PILATUS AIRCRAFT LTD. CH-6371 STANS, SWITZERLAND

# SERVICE LETTER

**SUBJECT: HARTZELL PROPELLER INC. SERVICE LETTER (SL) HC-SL-30-283 REVISION 1**

To all Customers, Operators and Service Centers: Date: Apr 22/08

This Service Letter is issued to draw attention to the following vendor information:

**HARTZELL SL HC-SL-30-283 Revision 1 - Propeller - De-ice Boot Leadwire Repair Procedure**

It is possible for the propeller de-ice boot leadwires to come loose from the shank of the propeller blade. The leadwires can then touch the spinner dome and be damaged. This can result in failure of the propeller de-icing. Hartzell SL HC-SL-30-283 gives the procedure to bond the leadwires to the shank. The SL also gives instructions to inspect the leadwires at each 100 hour or annual inspection, or at the convenience of the operator (whichever comes first).

Pilatus recommends all Customers, Operators and Service Centers to read and comply with Hartzell SL HC-SL-30-283 to prevent failure of the propeller de-icing system.

Operators requiring further information on this subject, please contact one of the addresses given below:

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**Attachments: HARTZELL SL HC-SL-30-283 REVISION 1**

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# HARTZELL PROPELLER INC.
# SERVICE LETTER

## TRANSMITTAL SHEET

## HC-SL-30-283

## Propeller - De-ice Boot Leadwire Repair Procedure

March 10, 2008

This page transmits Revision 1 to Service Letter HC-SL-30-283.

- Original Issue, dated Mar 04/08
- Revision 1, dated Mar 10/08

Propeller assemblies that have previously complied with the inspections required in a previous revision of this Service Letter are not affected by this revision.

FAA approval has been obtained on technical data in this publication that affects type design.

Changes are shown by a change bar in the left margin of the revised pages.

This revision is issued to change the following in the Service Letter:

- Clarified that if one leadwire is loose, damaged, or frayed, all leadwires on the propeller assembly must be repaired
- Removed references to the 100 hour inspection
- Added Methyl Propyl Ketone (MPK) as optional solvent
- Added requirement to make maintenance record entry of repair

# HARTZELL PROPELLER INC.

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## TRANSMITTAL SHEET

## HC-SL-30-283

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# HARTZELL PROPELLER INC.

# SERVICE LETTER

## HC-SL-30-283

## Propeller - De-ice Boot Leadwire Repair Procedure

1. Planning Information

   A. Effectivity

      (1) Hartzell HC-(D,E)4(A,N,P)-( ) lightweight turbine propellers with aluminum blades are affected by this Service Letter.

      (2) Hartzell ( )HC-(C,E,H,J)( )Y( )-( ) compact propellers with aluminum blades are affected by this Service Letter.

      NOTE: Affected propellers required the de-ice boot leadwire to be bonded to the blade shank.

   B. Reason

      (1) Hartzell has received reports from the field of de-ice boot leadwires coming loose from the blade shank. The leadwires are bonded to the blade shank with adhesive.

      (2) When the de-ice boot leadwires are loose, the leadwires may come in contact with the spinner dome and be damaged. If the damage is excessive the leadwire may fail.

      (3) This Service Letter provides instructions to rebond the leadwire to the blade shank.

      (4) Rebonding the leadwires to the blades should prevent further damage.

      (5) Regulatory action is not expected.

   C. Description

      (1) This Service Letter provides instructions for a visual inspection of the de-ice boot leadwires at each aircraft inspection or if a de-ice system problem occurs.

      (2) This Service Letter provides instructions to bond the de-ice boot leadwires to the blade shank.

   D. Compliance

      (1) At each 100 hour, or annual inspection, or at customer convenience, whichever occurs first or if a de-ice system problem occurs, perform the visual inspection specified in the Accomplishment Instructions of this Service Letter.

      (2) If the de-ice boot leadwires can contact the spinner dome and any de-ice boot leadwire is not bonded to the blade, bond the leadwires to each blade in accordance with the Accomplishment Instructions in this Service Letter, before further flight.

