

HARTZELL PROPELLER INC.
SERVICE BULLETIN
HC-SB-30-390

Propeller - Spinner/Anti-ice Travel Tube Interference

1. Planning Information

A. Effectivity

- (1) Hartzell Propeller Inc. aluminum hub Raptor propellers, Model 4C1-F650A1/76C04B-0.6, serial numbers TM-1 thru TM-13, and TM-15 thru TM-38 installed on Cirrus SR22 and SR22T aircraft are affected by this Service Bulletin.

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN. INFORMATION CONTAINED IN THIS SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE SERVICE BULLETIN INDEX FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE BULLETIN.

B. Concurrent Requirements

- (1) Additional service documents may apply to the components/propellers affected by this Service Bulletin. Compliance with additional service documents may be necessary in conjunction with the completion of the Accomplishment Instructions in this Service Bulletin. Refer to the Hartzell Propeller Inc. website at www.hartzellprop.com for a cross-reference of service documents.

C. Reason

- (1) Hartzell Propeller Inc. has been informed that there is a possible interference between the anti-ice travel tube and the spinner dome that can result in damage to the spinner dome.

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D. Description

- (1) This Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Service Bulletin requires inspection of the affected parts.

E. Compliance

- (1) Within 50 flight hours from the release date of this Service Bulletin, perform the "Spinner Dome/Travel Tube Inspection" and in accordance with the Accomplishment Instructions in this Service Bulletin.
 - (a) Compliance with the required action in the "Spinner Dome and Travel Tube Damage Limits" section must be performed within the specified time frame.
- (2) Replace the 107637 travel tube with a 108445 travel tube in accordance with Section E of the Accomplishment Instructions section of this Service Bulletin at the next propeller disassembly, or at operator convenience, not to exceed 2400 hours TSN or 72 months from installation on the aircraft, whichever occurs first.

F. Approval

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

G. Manpower

- (1) Approximately 0.3 man-hours is required to inspect the components in accordance with the Accomplishment Instructions in this Service Bulletin.
- (2) If required, approximately 1.0 man-hours is required to repair the components in accordance with the Accomplishment Instructions in this Service Bulletin.
- (3) If required, approximately 0.5 man-hours is required to replace the components in accordance with the Accomplishment Instructions in this Service Bulletin-

H. Weight and Balance

- (1) Not changed

I. Electrical Load Data

- (1) Not changed

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J. References

- (1) Hartzell Propeller Inc. Propeller Owner's Manual 480 (61-00-80).
Available on the Hartzell Propeller Inc. website at www.hartzellprop.com.
- (2) Hartzell Propeller Inc. Propeller Ice Protection System Manual 180 (30-61-80)
Available on the Hartzell Propeller Inc. website at www.hartzellprop.com

K. Other Publications Affected

- (1) Hartzell Propeller Inc. Metal Spinner Maintenance Manual 127 (61-16-27).

2. Material Information

A. Material Supplied by Hartzell Propeller (if necessary)

CAUTION: INSTRUCTIONS AND PROCEDURES IN THIS SERVICE BULLETIN MAY INVOLVE PROPELLER CRITICAL PARTS. REFER TO THE APPLICABLE PROPELLER OVERHAUL OR OWNER'S MANUAL FOR INFORMATION ABOUT PROPELLER CRITICAL PARTS.

<u>Part Number</u>	<u>Description</u>	<u>Qty</u>
107591(P)	Dome Unit	1
108445	Travel Tube	1

B. Special Tooling

- (1) Wire or feeler gauge.
- (2) Phillips screwdriver.

