
INSTALLATION INSTRUCTIONS
SUPPLEMENTAL TYPE CERTIFICATE
SA04491CH

CESSNA AIRCRAFT
NON-TURBOCHARGED MODELS
180, 182, 185 & 206 SERIES

INSTALLATION OF HARTZELL
PROPELLERS

HC-(C, G or J)3YF-1RF/F8429(B,K)- ()

FAA Approved: _____

Date: _____

LOG OF REVISIONS

Rev.	Rev. Date	Pages	Description of Revision	Approved	FAA Approved
IR	10/21/2020	All	FAA STC Initial Release	<i>Bob Minnis</i>	
A	01/11/2021	All	As provided for in AC20-180 AML-STC, added Cessna's 180, 182 Modified & 185 /185 stock & modified model aircraft	<i>Bob Minnis</i>	
B	02/23/2021	All	Updated to add the MDL 180, 182 & 185 aircraft. Revised all charts to the latest information.	<i>Bob Minnis</i>	
C	04/20/2021	11 10 13	Corrected C206 engine & RPM. Deleted STC SA00501AT, Propeller STC only. Added 235 /240 BHP to the low pitch stops setting chart	<i>Bob Minnis</i>	
D	06/23/2021				

WARNING.....USE OF THIS STC IS SUBJECT TO FEDERAL LAW 104-264 110 STAT. 3256, SECTION 403. FEDERAL LAW PROHIBITS USE OF THE CONTENTS OF THIS STC WITHOUT PERMISSION OR LICENSE FROM THE OWNER, Minnis Aviation.

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1.0 INTRODUCTION

The modification replaces the existing McCauley, Hartzell or MT Propeller with the Hartzell-Propeller, model number HC-()3YF-1RF/F84298(B,K)-().

2.0 INSTALLATION INSTRUCTIONS

COMPATIBILITY OF THE INSTALLATION CHANGE WITH PREVIOUSLY APPROVED MODIFICATION MUST BE DETERMINED BY THE INSTALLER

2.1 Applicable Manuals:

- Hartzell Propeller Owner's Manual, 115N (Metal blade)
- Cessna Aircraft Company Maintenance Manual, Models 180, 182, 185 & 206
- FAA approved Airplane Flight Manual Supplement No. M2019-06

WARNING

Disconnect the ignition harness to the spark plugs before removing the existing propeller & spinner. Reconnect after the installation of the replacement propeller and spinner is completed.

Failure to comply can result in bodily injury when the propeller is rotated during removal or re-installation.

CAUTION

Wrap the blade shanks in several layers of masking or duct tape before installing or removing the spinner dome to prevent damaging the blade and blade paint.

2.2 Removal and Installation

Removal / installation of the propeller spinner and propeller are to be accomplished in accordance with Hartzell Propeller Owner's Manual 115N rev. 12 or later approve revisions and Cessna Aircraft Company Maintenance Manual, Models 180, 182, 185, , or 206.

2.3 Tooling requirements

- Safety wire pliers
- Torque wrench (1/2 inch drive)
- Torque wrench adapter (Hartzell P/N BST-2860)
- 3/4 inch open end wrench

2.4 Consumables

- Quick Dry Stoddard Solvent or Methyl-Ethyl-Ketone (MEK)

2.5 Expendables

- 0.032 Stainless Steel Aircraft Safety Wire
- “O” ring – propeller to engine seal (C-3317-228) or another approved P/N

2.6 Pre-Installation

- Inspection of shipping package
 - Examine the exterior of the shipping container for signs of shipping damage, especially at the box ends around each blade. A hole, tear or crushed appearance at the end of the box (at the propeller tips) may indicate the propeller was dropped during shipment, possibly damaging the blades.

2.7 Uncrating

- Place the propeller on a firm support
- Remove the banding and any external wood bracing from the cardboard shipping container.
- Remove the cardboard from around the hub and blades. Place the propeller on a padded surface that supports the propeller over a large area. Never stand the propeller on a blade tip.
- Remove the plastic dust cover cup from the propeller-mounting flange (if installed).