(3) If the de-ice boot leadwires are damaged or frayed and wiring is exposed, replace the de-ice boot in accordance with the Accomplishment Instructions in this Service Letter, before further flight.

E. Approval

(1) FAA approval has been obtained on technical data in this publication that affects type design.

F. Manpower

(1) No additional man hour are required when the inspection is performed at preflight inspection.

(2) Approximately 1.0 man hour is required for each propeller assembly to bond the de-ice boot leadwires to the blade.

(3) Approximately 2.0 man hour are required to remove and install one de-ice boot.

G. References

(1) Hartzell Owner's Manual 115N (61-00-15)

(2) Hartzell Owner's Manual 149 (61-00-49)

(3) Hartzell Application Guide 159 (61-02-59)

(4) Hartzell Propeller Ice Protection System Manual 180 (30-61-80)

(5) Hartzell Propeller Electrical De-ice Boot Removal and Installation Manual 182 (61-12-82)

(6) Hartzell Standard Practices Manual 202A (61-00-02), Volume 7, Consumable Materials

H. Other Publications Affected

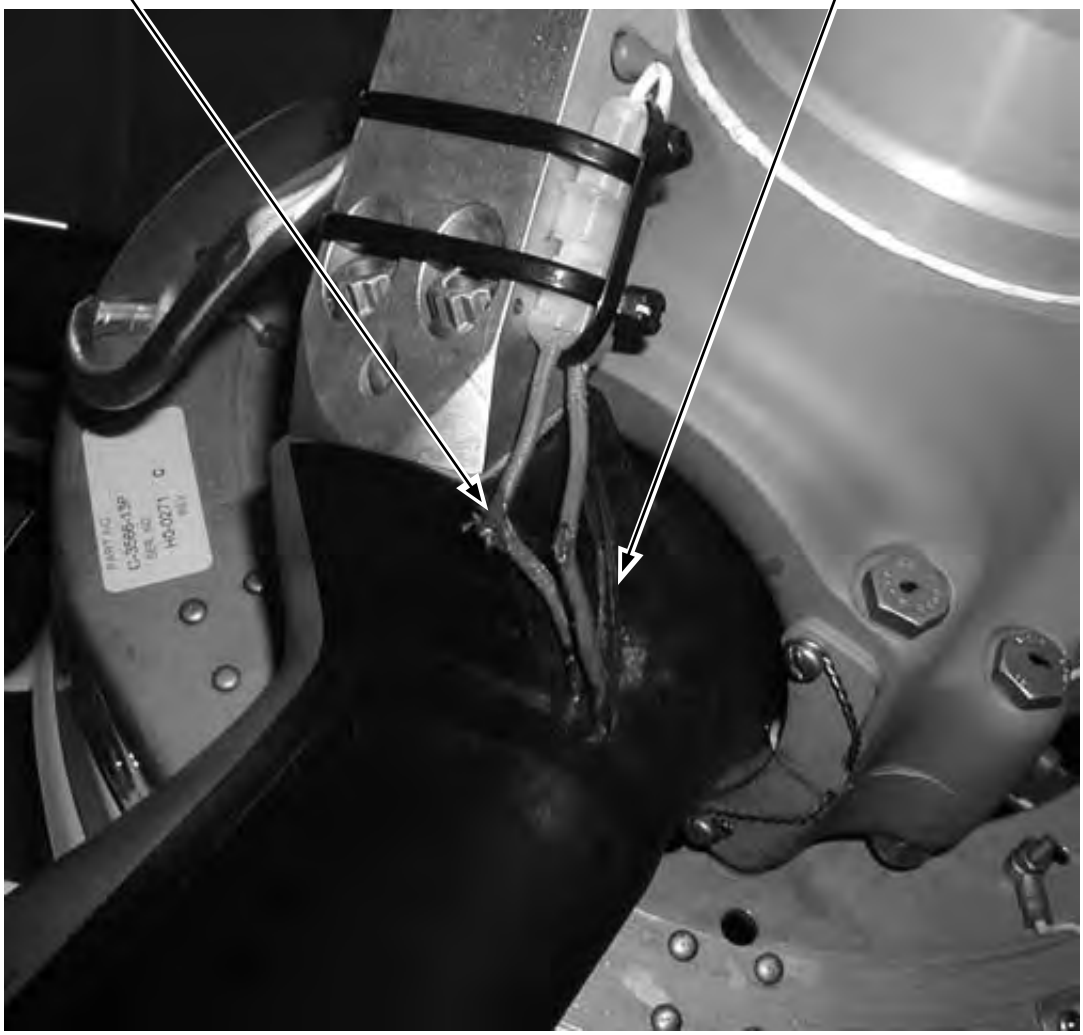
(1) Hartzell Propeller Electrical De-ice Boot Removal and Installation Manual 182 (61-12-82)