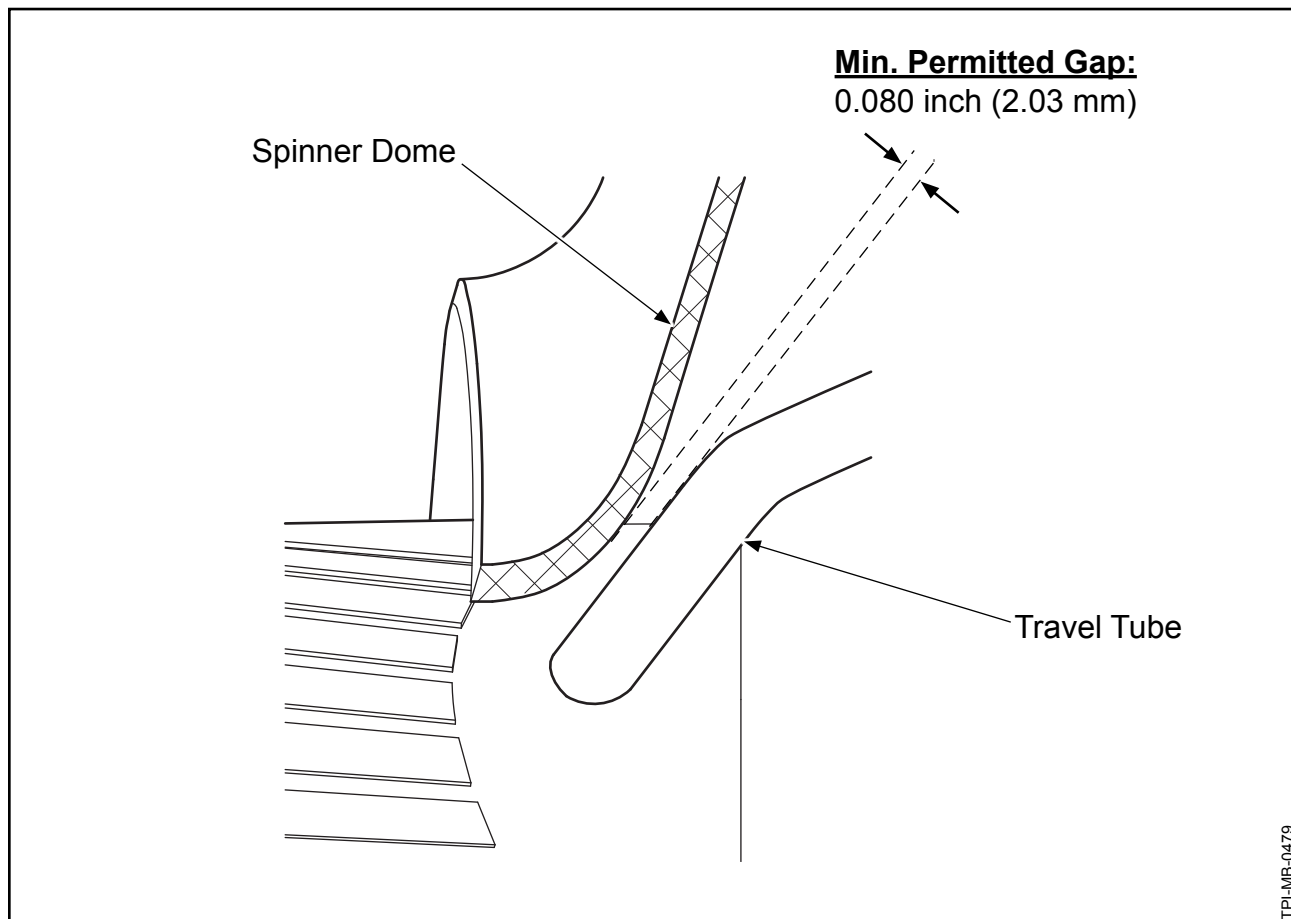
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3. Accomplishment Instructions

A. Spinner Dome/Travel Tube Inspection

- (1) Visually examine the spinner dome and the travel tubes thru the spinner dome cutouts for possible interference.
 - (a) If there is interference between the travel tube(s) and the spinner dome:
 - 1 Match mark and remove the spinner dome in accordance with the applicable Hartzell Propeller Inc. Owner's Manual.
 - 2 Visually examine the spinner dome and travel tubes for damage in accordance with the section, "Spinner Dome and Travel Tube Damage Limits" in this Service Bulletin.



Gap Between the Travel Tube and Spinner Dome
Figure 1

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- 3 Perform the Travel Tube Adjustment Procedure in this Service Bulletin within 50 flight hours of the Spinner Dome/Travel Tube Inspection.
 - 4 Make an entry in the propeller logbook indicating compliance with the Spinner Dome/Travel Tube Inspection section of this Service Bulletin.
- (b) If there is no interference between the travel tubes and the spinner dome:
- 1 Using a wire or feeler gauge, measure the gap between the travel tube and the spinner dome. Refer to Figure 1.
 - a If the gap is less than 0.080 inch (2.03 mm):
 - (1) Match mark and remove the spinner dome in accordance with the applicable Hartzell Propeller Inc. Owner's Manual.
 - (2) Visually examine the spinner dome and travel tubes for damage in accordance with the section, "Spinner Dome and Travel Tube Damage Limits" in this Service Bulletin.
 - (3) Perform the Travel Tube Adjustment Procedure in this Service Bulletin within 50 flight hours of the Spinner Dome/Travel Tube Inspection.
 - (4) Make an entry in the propeller logbook indicating compliance with the Spinner Dome and Travel Tube Inspection section of this Service Bulletin
 - b If the gap is greater than, or equal to 0.080 inch (2.03 mm):
 - (1) Make an entry in the propeller logbook indicating compliance with the Spinner Dome/Travel Tube Inspection section of this Service Bulletin.

