HARTZELL PROPELLER LLC

SERVICE INSTRUCTION

TRANSMITTAL SHEET

HC-SI-61-195

Hub Pilot Bore Inspection

November 05, 2025

This page transmits a revision to Service Instruction HC-SI-61-195F.

- Original Issue, dated April 28/93
- Revision A, dated May 03/93
- Revision B, dated June 21/93
- Revision C, dated December 27/94
- Revision D, dated February 22, 2000
- Revision E, dated July 18, 2000
- Revision F, dated October 2, 2001
- Revision 1, dated November 05, 2025

Propeller assemblies that have complied with a previous revision of this Service Instruction are not affected.

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

Revision 1 is issued to change the following in the Service Instruction:

- Revise the section, "Approval"
- Revise the section, "Hub Pilot Tube Bore Inspection Procedure"
- Revise Figure 2, "Pilot Tube Bore Indications"
- Revise the Inspection Report in the Accomplishment Instructions section

This Service Instruction is reissued in its entirety.

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Hub Pilot Tube Bore Inspection

1. Planning Information

   A. Effectivity

      Propellers affected by Hartzell Service Bulletins HC-ASB-61-A182( ), HC-ASB-61-A183( ), SB-A186( ), HC-ASB-61-A196( ).

   B. Concurrent Requirements

      This Service Instruction is to be complied with in conjunction with the following service documents:

      HC-ASB-61-A182( ) HC-ASB-61-A183( ) SB-A186( )
      HC-ASB-61-A196( )

   C. Reason

      (1) This Service Instruction provides procedures for compliance with Hartzell Service Bulletins A182( ), A183( ), A186( ), and A196( ).

      (2) This Service Instruction has been revised to eliminate the restriction limiting approval to the Hartzell Service Center. This instruction may be accomplished at any FAA approved, or foreign equivalent, propeller repair station.

   D. Approval

      This Service Instruction replaces all previous revisions of Service Instruction 195, (example: Service Instruction 195B, 195C, 195D, etc.).

      This Service Bulletin is approved by the Manager, FAA, Chicago Aircraft Certification Office, ACE 115C, as an alternate method of compliance with Airworthiness Directives 95-01-02, 95-03-03, and 94-03-11 as referenced by Service Bulletins A182( ), A183( ), A186( ), and A196( ).

3. Accomplishment Instructions

A. Hub Pilot Tube Bore Inspection Procedure

The following procedure requires that the propeller be removed rom the aircraft and disassembled in accordance with Hartzell Propeller Overhaul Manual 118F (61-10-18).

(1) Remove the pilot tube from each hub arm in accordance with the Steel Hub Overhaul chapter of Hartzell Standard Practices Manual 202A (61-01-02).

(2) Clean the hub pilot tube bores with approved solvent (CM23).

(3) Perform inspections and dimensional checks in accordance with the Steel Hub Overhaul chapter of Hartzell Standard Practices Manual 202A (61-01-02). In addition, perform the following steps:

(a) Visually inspect with a dental mirror (or equivalent) and adequate lighting. Evaluate corrosion pitting, scoring, or other surface irregularities in accordance with the Acceptance Criteria and Repair Limits table in the Steel Hub Overhaul chapter of Hartzell Standard Practices Manual 202A (61-01-02).

(b) Perform magnetic particle inspection in accordance with the Magnetic Particle Inspection chapter of Hartzell Standard Practices Manual 202A (61-01-02). If circumferential linear indications are present, do not perform any additional repairs of the hub bore. Return the hub to Hartzell Propeller Service Center for Engineering evaluation.

NOTE: As part of the investigation, it is highly desirable that if a linear indication is found, that it have the original finish to help identify any possible stress risers that could contribute to crack initiation.

(4) Identify any potential "stress risers" such as gouges, tool marks, or corrosion within the cylindrical portion of the bore from 0.2 to 15 inches (5.1 to 38.1 mm) from the bottom of the cylindrical portion of the bore.

(a) Use a non-metallic abrasive pad (CM47), or equivalent, attached to the end of a hand-held air drill or equivalent, to remove light corrosion and/or foreign matter in hub bores.

(b) If any gouges, tool marks, or corrosion are present in the 0.2 to 1.5 inch (5.1 to 38.1 mm) area, use a hone, reamer, or small flexible 80 grit (or finer) "cross patch" sanding disc with hand-held air drill or equivalent, to remove the damage.

(c) If an 80 grit or other coarse grit is used, additional sanding with fine grit (240 or finer), followed by non-metallic abrazive pad (CM47) or equivalent, is necessary to blend sanding marks.