(2) Hartzell Propeller Ice Protection System Manual 180 (30-61-80)

# SERVICE LETTER

## HC-SL-30-283

## Propeller - De-ice Boot Leadwire Repair Procedure




NOTE: The configuration of the tie straps will vary with propeller model and installation.

**Damaged De-ice Boot Leadwires**
**Figure 1**

2. Material Information

A. Expendables

| CM Number | Part Number | Keyword | Qty |
|---|---|---|---|
| CM11 | N/A | Acetone | AR |
| CM71 | A-6741-71 | Loctite 495 | AR |
| CM106 | A-6741-106 | Methyl Ethyl Ketone (MEK) | AR |
| CM145 | A-6741-145-1 | Paint, Black Touch-up | AR |
| N/A | A-150 (Vendor P/N) | Tempo, Touch-up, Black | AR |
| N/A | N/A | Devcon 14240 Epoxy Gel | AR |
| N/A | N/A | Methyl Propyl Ketone (MPK) | AR |
| N/A | N/A | Masking materials | AR |
| N/A | N/A | Clean lint free cloth | AR |
| N/A | N/A | Paint brush | AR |
| N/A | N/A | Tongue Depressor | AR |
| N/A | N/A | Latex glove | AR |
| N/A | B-3852-( )-0 | Tie Strap | AR |

NOTE: Refer to Hartzell Propeller Ice Protection System Manual 180 (30-61-80) for the applicable tie strap part numbers.

B. Special Tooling (Optional)

| CM Number | Part Number | Keyword | Qty |
|---|---|---|---|
| N/A | N/A | Non-metallic scraper | 1 |

NOTE: All CM references in this Service Letter are to the Consumable Materials chapter of Hartzell Standard Practices Manual 202A (61-01-02).

3. Accomplishment Instructions

A. De-ice System Discrepancy

(1) If a system discrepancy occurs,

(a) Use an applicable light source and look through the spinner dome blade cut-outs. Visually inspect for damage to the leadwires. Refer to Figure 1.

1 If the leadwires are not damaged and are bonded securely to the blade, perform de-ice system check in accordance with the aircraft maintenance manual.

2 If the leadwires are damaged or frayed but wiring is not exposed, proceed to paragraph 3.C., Bonding De-ice Boot Leadwires to Blade and perform de-ice system check in accordance with the aircraft maintenance manual.

3 If the leadwires are damaged or frayed and wiring is exposed, de-ice boot replacement is required. Proceed to paragraph 3.D, De-ice Boot Removal.

B. 100 Hour or Annual Inspection

(1) At each 100 hour, or annual inspection, or at customer convenience, whichever occurs first, use an applicable light source and look through the spinner dome blade cut-outs. Verify that the de-ice boot leadwires are bonded securely to the blade. Refer to Figure 1.

(a) If the leadwires are bonded securely to the blade or the de-ice leadwires can not contact the spinner dome, further action is not required until next inspection.

(b) If the leadwires are loose, visually inspect for damage to the leadwires.

NOTE: Spinner dome removal may be required for inspection of the leadwires. If required, remove the spinner dome in accordance with the applicable Hartzell Owner's Manual.