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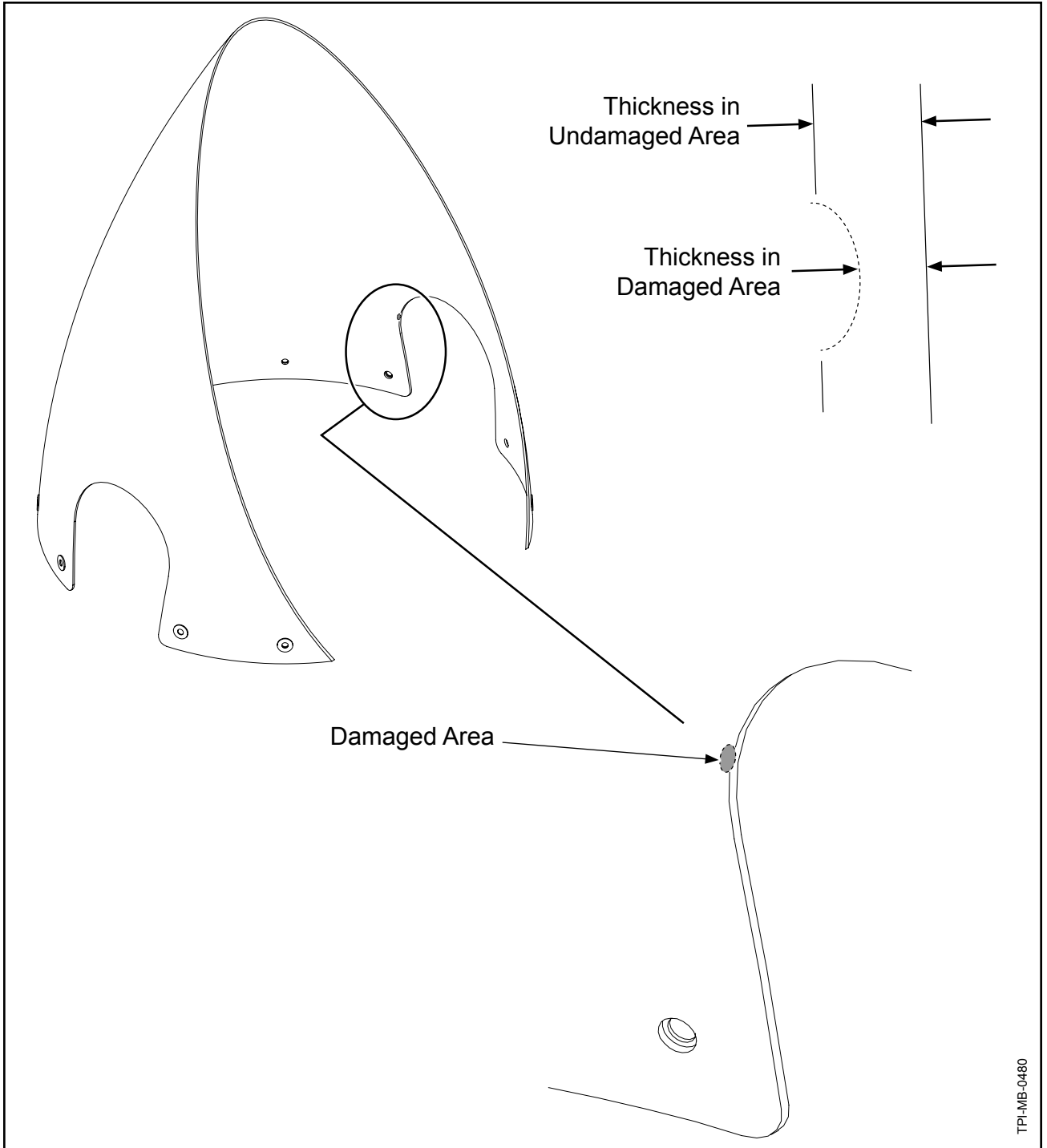
Propeller - Spinner/Anti-ice Travel Tube Interference

B. Spinner Dome and Travel Tube Damage Limits

Inspect	Damage/Permitted Limits	Required Action
<p><u>Spinner Dome</u> Visually examine the spinner dome for cracks and damage caused by interference with the travel tube(s).</p>	<p>One crack is permitted if it is less than 0.75 inch (19 mm) long.</p>	<p>A crack that is less than 0.75 inch (19 mm) long must be stop drilled before further flight.</p> <p>If the crack is longer than 0.75 inch (19 mm), or if there is more than one crack, replace the spinner dome before further flight.</p>
<p>Measure the thickness in the damaged area. Then measure the local thickness in an undamaged area. Refer to Figure 2.</p>	<p>The thickness in the damaged area must be greater than 1/2 of the local thickness of the undamaged area.</p>	<p>If the thickness in the damaged area is less than 1/2 of the local thickness in an undamaged area, repair the dome in accordance with the "Spinner Dome Repair Procedure" in this Service Bulletin.</p>
<p><u>Travel Tubes</u> Visually examine the travel tubes for damage caused by interference with the spinner dome.</p>	<p>Damage that is less than 0.015 inch (0.38 mm) deep is permitted.</p>	<p>If the damage is greater than the permitted limits, replace the travel tube(s) before further flight in accordance with the Travel Tube Replacement section of this Service Bulletin.</p>