(d) The finished result must be free of stress risers in the 0.2 to 1.5 inch (5.1 to 38.1 mm) area. Any such conditions within the repaired area that cannot be remove by the above method is cause for hub retirement.

(5) Measure and record the hub bore inside diameter at three locations in the area of pilot tube contact in accordance with the Steel Hub Overhaul chapter of Hartzell Propeller standard Practices Manual 202A (61-01-02).

(a) Hubs not identified with a third letter "A" in the hub serial number prefix (e.g. CD1234) must perform inspection as detailed in paragraph 2.A.(6).

(b) Hubs that have comprehensive rolled hub pilot tube bores, identified with the addition of a third letter "A" in the hub serial number prefix (e.g CD**A**1234), must perform inspection as detailed in paragraph 2.A.(7).

(6) Non-"A" prefix hubs:

(a) Using a three-point micrometer, make one measurement at each of the three locations in each hub pilot tube bore. All measurements must be within ±0.0025 inch (±0.063 mm). (If a two point micrometer is used, two measurements at each location are required).

(b) Acceptance criteria and repair limits are to be performed in accordance with the Acceptance Criteria and Repair Limits table in the Steel Hub Overhaul chapter of Hartzell Propeller standard Practices Manual 202A (61-01-02).

(7) "A" prefix hubs:

(a) Using a three-point micrometer, make one measurement at each of the three locations in each hub pilot tube bore. All measurements must be within ±0.0025 inch (±0.063 mm). (If a two point micrometer is used, two measurements at each location are required).

(b) Localized repairs are allowed up to 0.010 inch (0.25 mm) depth maximum.

(c) In the area of pilot tube contact, hub pilot tube bore repairs must not exceed 1.738 inch (44.14 mm) diameter for more than a total of 25% of the bore surface.

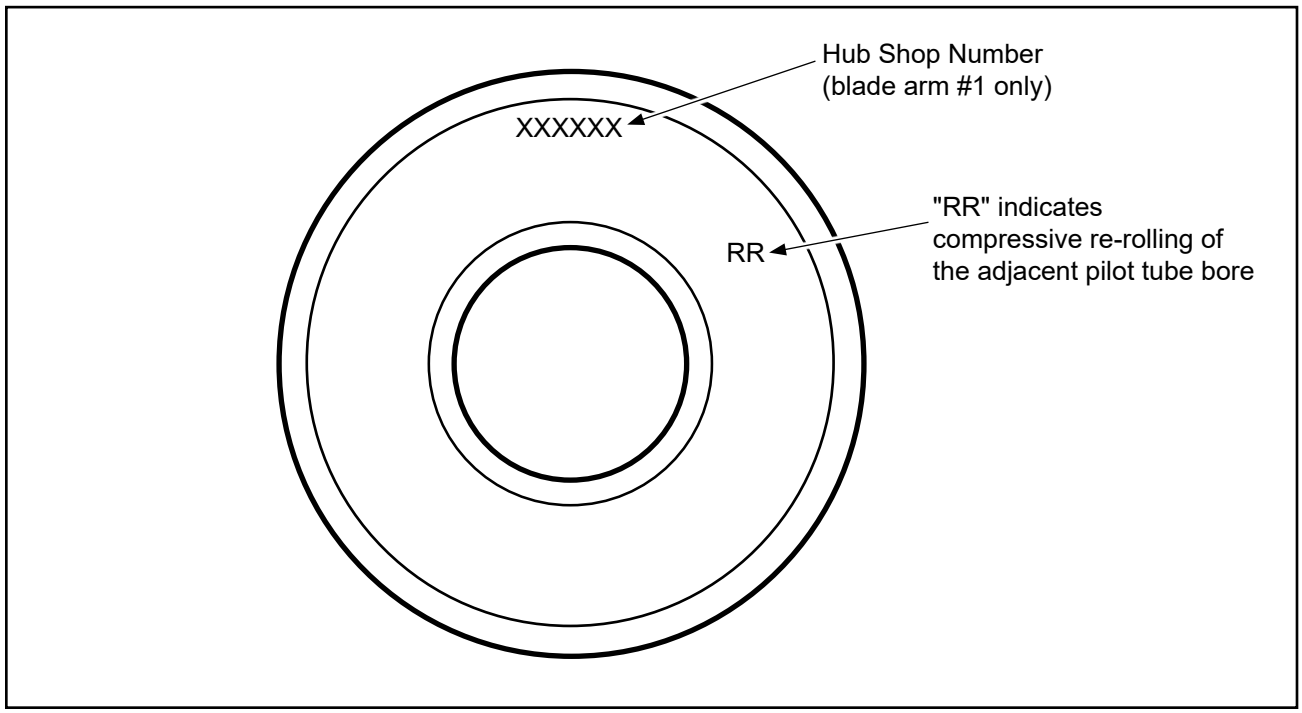
(d) In the area where there is no contact with the pilot tube - innermost 0.75 inch (19.0 mm) of the hub bore - repairs up to 1.748 inch (44.39 mm) diameter is acceptable.