1 If damage is not found and the de-ice leadwires can not contact spinner dome, bonding the de-ice boot leadwires to the blade is optional. If required proceed to paragraph 3.C., Bonding De-ice Boot Leadwires to Blade.

2 If the leadwires are damaged or frayed but wiring is not exposed, proceed to paragraph 3.C., Bonding De-ice Boot Leadwires to Blade.

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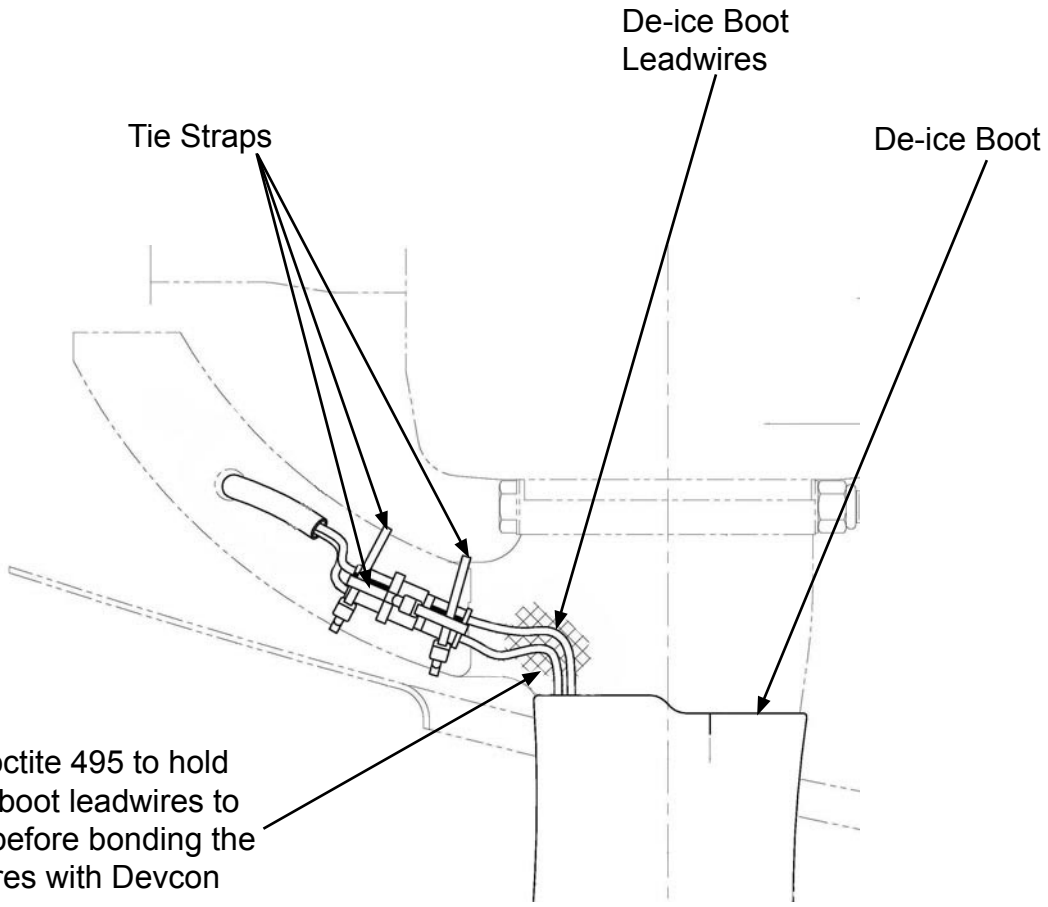
## HC-SL-30-283