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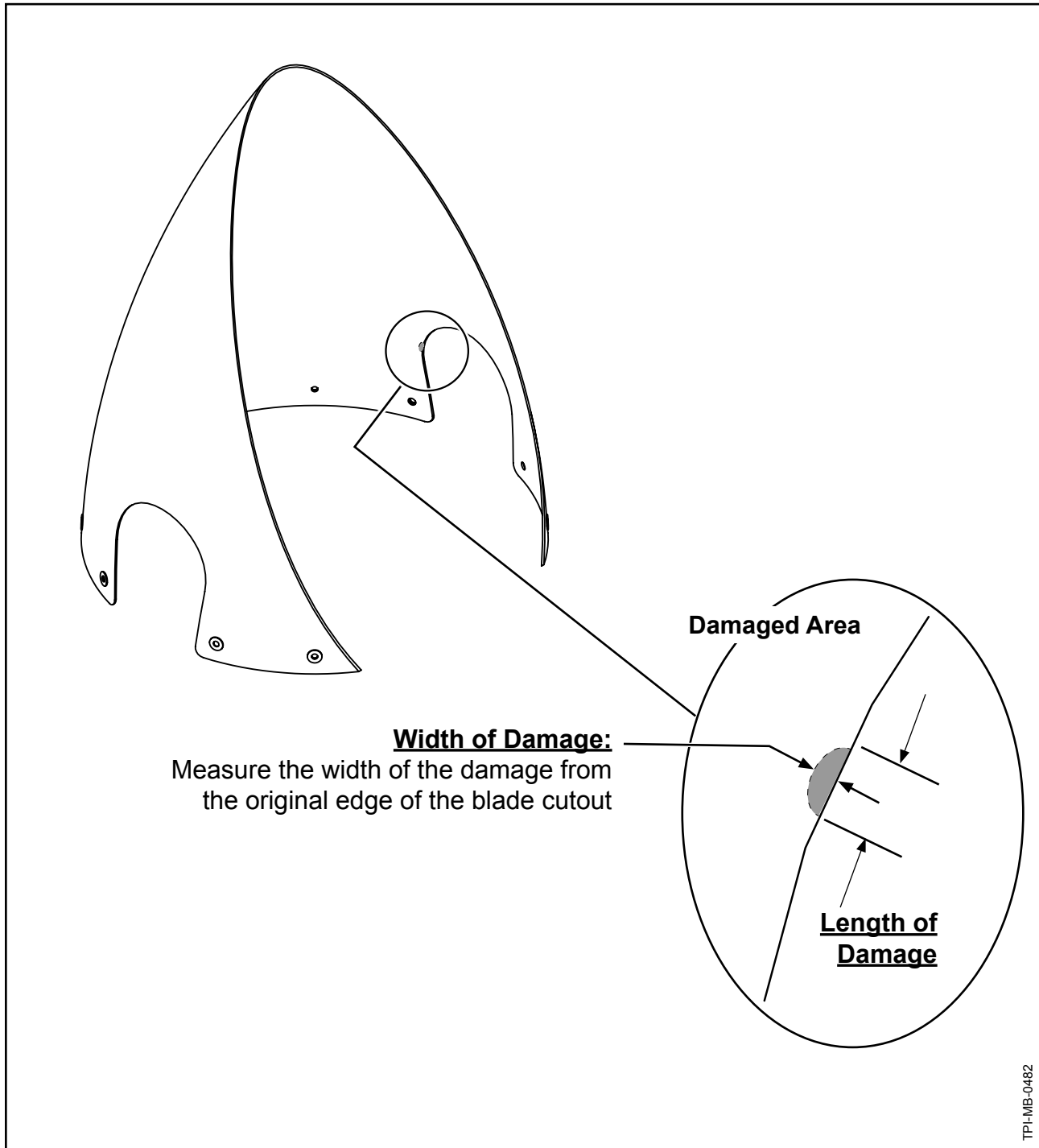


