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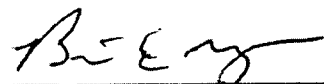
**INSTRUCTIONS FOR INSTALLATION  
OF HARTZELL HC-E2YR-2BTF/FC7693F(B)+1 PROPELLERS  
ON PIPER PA-(E)23-250 AZTEC AIRCRAFT  
STC SA02874CH-D**

**LOG OF REVISIONS**

Revision	Revised Pages	Description of Revision	Date
IR	All	Initial Release	12/14/10

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

FAA Approved



Brian E. Meyer  
STC ODA administrator  
Hartzell STC ODA-100082-CE

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*Please read these instructions and the Instructions for Continued Airworthiness before starting installation. If you have any questions regarding installation of this STC, please contact Hartzell Propeller at:*

*Phone: (937) 778-4379 or  
1-800-942-7767*

*E-mail: [techsupport@hartzellprop.com](mailto:techsupport@hartzellprop.com)*

**GENERAL**

These STC installation instructions provide the necessary information to install HC-E2YR-2BTF/FC7693F(B)+1 propellers with 103409( ) composite spinners on the Piper PA-23-250 Aztec aircraft (the spinner alphanumeric suffix in parentheses will indicate finish and color).

It is responsibility of the installer to verify compatibility of this STC with previously approved modifications.

Hartzell propeller ice protection system service manuals are referenced in the propeller ice protection system installation drawing 103720. These manuals can be viewed or obtained via the internet on the Hartzell Propeller website ([www.hartzellprop.com](http://www.hartzellprop.com)). The following manuals are located in the "Product Support" section under "HPI Ice Protection System Manuals."

Manual 180 – Propeller Ice Protection System Manual  
Refer to "De-Ice Kits for Counterweighted Compact Propellers" to see illustrated parts lists for 103719 de-ice kit.

Manual 181 – Propeller Ice Protection System Component Maintenance Manual

Manual 182 – Propeller Electrical De-Ice Boot Removal and Installation Manual.

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**APPLICABLE MODELS**

(All eligible models use Lycoming (T)IO-540 engines rated 250 Hp @ 2575 RPM)

MODEL NUMBER	YEAR	SERIAL NUMBER	ELIGIBLE ENGINES
PA-(E)23-250C	'64-'68	27-2505 thru 27-3943	IO-540-C4B5
PA-(E)23-250D	'69-'70	27-3944 thru 27-4573	IO-540-C4B5, TIO-540-C1A
PA-(E)23-250E	'71-'75	27-4574 thru 27-4916, 27-7304917 thru 27-7554168	IO-540-C4B5, TIO-540-C1A
PA-23-250F	'76-'81	27-7654001 thru 27-8154030	IO-540-C4B5, TIO-540-C1A

NOTE: Aircraft with the IO-540-C1B5 engine with or without the AirResearch turbocharger installation are NOT eligible for this STC.

1. Remove the original propellers and spinners per the applicable aircraft maintenance manual procedures.
2. Install the spinner bulkhead on the new propeller hub per Hartzell Owner's Manual 115N using the "spinner bulkhead to propeller hub" instructions in the "spinner pre-installation" section of the manual.  
  
NOTE: When installing the bulkhead begin installation with the 0.250" spacer between spinner bulkhead and propeller hub ("Area 2" as shown in Manual 115N, install the remaining washer behind the bulkhead under the nut ("Area 1") on each hub-clamping bolt (4 places). Nuts are torqued per Manual 115( ).
3. If the new propellers have electrothermal de-ice, route, secure, hook-up and torque propeller de-ice wires and hardware to the spinner bulkhead in accordance with Ice Protection Installation Drawing 103720.
4. Install new propellers and spinner dome on aircraft in accordance with Hartzell Owner's Manual number 115N. Follow installation instructions for "Installation of "R" Flange Propellers" in Manual 115N. Also reference the Piper service manual section appropriate to the aircraft S/N and configuration being modified.

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5. If the new propellers have electrothermal de-ice, hook-up and torque the de-ice wires and hardware from the spinner bulkhead to the engine starter ring gear/slip ring assembly as shown in the Ice Protection Installation Drawing 103720.
6. Attach Hartzell Propeller Inc. Airplane Flight Manual Supplement AFMS 020110 to the existing Pilot's Operating Handbook and FAA Approved Airplane Flight Manual.
7. Revise weight and balance records to show:

**Removal** of the original propellers and spinners

Check equipment list in Pilot's Operating Handbook/FAA Approved Airplane Flight Manual for appropriate propeller weight and moment arm.

**Example:**

Weight of propeller = 60.3 lbs (from 1979 Aztec F equipment list)  
Moment arm = 24.0 in.

Weight of spinner = 4.0 lbs (from 1979 Aztec F equipment list)  
Moment arm = 24 in.

NOTE: The combined weight of a HC-2YR-2RBSF/F8465B-7R propeller (with de-ice) and Piper spinner removed from the 1979 "F" model used during STC development was 67.4 lbs. It is recommended the installer weigh the removed propellers to confirm this weight in order to accurately calculate the new weight and balance.

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**Installation** of Hartzell HC E2YR-2BTF/FC7693F (B) +1 propeller and Hartzell 103409( ) spinner:

Weight of propeller and spinner (**with** de-ice) = 68.1 lbs.  
Moment arm = 24.0 in.

Weight of propeller spinner (**without** de-ice) = 67.3 lbs  
Moment arm = 24.0 inches

8. Perform ground engine run for a functional and leak check of the Hartzell propeller installation.
9. Make the appropriate logbook entries and return aircraft to service with FAA Form 337 referencing STC.
10. Fly a functional check-flight using normal procedures, note maximum RPM setting and readjust governor high-RPM stop if necessary.
11. Post-installation dynamic balance of the propeller/engine combination is recommended, but not required, per Section 61-00-15 of Hartzell Owner's Manual 115N.

END