

INST-050923

INSTRUCTIONS FOR INSTALLATION OF HARTZELL

HC-(C,G,J)3YF-1N/NM8411-()

PROPELLER ON CESSNA AIRCRAFT IN AML-050923

STC SA04643CH

LOG OF REVISIONS

Revision	Revised Pages	Description of Revision	Date
IR	All	Initial Revision	10/12/2024

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

FAA Approved _____



Digitally signed by Bo
Landess
Date: 2024.12.02 14:35:51
-05'00'

Bo R. Landess
STC ODA administrator
Hartzell STC ODA-100082-CE

See electronic signature
Date _____

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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) 778-4376 or
1-800-942-7767***

E-mail: techsupport@hartzellprop.com

Engineering Drawing Disclaimer

The figures provided in the following installation instructions are for reference only. In the event of a disagreement between the current revision of the drawing on file at Hartzell Propeller and the figures in this document, the current revision of the drawing must be used.

List of required documents, drawings, or software

Hartzell Propeller Owner's Manual No. 145 All installations (included with STC kit)

Selection of appropriate propeller model

Refer to Appendix A for compatibility of this STC with specific airplane models, and if applicable, alternate engine configurations installed via STC. If there is a difference in approved propeller diameter between landplane and floatplane usage, landplanes are denoted by (L) next to the diameter, and floatplanes are denoted by (F) next to the diameter.

For Eligible Propeller Model entries that include a variable hub extension identifier (e.g., (C,J)), a "C" is appropriate for use with short cowlings, and "J" is appropriate for use with long cowlings.

Use the appropriate entry in Appendix A for the aircraft to be modified to determine the eligible propeller model and diameter to be installed.

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GENERAL

These STC installation instructions provide the necessary information to install an HC-(C,G,J)3YF-1N/NM8411-() propeller with appropriate spinner on the Cessna aircraft listed in the STC Approved Model List AML-050923.

APPLICABLE MODELS

This STC propeller conversion applies to all aircraft in AML-050923 with the listed Continental engines. No other configurations are approved.

Prior to propeller installation, use Appendix A to cross reference the STC propeller diameter with the make and model of aircraft being modified and its installed engine (via TC or STC) to ensure eligibility is maintained.

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

EXAMPLE

Aircraft Make and Model..... Cessna A185F

Installed Engine (via) Continental IO-550-D (SA2933SO)

Eligible STC propeller..... HC-C3YF-1N/NM8411 86.0" diameter

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Section A: Propeller Installation – No Ice Protection

Note: To minimize airframe vibration during operation, rotate the engine crankshaft to position #6 cylinder piston at top-dead-center before removing original propeller.

- (1) Remove the existing propeller and spinner in accordance with the applicable Aircraft Maintenance Manual (AMM).

Note: The chapter references in the following steps are contained in the Installation and Removal section of Hartzell Propeller Owner's Manual No. 145.

- (2) Unpack and inspect the new propeller according to Chapter 2 of Hartzell Propeller Owner's Manual No. 145 (Manual 145).
- (3) Install the spinner bulkhead onto the new propeller hub in accordance with the "Installation of a Metal Spinner Bulkhead" instructions in the "Bulkhead Installation" section of the Manual 145.

Note: Mount the new propeller to engine flange so that one blade is horizontal with and parallel to cylinder #6.

- (4) Follow instructions for "Installation of "F" Flange Propellers" in Manual 145 to install the new propeller and spinner dome onto the aircraft. Additionally, reference the appropriate AMM specific to the airplane model and S/N being modified.
- (5) Attach Hartzell Propeller Airplane Flight Manual Supplement AFMS-050923 to the existing Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. Revise weight and balance records to show:

Removal of existing propeller & spinner

Refer to aircraft records and/or Required Equipment List for appropriate propeller weight and moment arm.

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Installation of the Hartzell HC-(C,G,J)3YF-1N/NM8411-() propeller & listed spinner

Hub model ()- <u>C</u> 3YF-()		
Propeller Model	Weight [lb]	Diameter [inches]
HC-C3YF-1N/NM8411	58.4	86.0
HC-C3YF-1N/NM8411-4	58.1	82.0
HC-C3YF-1N/NM8411-6	57.9	80.0

Hub model ()- <u>G</u> 3YF-()		
Propeller Model	Weight [lb]	Diameter [inches]
HC-G3YF-1N/NM8411	60.0	86.0
HC-G3YF-1N/NM8411-4	59.7	82.0
HC-G3YF-1N/NM8411-6	59.5	80.0

Hub model ()- <u>J</u> 3YF-()		
Propeller Model	Weight [lb]	Diameter [inches]
HC-J3YF-1N/NM8411	61.2	86.0
HC-J3YF-1N/NM8411-4	60.9	82.0
HC-J3YF-1N/NM8411-6	60.7	80.0