Measuring the Depth of Spinner Dome Damage
Figure 2

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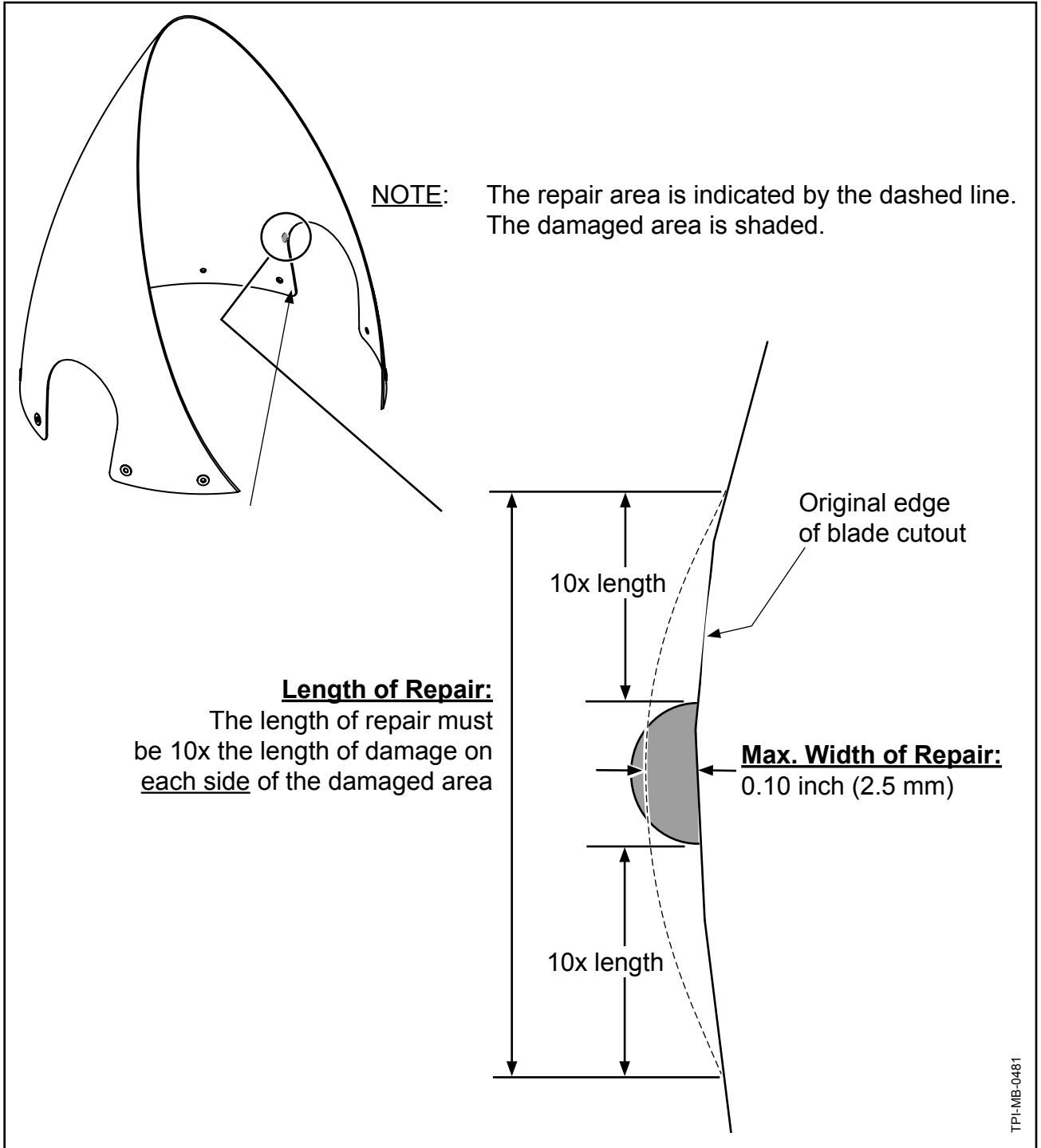
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Spinner Dome Repair
Figure 3, page 1 of 2

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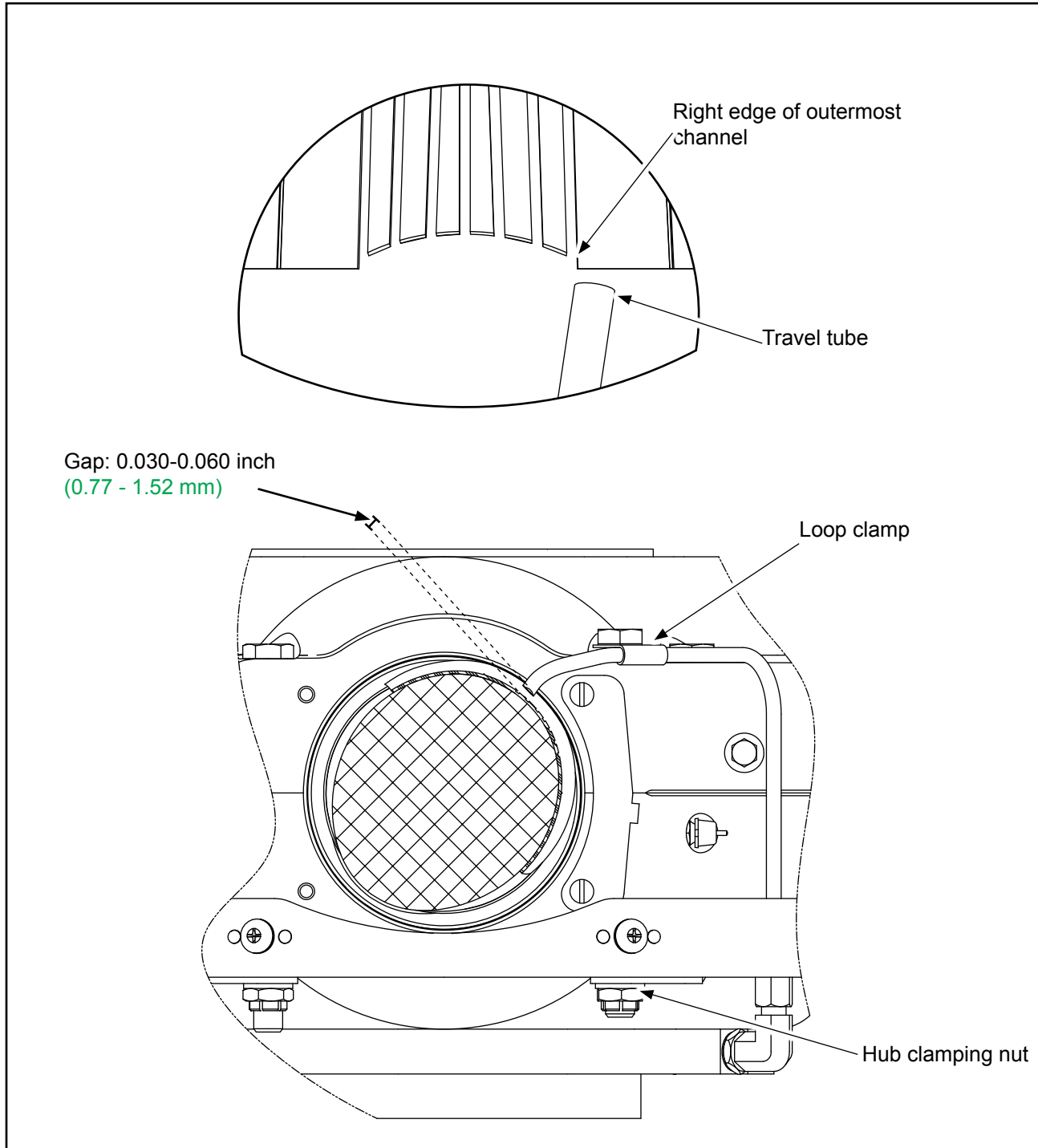
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Spinner Dome Repair
Figure 3, page 2 of 2