2.8 Inspection after shipping

- After removing the propeller from the shipping container, examine the propeller components for shipping damage.

2.9 Placard and marking:

- Hartzell-Propeller HC-()3YF-1RF/F8429(B,K)-() limitations are RPM'S (2850) and power (350 BHP) which is well above the approved operating range of the 520 / 550 Continental Aircraft Engines. No propeller related placard is required.
- Placard concerning operation limitation of the replaced propellers (if any) are obsolete.

2.10 Static RPM check:

- **Perform static test, check for function and oil leakage.**
 - Perform full power static RPM check with the governor adjusted for full RPM (**Note:** Count the number of turns for reference setting after propeller RPM check). Adjust low pitch stop per Section 4 of Hartzell Propeller Owner’s **Manual 115N**.
 - Check for proper governor control cable cushion, adjust as required.
 - Adjust fuel flow in accordance with Cessna Service Instruction, CM Engine Setup Procedures or in accordance with STC’s that may be installed.
 - Continental Aerospace Technologies Engines **Manual M-0** may also be used as a reference for fuel set-up.
 - After adjustment is complete, final safety checks are made, safety wire installation as required, perform flight test and make all required logbook entries.

2.11 Change weight and balance record and equipment list:

Hartzell-Propeller HC-(C, or J)3YF-1RF/F8429(B,K) propeller with spinner:

Propeller Hub & Blades	WEIGHTS Lbs.	Length	
		Max - Inches	Min - Inches
C3YF/F8429() -0	76.8	86.0	84.0
C3YF/F8429() -2	76.7	84.0	82.0
C3YF/F8429() -4	76.5	82.0	80.0
C3YF/F8429() -6	76.3	80.0	78.0
G3YF/F8429() -0	79.0	86.0	84.0
G3YF/F8429() -2	78.9	84.0	82.0
G3YF/F8429() -4	78.7	82.0	80.0
G3YF/F8429() -6	78.5	80.0	78.0
J3YF/F8429() -0	80.6	86.0	84.0
J3YF/F8429() -2	80.5	84.0	82.0
J3YF/F8429() -4	80.3	82.0	80.0
J3YF/F8429() -6	80.1	80.0	78.0

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- 2.12 Post-installation dynamic balance of the propeller / engine combination is recommended.
 - 2.13 Make the appropriate logbook entries and return aircraft to service with FAA Form 337 referencing STC.
 - 2.14 **Hartzell Propeller Service:** All Hartzell-Propeller manuals and service information can be ordered through your Hartzell-Propeller distributor or (if prepaid) directly from:

Hartzell Propeller Inc.
One Propeller Place
Piqua, Ohio 45356

Email

techsupport@hartzellprop.com

Telephone

(937) 778-4379

Hours - 8am - 5pm US Eastern Time

(937) 778-4376

after hours AOG support

Or web site <http://www.hartzellprop.com>

3.0 MODEL ELIGIBILITY

**Modified (STC's)
 C-180
 Land Planes / Floatplane**

STC No.	ENGINE	BHP / RPM's	PROPELLER MODEL	DIAMETER INCHES	
				MAX.	MIN.
SA09055SC	O-520-LC/TS	235 / 2700	HC-C3YF-1RF /F8429-4	82	80
SA09132SC	O-550-F-TS	240 / 2700	HC-C3YF-1RF /F8429-4	82	80
SA09018SC	O-520-F-TS	240/ 2700	HC-C3YF-1RF /F8429-4	82	80
SA01345AT	IO-520-D	(300 / 2850 5 Min) 285 / 2700	HC-C3YF-1RF /F8429-6	80	78
SA00468WI	O-470-50	235 / 2700	HC-C3YF-1RF /F8429	86	84
SA2069NM	O470U-C-O520KAH-2 IO-520-C-O520KAH-1	270 / 2700	HC-C3YF-1RF /F8429-4	82	80
SA00785AT	IO-550-D	300 / 2700	HC-C3YF-1RF /F8429-4	82	80

- SA09055SC, SA09132SC and SA09018SC use D-5732-P spinner assemblies.
- SA09055SC and SA09132SC are also eligible for a C-4582-P.
- SA01345AT uses a C-3535-1P Spinner assembly.
- SA00468WI, SA00785AT & SA2069NM use A-2295-1P Spinner assemblies.