(e) If the hub arem adjacent to the pilot tube bore has not been marked "RR" (see Figure 1), the bore diameter may not exceed 1.73005 inch (43.954 mm) for more than a total of 25% of the bore surface. If repair in excess of 1.7305 inch (43.954 mm) is required, return the hub to Hartzell Propeller for repair and compressive re-rolling of the hub pilot tube bore.

1 Any hub pilot tube bore that has been re-rolled will be marked "RR" adjacent to the pilot tube bore and returned to service. See Figure 1.

(8) Perform magnetic particle inspection of the entire internal bore of the hub blade arms. Pay particular attention to the area in the bore from 0.2 to 1.5 inches (5.1 to 38.1 mm) from the bottom of the blade arm bore (the area near the end of the pilot tube, when installed). Perform magnetic particle inspection in accordance with the Magnetic Particle Inspection chapter of Hartell Propeller Standard Practices Manual 202A (61-01-02).

(9) If additional repair is necessary, reinspect and repeat magnetic particle inspection in accordance with the applicable steps 2.A(5), 2.A.(6), or 2.A.(7), and 2.A.(8) above.



Hub Stamping Location
Figure 1

(10) Retire any hub showing evidence of cracks or other unacceptable indications (i.e. non-repairable gouges, corrosion, etc.). Notify Hartzell Product Support and the FAA upon retirement of any hub that has compressive rolled internal bearing bores (identified with the addition of a third letter "A" in the hub serial number prefix, example: CD**A**1234). Use Figure 2 to indicate location of cracks or other unacceptable indications.

(11) Select an appropriate new pilot tube that will provide an average of 0.002 to 0.004 inch (0.05 to 0.10 mm) interference fit. (Pilot tube diameters are published in the Steel Hub Overhaul chapter of Hartzell Standard Practices Manual 202A (61-01-02).

(12) Install a new pilot tube in accordance with the Pilot Tube Installation sectioin in the Steel Hub Overhaul chapter of Hartzell Standard Practices Manual 202A (61-01-02).

(13) Test for adequate interference fit with an inward load test of 7000 pounds. If any movement is measureable, replacement of the pilot tube is required.

(14) Perform magnetic particle inspetion of the hub blade arms in accordance with the Magnetic Particle Inspection chapter of Hartzell Standard Practices Manual 202A (61-01-02).

(15) Install B-3897-1 expansion plug in accordance with the Installation of Expansion Plug section in the Steel Hub Overhaul chapter of Hartzell Standard Practices Manual 202A (61-01-02).

(16) Using a metal impression stamp, stamp the letter "M" followed by a number (1, 2, 3...) at the end of the hub serial number. This number indicates the number of times the inspection has been performed (first, second, etc.).

(17) Make a logbook entry and maintenance release tag indicating compliance with this Service Instruction.

SERVICE INSTRUCTION

HC-SI-61-195

Hub Pilot Tube Bore Inspection

Indicate the location of cracks or other unacceptable indications on the figure below. Include the following information:

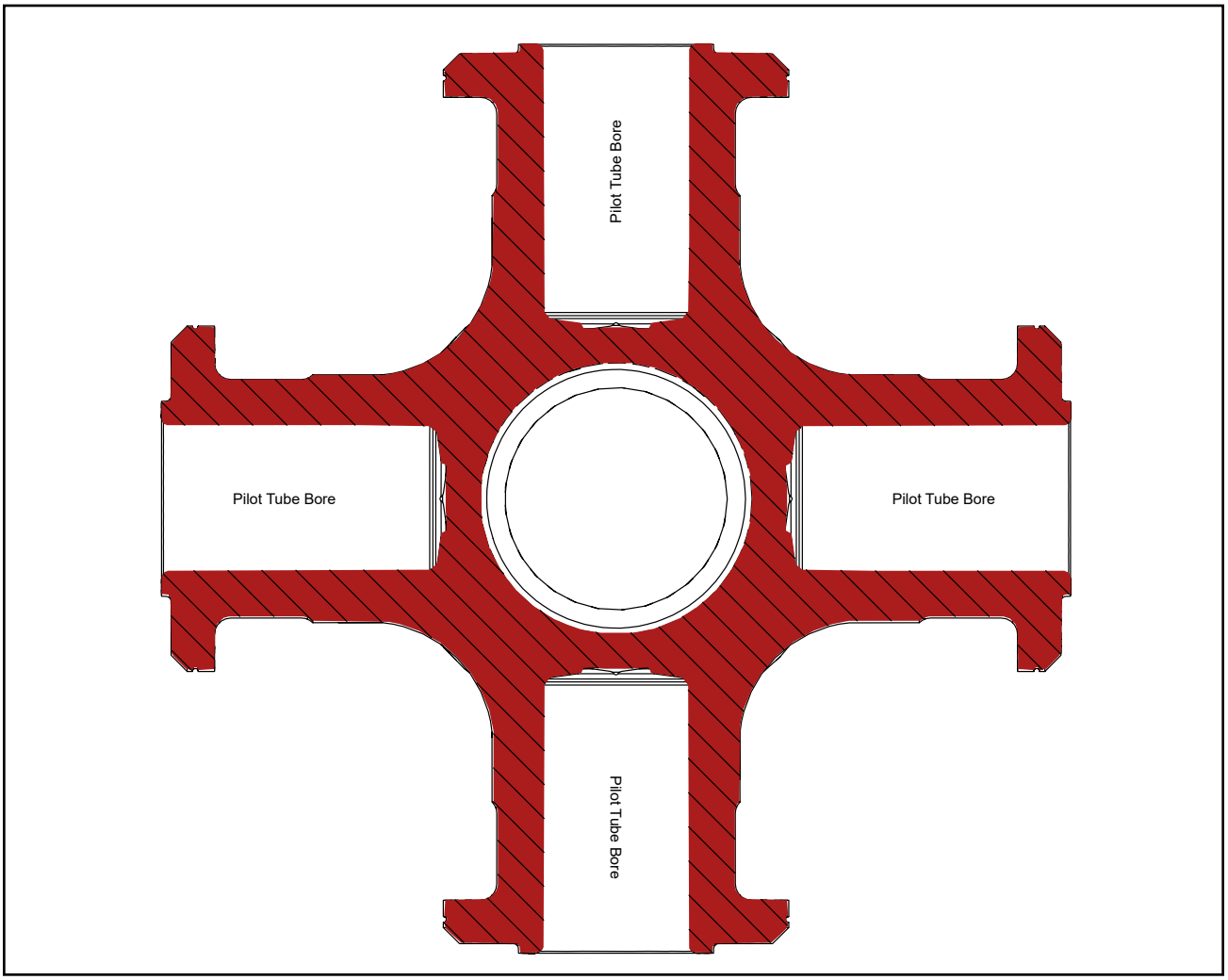
Aircraft Type _____

Prop S/N _____

Prop TSO _____

Prop TSN _____

Send completed forms to:
Hartzell Propeller LLC
Product Support Dept.
One Propeller Place
Piqua, OH 45356-2634
E-mail: techsupport@hartzellpprop.com
Fax: 937.778.4321



Pilot Tube Bore Indications
Figure 2

SERVICE INSTRUCTION

HC-SI-61-195

Hub Pilot Tube Bore Inspection

Inspection Report
840-139/840-91 Hub Units

Date _____

Customer _____ **Work Order No.** _____ **Serial No.** _____

Pilot Tubes - Removal Force

Refer to the Steel Hub Overhaul chapter of Hartzell Propeller Standard Practices Manual 202A (61-01-02) for maximum force requirements.

Pass _____ Fail _____

Pilot Tubes - Installation

	Force	P/N (-#)	Test OK
1			
2			
3			
4			

Hub Arm Bore - I.D. (After Repair)

		1	2	3	4
A	1st Reading				
	2nd Reading				
B	1st Reading				
	2nd Reading				
C	1st Reading				
	2nd Reading				

Magnetic Inspection

Hub Arm Bores:
Passed _____

After Pilot Tube Installation:
Passed _____

Corrosion Preventative

Applied _____

Metal Impression Stamp

e.g. "M2" _____

B. Recommended Service Facilities

(1) Hartzell Propeller LLC has a worldwide network of Recommended Service Facilities for overhaul and repair of our products.

(2) Each service facility must meet standard FAA requirements and additional Hartzell Propeller requirements before being recommended by Hartzell. Each service facility is audited by Hartzell Propeller to verify the continuation of the standards.

(3) Hartzell Propeller recommends that you use one of these service facilities when having your propeller overhauled or repaired.

(4) For a current list of Hartzell Propeller Recommended Service Facilities, contact Hartzell Product Support or refer to the Hartzell website at www.hartzellprop.com.

C. Contact Information

Hartzell Propeller LLC
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