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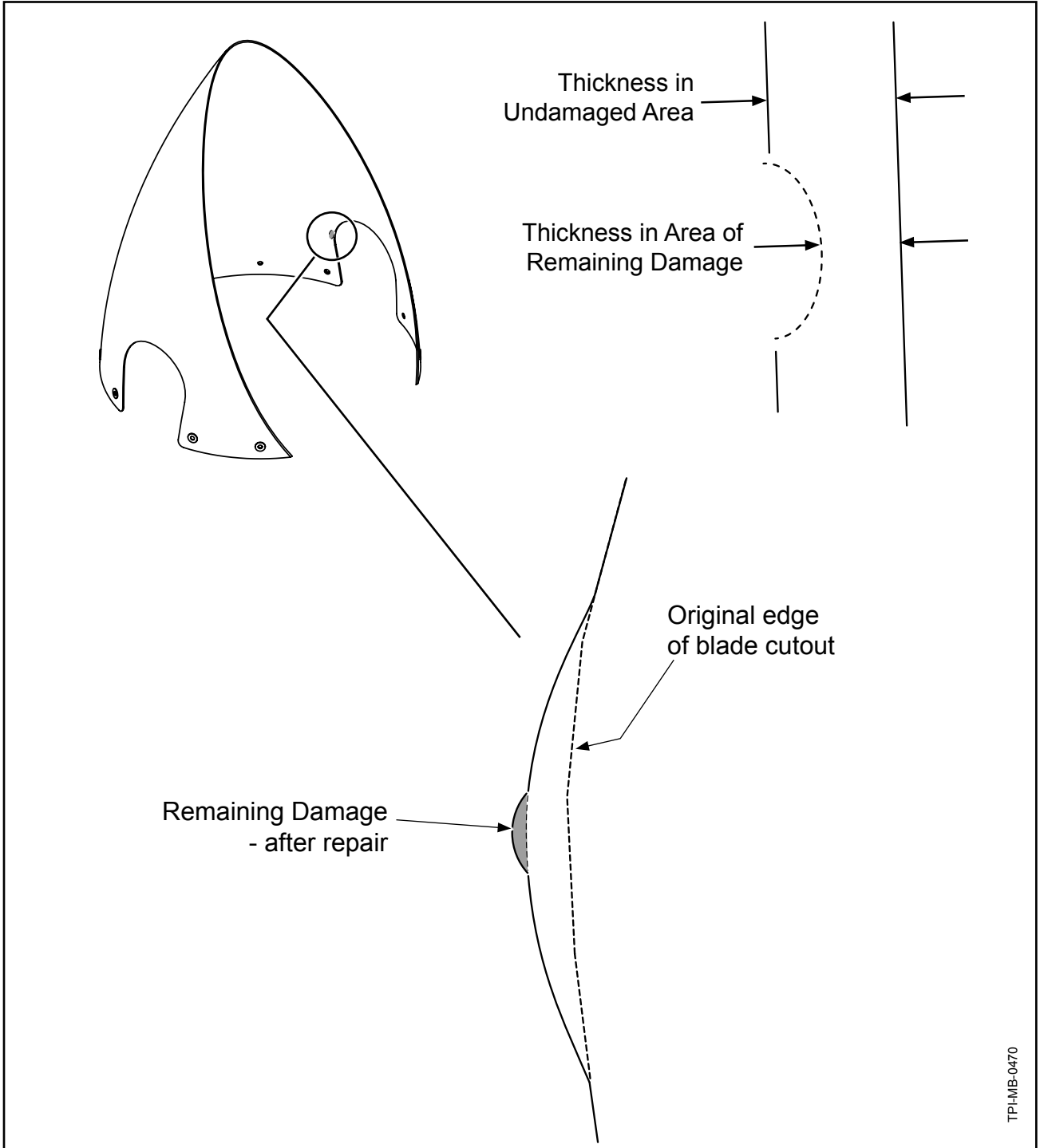
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Travel Tube Clearances
Figure 4

