

INST\_080808\_98FLD

STC SA02677CH-D

August 8, 2008

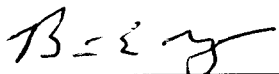
INSTRUCTIONS FOR FIELD INSTALLATION  
OF A

HARTZELL HC-I3YR-1N/N7605(K)+2 or HC-I3Y1R-1N/N7605(K)+2 PROPELLER  
and D-6750-1(P) SPINNER  
ON PIPER PA-46-350P (MALIBU MIRAGE) AIRCRAFT Serial Number 4636132 and up,  
and PIPER PA-46R-350T (MATRIX) AIRCRAFT Serial Number 4692001 and up.

LOG OF REVISIONS

Revision	Revised Page(s)	Description of Revision	Engineer	Date
New	All	Original Release	B. Meyer	8/8/08

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

FAA Approved   
Brian E. Meyer  
DAS administrator  
Hartzell DAS-100082-CE

Date MARCH 13, 2009

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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)*

**APPLICABLE MODELS**

Piper Models PA-46-350P (Malibu Mirage) and PA-46R-350-T (Matrix) as listed below:

Aircraft Model	Aircraft Serial Number
PA-46-350P	4636132 and up
PA-46R-350T	4692001 and up

**NOTES:** These instructions require that the aircraft be in the type-certificated configuration with the three-blade Hartzell HC-I3YR-1E/7890(K) propeller installed. If any other propeller has been installed, the aircraft must be returned to the original type-certificated configuration before installing this STC.

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**Section A, Firewall-Forward Installation**

- A1. Remove original propeller and spinner.
- A2. Install new spinner bulkhead on the propeller per Hartzell Manual 145.
- A3. Install propeller de-ice system rotating components on the propeller per Hartzell Drawing 102960.
- A4. Install new propeller and spinner dome on the aircraft in accordance with Hartzell Manual 145.
- A5. Install the engine-mounted propeller de-ice equipment per Hartzell Drawing 102960.

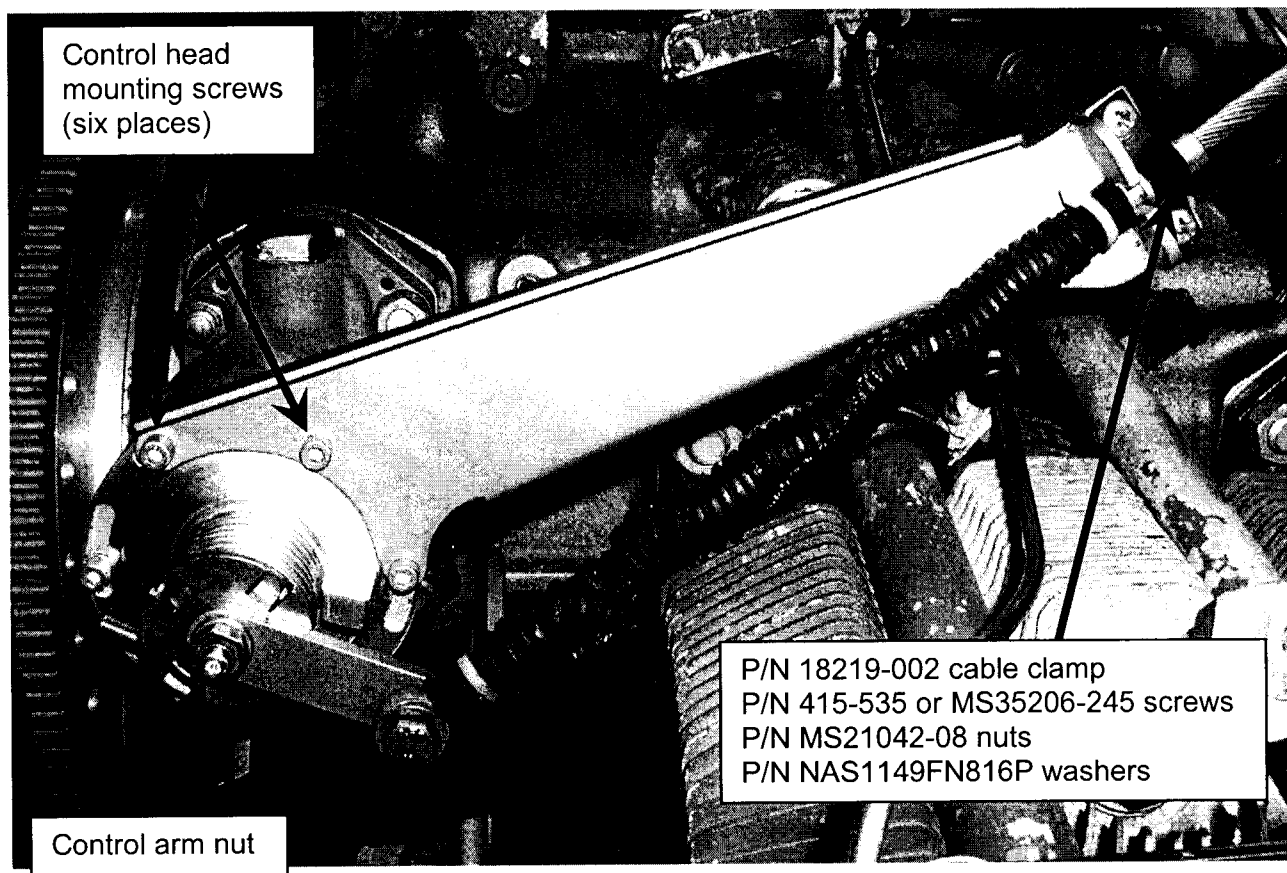
**Section B, Optional Governor Installation**

