjustment (Ch. 76)
    - Beta Switch adjustment (Ch. 61)
3. Insert the supplied POH/AFM Supplement in the airplane's POH/AFM.
4. Update the airplane's weight and balance records and equipment list.
5. Complete FAA form 337 stating the Propeller has been installed in accordance with this STC.
6. Make appropriate logbook entries.

**Table 2. Parts List for Aircraft Without De-ice Equipment; Without Start-locks**

Qty	Part Number	Item Description
1	HC-B3TN-3AF/ T10890CN-2	Propeller Assembly
8	B-3339	Bolt, Double Hexagon
8	A-2048-2	Washer
1	C-3317-230	O-Ring
1	D-4897(P)	Spinner Assembly
1	208-3BP-IM	Installation Instructions
1	SA02181AK	STC Document
1	208-3BP-AFMS	Airplane Flight Manual Supplement

**Table 3. Parts List for Aircraft Without De-ice Equipment; With Start-Locks**

Qty	Part Number	Item Description
1	HC-B3TN-3AFY/ T10890CN-2	Propeller Assembly
8	B-3339	Bolt, Double Hexagon
8	A-2048-2	Washer
1	C-3317-230	O-Ring
1	D-4897(P)	Spinner Assembly
1	208-3BP-IM	Installation Instructions
1	SA02181AK	STC Document
1	208-3BP-AFMS	Airplane Flight Manual Supplement

**Table 4. Parts List for Aircraft with ELECTRIC De-ice Equipment; Without Start-Locks**

Qty	Part Number	Item Description
1	HC-B3TN-3AF/ T10890CNK-2	Propeller Assembly
8	B-3339	Bolt, Double Hexagon
8	A-2048-2	Washer
1	C-3317-230	O-Ring
1	D-4897(P)	Spinner Assembly
1	5E2715-1	De-Ice Kit for Propeller (BFGoodrich)
1	208-3BP-IM	Installation Instructions
1	SA02181AK	STC Document
1	208-3BP-AFMS	Airplane Flight Manual Supplement

**Table 5. Parts List for Aircraft with ELECTRIC De-ice Equipment; With Start-Locks**

Qty	Part Number	Item Description
1	HC-B3TN-3AFY/ T10890CNK-2	Propeller Assembly
8	B-3339	Bolt, Double Hexagon
8	A-2048-2	Washer
1	C-3317-230	O-Ring
1	D-4897(P)	Spinner Assembly
1	5E2715-1	De-Ice Kit for Propeller (BFGoodrich)
1	208-3BP-IM	Installation Instructions
1	SA02181AK	STC Document
1	208-3BP-AFMS	Airplane Flight Manual Supplement

**Table 6. Additional Airframe Parts required for installations with ELECTRIC de-ice equipment**

Qty	Part Number	Item Description
A/R	5E2715-2	De-ice Kit for Airframe (BFGoodrich) Hartzell Propeller Replacement
1	5E2715-3	De-ice Kit for Airframe (BFGoodrich) McCauley Propeller Replacement

**Table 7. Parts List for Aircraft with FLUID Anti-ice Equipment; Without Start-Locks**

Qty	Part Number	Item Description
1	HC-B3TN-3AF/ T10890CNB-2	Propeller Assembly
8	B-3339	Bolt, Double Hexagon
8	A-2048-2	Washer
1	C-3317-230	O-Ring
1	D-4897-2(P)	Spinner Assembly
1	105014	<i>Propeller Anti-Ice Kit</i>
1	208-3BP-IM	Installation Instructions
1	SA02181AK	STC Document
1	208-3BP-AFMS	Airplane Flight Manual Supplement

**Table 8. Parts List for Aircraft with FLUID Anti-ice Equipment; With Start-Locks**

Qty	Part Number	Item Description
1	HC-B3TN-3AFY/ T10890CNB-2	Propeller Assembly
8	B-3339	Bolt, Double Hexagon
8	A-2048-2	Washer
1	C-3317-230	O-Ring
1	D-4897-2(P)	Spinner Assembly
1	105014	<i>Propeller Anti-Ice Kit</i>
1	208-3BP-IM	Installation Instructions
1	SA02181AK	STC Document
1	208-3BP-AFMS	Airplane Flight Manual Supplement

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