Spinner Type	Spinner Model	Weight [lb]
Aluminum Spinner (polished)	A-2295-1P	4.7
Aluminum Spinner (paint, prime, or buff)	A-2295-1	4.8
Aluminum Spinner (polished)	C-3575-P	4.5
Aluminum Spinner (paint, prime, or buff)	C-3575	4.6
Aluminum Spinner (polished)	C-4582-1P	3.9
Aluminum Spinner (paint, prime, or buff)	C-4582-1	4.0

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Spinner Type	Spinner Model	Weight [lb]
Aluminum Spinner (polished)	D-4798-1P	4.1
Aluminum Spinner (paint, prime, or buff)	D-4798-1	4.2
Aluminum Spinner (polished)	D-4798-3P	4.9
Aluminum Spinner (paint, prime, or buff)	D-4798-3	5.0

- (6) Perform Post-Installation Checks in accordance with Manual 145.
- (7) Make the appropriate logbook entries and return the aircraft to service with FAA Form 337 referencing this STC.
- (8) Perform a functional check flight using normal procedures, note maximum RPM setting, and adjust governor high-RPM stop in accordance with AMM procedures, if necessary.
- (9) Post-installation dynamic balance of the propeller/engine combination is recommended, but not required, in accordance with the Maintenance Practices section of Manual 145.

END

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Appendix A: Airplane, Engine, and Propeller Compatibility



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 1: Cessna 180, 180(A-J)

Approval Document For Engine Installation	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA00468WI	O-470-50	235 HP @ 2700 RPM	HC-C3YF-1N/NM8411	86.0
SA09132SC	O-550-F-TS	240 HP @ 2700 RPM	HC-C3YF-1N/NM8411-4	82.0
SA2069NM ¹	O-520-KAH	270 HP @ 2700 RPM	HC-C3YF-1N/NM8411-4	82.0
SA01345AT	IO-520-D	300 HP @ 2850 RPM	HC-C3YF-1N/NM8411-6	80.0
SA00785AT	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411-4	82.0

Table 2: Cessna 180K

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA00468WI	O-470-50	235 HP @ 2700 RPM	HC-C3YF-1N/NM8411	86.0
SA01345AT	IO-520-D	300 HP @ 2850 RPM	HC-C3YF-1N/NM8411-6	80.0
SA00785AT	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411-6	80.0

¹180(G-J) only



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 3: **Cessna 185, 185(A-E)**

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA525NW	IO-520-D	300 HP @ 2850 RPM	HC-C3YF-1N/NM8411	86.0
SA00413WI	IO-520-D	300 HP @ 2850 RPM	HC-C3YF-1N/NM8411	86.0
SA09960SC	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411-4	82.0
SA2933SO	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411-4	82.0

Table 4: **Cessna A185(E,F)**

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
TCDS 3A24	IO-520-D	300 HP @ 2850 RPM	HC-C3YF-1N/NM8411	86.0
SA1522GL	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411	86.0
SA00344WI	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411	86.0
SA09960SC	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411	86.0
SA2933SO	IO-550-D	300 HP @ 2700 RPM	HC-C3YF-1N/NM8411	86.0



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 5: Cessna 182, 182(A-R)

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA01302AT	IO-520-D	285 HP @ 2700 RPM	HC-G3YF-1N/NM8411-6	80.0
SA01218AT	IO-550-D	300 HP @ 2700 RPM	HC-G3YF-1N/NM8411-6	80.0
SA3825SW ²	IO-550-D	300 HP @ 2700 RPM	HC-G3YF-1N/NM8411-4	82.0
SA461NW ³	IO-520-D	300 HP @ 2850 RPM	HC-G3YF-1N/NM8411-4	82.0
SA00152WI ³	IO-550-D	300 HP @ 2700 RPM	HC-G3YF-1N/NM8411-6	80.0
SA5966NM ⁴	O-470-50	235 HP @ 2700 RPM	HC-G3YF-1N/NM8411-6	80.0
SA00810AT ⁵	IO-550-D	300 HP @ 2700 RPM	HC-G3YF-1N/NM8411-6	80.0

²182(E-R) only

³182(H-P) only

⁴182(Q,R) only

⁵182Q only



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 6: Cessna 206, U206, & U206A - TCDS Configuration

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
TCDS A4CE	IO-520-A	285 HP @ 2700 RPM	HC-C3YF-1N/NM8411-4 HC-C3YF-1N/NM8411	82.0 (L) 86.0 (F)

Table 7: Cessna U206(B-F) - TCDS Configuration

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
TCDS A4CE	IO-520-F	300 HP @ 2850 RPM	HC-C3YF-1N/NM8411-4 HC-C3YF-1N/NM8411	82.0 (L) 86.0 (F)



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 8: Cessna 206, U206, U206(A-G)

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA10010SC	IO-550-F	300 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA02768CH	IO-520-A-CF or -F-CF	300 HP @ 2800 RPM	HC-(C,J)3YF-1N/NM8411-6 HC-(C,J)3YF-1N/NM8411-6	80.0 (L) 80.0 (F)
	IO-550-F-CF	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA2830SO	IO-550-F	300 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA00332AT ⁶	IO-550-F	300 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411-4	82.0 (L) 82.0 (F)
SA02507AT-D ⁶	IO-550-N	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411-4	82.0 (L) 82.0 (F)
SA1482GL ⁷	IO-550-F	300 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411-4	82.0 (L) 82.0 (F)