**Modified (STC's)
 C-182
 Land Planes**

STC No.	Engine	BHP / RPM's	Prop Model	DIAMETER INCHES
				MAX / MIN
SA3825SW	IO-550-D	300 / 2700	HC-G3YF-1RF/8429-4	82 / 80
SA01302AT	IO-520-D	285 / 2700	HC-G3YF-1RF/8429-6	80 / 78
SA461NW	IO-520-D	300 / 2850	HC-G3YF-1RF/8429-6	80 / 78
SA01218AT	IO-550-D	300 / 2700	HC-G3YF-1RF/8429-6	80 / 78
SA09133SC	O-550-F-TS	240 / 2700	HC-G3YF-1RF/8429-6	80 / 78
SA00152WI	IO-520-D	300 / 2850	HC-G3YF-1RF/8429-6	80 / 78
	IO-550-D	300 / 2700		
SA5664NM	O-470-50	235 / 2700	HC-G3YF-1RF/8429-6	80 / 78
SA5966NM				

- SA3825SW, SA461NW and SA00152WI, are eligible for the D-4798-3P (182 – 182G) or D-4798-1P (182H – 182R).
- SA09133SC use D-5732-P or C-4582-P Spinner
- SA01302AT and SA01218AT are eligible for the D-5732-P.
- SA5664NM and SA5966NM use D-4798-3P (182 – 182G) or D-4798-1P (182H – 182R).

Cessna 185 Series
Land Planes / Floatplanes

CESSNA MODEL	ENGINE	BHP / RPM'S	PROP MODEL	DIAMETER INCHES		SPINNER
				MAX.	MIN.	
A185E A185F	IO-520-D	300 / 2850	HC-C3YF-1RF/F8429	86	84	C-3575-P

Modified (STC's)
C-185
Land Planes / Floatplanes

STC No.	ENGINE	BHP / RPM's	PROPELLER MODEL	DIAMETER INCHES		SPINNER
				MAX	MIN	
SA525NW	IO-520-D	300 / 2850	HC-C3YF-1RF/F8429	86	84	C-3575-P
SA1522GL	IO-550-D	300 / 2700	HC-C3YF-1RF/F8429	86	84	
SA2933SO	IO-550-D	300 / 2700	HC-C3YF-1RF/F8429	86	84	
SA00344WI	IO-550-D	300 / 2700	HC-C3YF-1RF/F8429	86	84	
SA09960SC	IO-550-D	300 / 2700	HC-C3YF-1RF/F8429	86	84	
SA00413WI	IO-520-D	300 / 2850	HC-C3YF-1RF/F8429	86	84	
SA324AL	IO-520-D	300 / 2850	HC-C3YF-1RF/F8429	86	84	