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Remaining Damage After Repair
Figure 5

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C. Travel Tube Adjustment Procedure.

- (1) Inspect the position of the travel tube. The following three conditions must be met:
 - (a) Align the match marks and install the spinner dome in accordance with Hartzell Propeller Inc. Propeller Owner's Manual 480 (61-00-80).
 - 1 With the spinner installed, the distance between the anti-ice travel tube and spinner at each spinner cutout must be at least 0.080 inch (2.04 mm). Refer to Figure 1.
 - (b) With the blades in low pitch, the left side of the travel tube must be in line with the right edge of the outermost channel. Refer to Figure 4.
 - (c) The travel tube must be at least 0.030 inch (0.77 mm) and no greater than 0.060 inch (1.52 mm) from the surface of the anti-ice boot. Refer to Figure 4.

CAUTION: DO NOT BEND THE LOOP CLAMP WHEN BENDING THE TRAVEL TUBE.

- (2) Bend the travel tube to achieve the conditions in sections C.(1)(a) thru C.(1)(c).
 - (a) If necessary, loosen the hub clamping nut and loop clamp to achieve the clearances.
 - 1 The travel tube cannot be in contact with the hub at any point after adjustment.
 - (b) Tighten the hub clamping nut to 24-26 Ft-Lbs (33-35 N•m).
- (3) Align the match marks and reinstall the spinner dome in accordance with Hartzell Propeller Inc. Propeller Owner's Manual 480 (61-00-80).
- (4) The propeller can be returned to service following the completion of the Travel Tube Adjustment and Spinner Dome Inspection.
- (5) Make an entry in the propeller logbook indicating compliance with the Travel Tube Adjustment Procedure section of this Service Bulletin.

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D. Spinner Dome Repair Procedure

- (1) If necessary, contact Hartzell Propeller Product Support for warranty dome replacement.
 - (a) If it is necessary to continue use of currently installed spinner, the spinner may be repaired as follows:
 - 1 Use a grinder or file to remove the damaged area from the side of the blade cutout in accordance with the repair limits in this section and Figure 3.
 - a Repair Limits:
 - (1) The length of the repair must be 10x the length of the damage on each side of the damaged area.
 - (2) The maximum width of repair is 0.10 inch (2.5 mm).
 - (a) If the damaged area is wider than 0.10 inch (2.5 mm), go to step 2 of this procedure.
 - 2 If the damaged area is wider than 0.10 inch (2.5 mm):
 - a Repair the damage in accordance within the repair limits.
 - b Measure the thickness of the area of remaining damage, and the local thickness in an undamaged area. Refer to Figure 5.
 - c The thickness in the area of remaining damage must be greater than 1/2 of the local thickness of the undamaged area.
 - (1) If the thickness in the area of remaining damage is less than 1/2 of the local thickness of the undamaged area, replace the spinner before further flight.

E. Travel Tube Replacement

- (1) Replace the 107637 travel tube with a 108445 travel tube in accordance with Hartzell Propeller Inc. Propeller Ice Protection Manual 180 (30-61-80).
- (2) Make an entry in the propeller logbook indicating compliance with the Travel Tube Replacement section of this Service Bulletin.

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F. Contact Information

Hartzell Propeller Inc.
Attn.: Hartzell Propeller Inc. Product Support
One Propeller Place
Piqua, Ohio 45356-2634 USA
Phone: (001) 937.778.4379
Fax: (001) 937.778.4215
E-mail: techsupport@hartzellprop.com

SERVICE BULLETIN APPENDIX

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Propeller - Spinner/Anti-ice Travel Tube Interference

1. Eligibility

- A. Hartzell Propeller Inc. aluminum hub Raptor propellers, Model 4C1-F650A1/76C04B-0.6, serial numbers TM-1 thru TM-13, and TM-15 thru TM-38 installed on Cirrus SR22 and SR22T aircraft are affected by this Service Bulletin.