⁶U206(B-G) only

⁷U206(E-G) only



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 9: Cessna P206, P206(A,B) - TCDS Configuration

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
TCDS A4CE	IO-520-A	285 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4	82.0 (L)
			HC-(C,J)3YF-1N/NM8411	86.0 (F)

Table 10: Cessna P206(C-E) - TCDS Configuration

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
TCDS A4CE	IO-520-A	285 HP @ 2700 RPM	HC-J3YF-1N/NM8411-4	82.0 (L)
			HC-J3YF-1N/NM8411-4	82.0 (F)

Table 11: Cessna P206, P206(A-E)

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA10010SC	IO-550-F	300 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4	82.0 (L)
			HC-(C,J)3YF-1N/NM8411	86.0 (F)
SA2830SO	IO-550-F	300 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4	82.0 (L)
			HC-(C,J)3YF-1N/NM8411	86.0 (F)
SA02507AT-D ⁸	IO-550-N	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4	82.0 (L)
			HC-(C,J)3YF-1N/NM8411-4	82.0 (F)
SA02768CH ⁸	IO-520-A-CF or -F-CF	300 HP @ 2800 RPM	HC-(C,J)3YF-1N/NM8411-6	80.0 (L)
			HC-(C,J)3YF-1N/NM8411-6	80.0 (F)
	IO-550-F-CF	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4	82.0 (L)
			HC-(C,J)3YF-1N/NM8411	86.0 (F)

⁸P206(A-E) only



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 12: Cessna TU206(A-G) - TCDS Configuration

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
TCDS A4CE ⁹	TSIO-520-C	285 HP @ 2700 RPM	HC-C3YF-1N/NM8411-4 HC-C3YF-1N/NM8411	82.0 (L) 86.0 (F)
TCDS A4CE ¹⁰	TSIO-520-C	285 HP @ 2700 RPM	HC-J3YF-1N/NM8411-4 HC-J3YF-1N/NM8411	82.0 (L) 86.0 (F)
TCDS A4CE ¹¹	TSIO-520-M	310 HP @ 2700 RPM	HC-J3YF-1N/NM8411-6 HC-J3YF-1N/NM8411-6	80.0 (L) 80.0 (F)

Table 13: Cessna TU206(A-G)

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA01300AT	IO-550-F	300 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA2782SW ¹²	TSIO-520-M	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA02768CH ¹²	IO-520-A-CF or -F-CF	300 HP @ 2800 RPM	HC-(C,J)3YF-1N/NM8411-6 HC-(C,J)3YF-1N/NM8411-6	80.0 (L) 80.0 (F)
	IO-550-F-CF	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA02507AT-D ¹³	IO-550-N	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)

⁹TU206(A-F) thru S/N U2062199
¹⁰TU206F S/N U20602200 and subsequent
¹¹TU206G only
¹²TU206(A-F) only
¹³TU206F S/N U20602200 and subsequent



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 13: Cessna TU206(A-G)

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA1588GL ¹⁴	TSIO-520-M	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA02507AT-D ¹⁵	IO-550-N	310 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-6 HC-(C,J)3YF-1N/NM8411-6	80.0 (L) 80.0 (F)

¹⁴TU206F only

¹⁵TU206G



Airplane, Engine, and Propeller Compatibility for INST-050923

Table 14: Cessna TP206(A-E) - TCDS Configuration

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
TCDS A4CE ¹⁶	TSIO-520-C	285 HP @ 2700 RPM	HC-(C,J)3YF-1N/NM8411-4 HC-(C,J)3YF-1N/NM8411	82.0 (L) 86.0 (F)
TCDS A4CE ¹⁷	TSIO-520-C	285 HP @ 2700 RPM	HC-J3YF-1N/NM8411-4	82.0 (L)

Table 15: Cessna TP206(A-E)

Approval Document	Approved Engine	Engine Rating	Eligible Propeller Model	Eligible Propeller Diameter [inches]
SA2782SW	TSIO-520-M	310 HP @ 2700 RPM	HC-J3YF-1N/NM8411-6 HC-J3YF-1N/NM8411-4	80.0 (L) 82.0 (F)
SA02768CH	IO-520-A-CF or -F-CF	300 HP @ 2800 RPM	HC-J3YF-1N/NM8411-6 HC-J3YF-1N/NM8411-6	80.0 (L) 80.0 (F)
	IO-550-F-CF	310 HP @ 2700 RPM	HC-J3YF-1N/NM8411-4 HC-J3YF-1N/NM8411	82.0 (L) 86.0 (F)
SA01300AT	IO-550-F	300 HP @ 2700 RPM	HC-J3YF-1N/NM8411-4 HC-J3YF-1N/NM8411	82.0 (L) 86.0 (F)

¹⁶TP206A only

¹⁷TP206(B-E) only