## Propeller - De-ice Boot Leadwire Repair Procedure



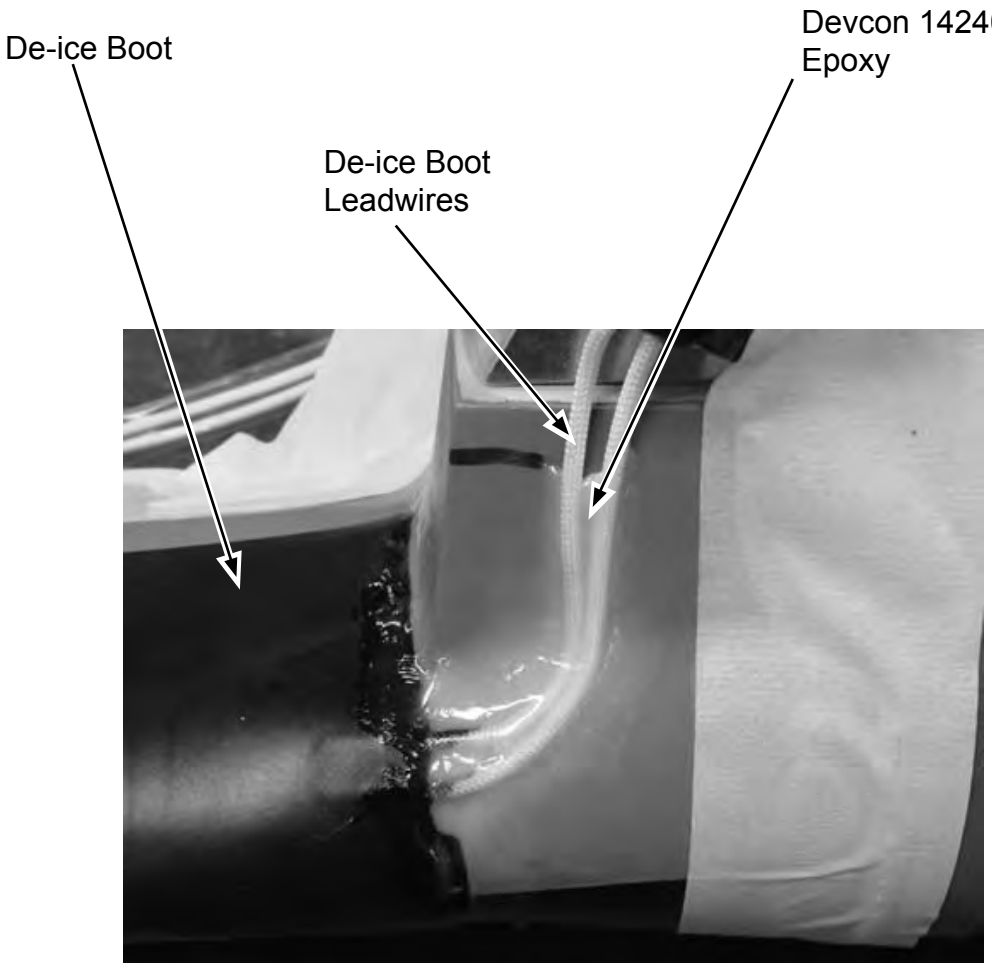

NOTE: The configuration of the tie straps and the de-ice boot leadwires will vary with propeller model and installation.

**Securing Leadwires with Loctite 495**
**Figure 2**

# SERVICE LETTER

## HC-SL-30-283

## Propeller - De-ice Boot Leadwire Repair Procedure




NOTE: The configuration of the de-ice boot leadwires will vary with propeller model and installation.

**Securing Leadwires with Devcon Epoxy**
**Figure 3**

3 If the leadwires are damaged or frayed and wiring is exposed, de-ice boot replacement is required. Proceed to paragraph 3.D, De-ice Boot Removal.

C. Bonding De-ice Boot Leadwires to Blade

(1) Remove the spinner dome in accordance with the applicable Hartzell Owner's Manual.

(2) If a loose, damaged, or frayed leadwire is found, all leadwires on the propeller assembly should be rebonded to the blades.

(3) If applicable masking is performed, the repair may be performed on the aircraft. Propeller disassembly is not required. Refer to paragraph 3.C.(8) for masking instructions.

(4) If required, make note of the location of the connector plugs and the type and location of the tie straps.

(5) If required, remove the tie straps holding the connector plugs to the counterweight.

NOTE: Removal of the tie straps is not required. The bonding of the de-ice boot leadwires may be performed with the tie straps installed.

(6) If required, disconnect the plugs of the de-ice boot leadwire connector and the wire harness connector.