Cessna 206 Series
Land Planes / Floatplanes

CESSNA MODEL	ENGINE	BHP / RPM'S	PROPELLER MODEL	DIAMETER INCHES		SPINNER
				LAND MAX. / MIN.	FLOAT MAX. / MIN.	
206 U206 U206A	IO-520-A	285 / 2700	HC-C3YF-1RF/F8429-4 HC-C3YF-1RF/F8429	82 80	86 84	A-2295-1P
U206B Thru U206F	IO-520-F	300 \ 2850	HC-C3YF-1RF/F8429-6 HC-C3YF-1RF/F8429	80 78	86 84	
U206G (float plane only)	IO-520-F	300 \ 2850	HC-C3YF-1RF/F8429 HC-J3YF-1RF/F8429	NA	86 84	C-4582-P C-4582-1P
P206	IO-520-A	285 / 2700	HC-J3YF-1RF/F8429-4 HC-J3YF-1RF/F8429	82 80	86 84	
P206 A Replaces McCauley C58, C79, C90)	IO-520-A	285 / 2700	HC-C3YF-1RF/F8429-4 HC-C3YF-1RF/F8429	82 80	86 84	A-2295-1P
P206 A Replaces McCauley C73, C77, C88)	IO-520-A	285 / 2700	HC-J3YF-1RF/F8429-4 HC-J3YF-1RF/F8429	82 80	86 84	C-4582-1P
P206B Thru P206E	IO-520-A	285 / 2700	HC-J3YF-1RF/F8429-4 HC-J3YF-1RF/F8429	82 80	86 84	

Modified (STC's)
C-206
Land Planes / Floatplanes

STC No.	ENGINE	BHP / RPM's	PROPELLER MODEL	DIAMETER INCHES		SPINNER
				LAND PLANE MAX / MIN	FLOAT PLANE MAX / MIN	
SA10010SC	IO-550-F	300 / 2700	HC-(C,J)3YF-1RF/F8429-4 HC-(C,J)3YF-1RF/F8429	82 80	86 84	A-2295-(1,2)P C-4582-(1)P D-5732-P
SA00332AT U206B thru G	IO-550-F	300 / 2700	HC-(C,J)3YF-1RF/F8429-4	82 80	NA	A-2295-(1,2)P or C-4582-(1)P
SA1482GL U206B thru G	IO-550-F	300 / 2700	HC-(C,J)3YF-1RF/F8429-4 HC-(C,J)3YF-1RF/F8429	82 80	86 84	
SA02507AT-D U206B thru G P206A thru E TU206F & G	IO-550-N	310 / 2700	HC-J3YF-1RF/F8429-4 HC-J3YF-1RF/F8429	82 80	86 84	C-4582-(1)P
SA02768CH	IO-550-F- CF	310/ 2700	HC-(C,J)3YR-1RF/F8429	82 80	86 84	A-2295-(1,2)P or C-4582-(1)P
SA2830SO U206A thru G P206 P206 A thru D	IO-550-F	300 / 2700	HC-(C,J)3YF-1RF/F8429-4 HC-(C,J)3YF-1RF/F8429	82 80	86 84	
SA01300AT TU206A thru G TP206A thru F	IO-550-F	300 / 2700	HC-(C,J)3YF-1RF/F8429-4 HC-(C,J)3YF-1RF/F8429	82 80	86 84	

4.0 LOW PITCH STOPS SETTING:

- 4.1 If necessary, adjust low pitch stops per Section 4 of Hartzell Propeller Owner's Manual No. 115N. Should low pitch stop need to be adjusted more than 1 degree (3/4 turn), this may be an indication that your engine is not making rated horsepower.
- 4.2 The above data represent SEA LEVEL standard day conditions.
- 4.3 Pitch Stop Settings measured at 30" station

<u>Blade Design</u>	<u>Horsepower</u>	<u>RPM</u>	<u>Low</u>	<u>High</u>
F8429	235 /240	2700	10.0	29
F8429	310	2700	11.5	29
F8429	300	2700	11.5	29
F8429	285	2700	11.2	29
F8429	300	2800	11.5	29
F8429	300	2850	10.1	29
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F8429-4	235 /240	2700	10.5	29
F8429-4	270	2700	11.3	29
F8429-4	310	2700	12	29
F8429-4	300	2700	12	29
F8429-4	285	2700	11.7	29
F8429-4	300	2800	10.6	29
F8429-4	300	2850	10.6	29
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F8429-6	235/240	2700	10.5	29
F8429-6	310	2700	12.3	29
F8429-6	300	2700	12.3	29
F8429-6	285	2700	11.7	29
F8429-6	300	2800	10.9	29
F8429-6	300	2850	10.9	29

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