2. Recommended Service Facilities

- A. Hartzell Propeller has a worldwide network of Recommended Service Facilities that are recommended by Hartzell Propeller for overhaul and repair of our products.
- B. Each service facility must meet standard FAA requirements and additional Hartzell Propeller requirements before being recommended by Hartzell Propeller. Each service facility is audited by Hartzell Propeller to verify the continuation of the standards.
- C. Hartzell Propeller recommends that you use one of these service facilities when having your propeller overhauled or repaired.
- D. For a current list of Hartzell Propeller Recommended Service Facilities, contact Hartzell Product Support or refer to the Hartzell Propeller website at www.hartzellprop.com.

SERVICE BULLETIN APPENDIX

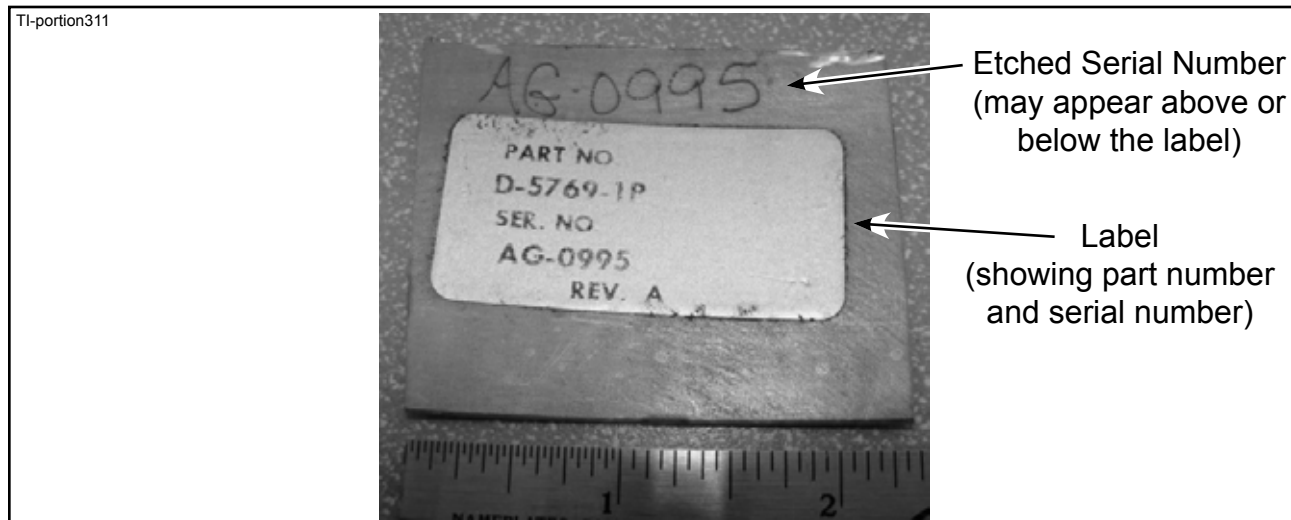
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3. Warranty Program

A. Parts

- (1) Hartzell will supply the replacement 108445 travel tube assembly, and a 107591(P) spinner dome (if damaged/repaired) on propellers affected by this Service Bulletin.
 - (a) If the spinner dome requires replacement, the dome must have a portion of the cut out to include the part number and serial number. Refer to Figure 1. This portion must be returned to Hartzell Product Support.
 - (b) Hartzell Propeller will cover standard shipping for affected spinner pieces. Contact Hartzell Product Support for shipping account information.
 - (c) Return Material Authorization is not required.
 - (d) DO NOT SEND THE WHOLE DOME.
- (2) Complete the compliance/claim form (located on page 4 of this Appendix) to order the components required.
- (3) The components will be sent and the order will reference the Warranty approval number.



Example Portion of the Retired Spinner Dome
Figure 1

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4. Hartzell Contact Information

- A. Send the compliance/claim form on page 4 for each propeller identified in Paragraph 1.A. Effectivity, of this Service Bulletin and fax or mail to:

Hartzell Propeller Inc.
Attn.: Service Bulletin 390 Coordinator
One Propeller Place
Piqua, Ohio 45356-2634 USA
Phone: 937.778.4379
Fax: 937.778.4391 (Intl. 001.937.778.4391)

- B. The compliance/claim form on page 4 is also available in electronic format on the Hartzell website. Go to www.hartzellprop.com, Product Support, Recent Service Documents.

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Owner Information:

Name: _____ Phone: _____
Address: _____ Fax: _____
_____ E-Mail: _____
City: _____ Zip/Postal Code: _____
State: _____ Country: _____

Propeller Service Facility (Shipping Location):

Company: _____ Phone: _____
Contact Name: _____ Fax: _____
Address: _____ E-Mail: _____
_____ City: _____ Zip/Postal Code: _____
State: _____ Country: _____

Propeller Serial Number:	Spinner Dome Damaged? (yes/no)	Spinner Dome Polished? (yes/no)	Travel tube damaged? (yes/no)
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Send this Order Form to:

Hartzell Propeller, Inc.
Product Support
Fax: (001) 937.778.4391
E-Mail: techsupport@hartzellprop.com OR warranty@hartzellprop.com

Hartzell use only - do not write below this line

Warranty #: _____ Authorized by: _____