CAUTION: DO NOT PULL OR STRETCH THE DE-ICE BOOT LEADWIRES. PULLING OR STRETCHING MAY CAUSE THE LEADWIRES TO SEPARATE FROM THE DE-ICE BOOT.

(7) Move the de-ice boot leadwire away from the area on the blade where the leadwires will be bonded.

(8) Hartzell recommends that a de-ice boot resistance check be performed before bonding the leadwires to the blade. Measure the electrical resistance of the de-ice boot in accordance with Hartzell Propeller Electrical De-ice Boot Removal and Installation Manual 182 (61-12-82).

(a) If the resistance measurement is within the resistance values specified, proceed to paragraph 3.C.(9).

(b) If the resistance measurement is not within the resistance values specified, replace the de-ice boot. Proceed to paragraph 3.D., De-ice Boot Removal.


**Paint over the Devcon Epoxy**
**Figure 4**

(9) Mask the hub and de-ice boot.

(a) Using masking material, mask the inboard edge of the de-ice boot and around the counterweight knob to prevent solvent from loosening the de-ice boot.

(b) Using masking material, mask the blade/hub socket to prevent solvent from entering the hub.

(10) Using solvent, acetone CM11, methyl propyl ketone (MPK), or methyl ethyl ketone (MEK) CM106, and a non-metallic scrapper or lint free cloth, remove the remaining adhesive.

(11) Using solvent, acetone CM11, methyl propyl ketone (MPK), or methyl ethyl ketone (MEK) CM106, clean the leadwires and the area of the blade where the leadwires will be bonded.

(12) Permit the surface to dry, or, using a clean, lint-free cloth, wipe the surface dry.

(13) If required, reconnect the plugs of the de-ice boot leadwire connector and the wire harness connector. Refer to Figure 2.

(14) If required, use the applicable tie straps and secure the connected plugs together. Refer to Figure 2. Refer to Hartzell Propeller Ice Protection System Manual 180 (30-61-80) for the applicable tie strap part numbers.

(15) If required, use the applicable tie strap and secure the connector plugs and leadwires to the counterweight. Refer to Figure 2. Refer to Hartzell Propeller Ice Protection System Manual 180 (30-61-80) for the applicable tie strap part numbers.

NOTE: Hartzell Propeller Ice Protection System Manual 180 (30-61-80) is available on the Hartzell website, www.hartzellprop.com\productsupport.

(16) Remove the masking material from the blade/hub socket.

(17) Position the de-ice boot leadwires on the blade. Refer to Figure 2.

(18) Use Loctite 495, CM71, to hold the de-ice boot leadwires to the blade.

(19) Permit the Loctite 495 CM71 to dry.

(20) Bonding the de-ice boot leadwires

(a) Mix the Devcon 14240 epoxy in accordance with manufacturer's instructions.

(b) Using a tongue depressor, gloved hand or similar method and the Devcon 14240 epoxy, bond the de-ice boot leadwires to the blade. The epoxy should cover the leadwires and taper to the blade surface. Epoxy should stop approximately 0.25 inch (6.53 mm) from the edge of the counterweight knob surface. Refer to Figure 3.

(c) Hartzell recommends using a gloved finger, damp sponge or damp, lint free cloth to smooth and blend the surface of the epoxy.

(d) Permit the epoxy to set in accordance with manufacturer's instructions.

(21) Mask the blade as shown in Figure 4.

(22) Using black touch-up paint, paint the epoxy and the blade surface as shown in Figure 4.

(23) Make an appropriate maintenance record entry of compliance with this Service Letter.

D. De-ice Boot Removal

(1) Remove a de-ice boot in accordance with Hartzell Propeller Electrical De-ice Boot Removal and Installation Manual 182 (61-12-82).

E. De-ice Boot Installation

(1) Remove and install a de-ice boot in accordance with Hartzell Propeller Electrical De-ice Boot Removal and Installation Manual 182 (61-12-82).

(2) Bond the de-ice boot leadwires to the blade in accordance with this Service Letter.