- B1. Hartzell governor S-1-30 may be installed in conjunction with this STC, however Hartzell governor models V-5-2 and V-11-1 remain approved and are compatible with this STC.
- B2. Remove current governor using the latest version of the aircraft maintenance manual.
- B3. Install Hartzell S-1-30 governor using the latest version of the aircraft maintenance manual. See Figure 1 for governor installation.
- B4. Attach the governor control cable to the bracket per the aircraft maintenance manual using the cable attachment Clamp (Piper P/N 18219-002), Screws (Piper P/N 415-535 or MS35206-245), Nut (MS21042-08) and Washer (NAS1149FN816P).
- B5. Attach cable rod end to governor control arm with bolt, nut and washers specified in airplane parts catalog and as shown in Figure 2. Verify full travel of propeller control lever in cockpit.
- B6. Adjust governor control arm and/or head only if necessary to obtain full travel of cockpit propeller control lever. The control arm can be reindexed on the shaft for large adjustments (7-15°) by removing the control shaft nut and washer (see Figure 1). Reposition the arm on the control shaft hex key as necessary. The control arm can be moved in smaller increments by flipping the arm and using the double-cut hex pattern. Reinstall arm, washer, nut and torque to 72-96 in-pounds.

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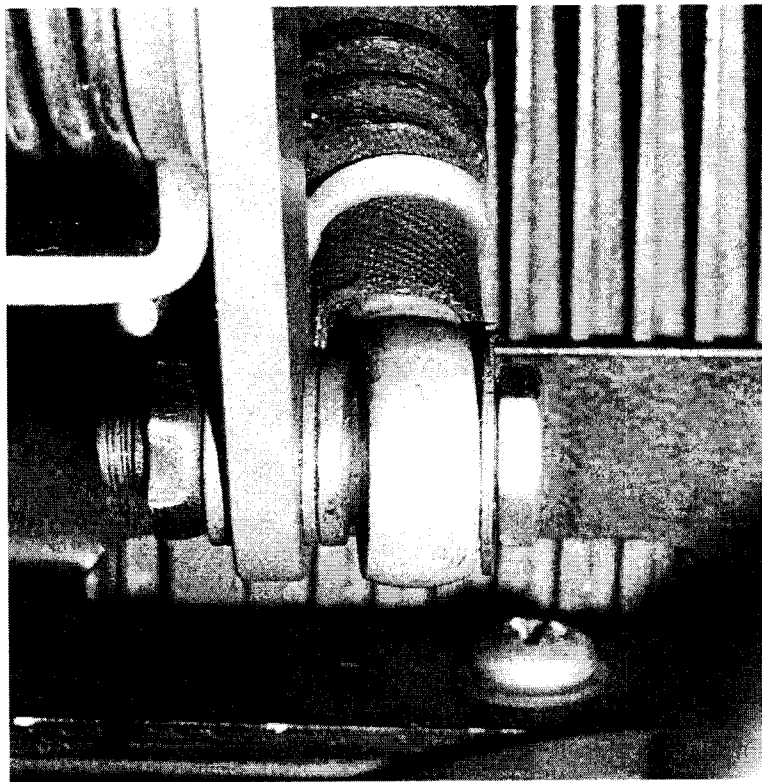
The control head can also be rotated for small adjustments ( $\sim 1^\circ$ ) if necessary to utilize the full travel of the propeller control lever. To adjust the head, loosen the six socket head cap screws securing the control head. Rotate the control head as necessary and snug the screws finger-tight. After adjustments are complete, remove the six mounting screws individually, coat threads of screw with Loctite 242 and torque the screws holding the cable bracket to 21-25 in-pounds (Note: that is inch-pounds, NOT foot-pounds).



**Figure 1**

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**Figure 2**

**Section C, Installation Functional Checks**

**CAUTION: OPERATION OF THE PROPELLER DE-ICE SYSTEM WITHOUT THE ENGINE RUNNING IS LIMITED TO 10 SECONDS OR SEVERE DAMAGE TO THE COMPOSITE BLADES MAY RESULT.**

- C1. With aircraft secured, start engine and cycle propeller several times to fill the propeller cylinder with oil and verify governor function. At 1200 RPM, turn on propeller de-ice by pushing the *PROP HEAT* button on the de-ice switch panel. Verify propeller de-ice functions according to Section 9 of the Pilots Operating Handbook.
- C2. Shut down engine. Check engine oil level and replenish as necessary.

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**Section D, Documentation**

- D1. For PA-46-350P Mirage aircraft attach Hartzell Propeller Inc. Airplane Flight Manual Supplement AFMS\_080808\_350P98 to existing Piper Airplane Flight Manual.
- D2. For PA-46R-350T Matrix aircraft attach Hartzell Propeller Inc. Airplane Flight Manual Supplement AFMS\_080808\_350T to existing Piper Airplane Flight Manual.
- D3. Revise weight and balance records to show the removal of the original propeller and spinner (and governor if applicable) and the addition of the following equipment at the same moment arm:

	Weight (pounds)
Propeller, Hartzell (HC-I3YR-1N/7605K+2)	63.5
Or, propeller, Hartzell (HC-I3Y1R-1N/7605K+2)	59.0
Spinner, Hartzell (D-6750-1(P))	5.0
Governor, Hartzell S-1-30 (optional)	3.3

Note: For aircraft without propeller de-ice subtract 0.8 pounds from the propeller weights above.

- D4. Make aircraft logbook entry and return aircraft to service with FAA Form 337 referencing STC.
- D5. Perform a functional check-flight using normal procedures, note maximum RPM setting and readjust governor high-RPM stop if necessary.
- D6. Post-installation dynamic balance of the propeller/engine combination is recommended but not required. Dynamic balance information is provided in the Maintenance Practices section of Hartzell Owner's Manual 145.