

INSTALLATION INSTRUCTIONS

SUPPLEMENTAL TYPE CERTIFICATE

SA03024CH

MOONEY AIRCRAFT MODELS
M20R, S & TN

INSALLATION OF HARTZELL
PROPELLERS

PHC-J3YF-1RF/F7498()

FAA Approved: _____

FAA APPROVED



Date: _____

NOV 22 2011

CHICAGO AIRCRAFT
CERTIFICATION OFFICE
CENTRAL REGION

LOG OF REVISIONS

Rev	Rev Date	Pages	Description of Revision	Approved	FAA Approved
IR	08/24/11	11	Initial Release	<i>Bob Minnis</i>	
IR	10/25/11	ALL	Added STC number	<i>Bob Minnis</i>	

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1.0 INTRODUCTION

The modification replaces the existing McCauley or Hartzell Propeller with the Hartzell-Propeller, model number PHC-J3YF-1RF/F7498() constant speed propeller.

2.0 INSTALLATION INSTRUCTIONS

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

2.1 Applicable Manuals:

- Hartzell Propeller Owner's Manual, 115N (Metal blade)
- Mooney Aircraft Company Maintenance Manual, Models M20R, S & TN
- FAA approved Airplane Flight Manual Supplement No. M2011-8

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 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. 16 or later approve revisions and Mooney Aircraft Company Maintenance Manual, Models M20R, S & TN.

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 other 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:

- Placard concerning other propellers are obsolete.

- 2.10 Perform static test, check for function and oil leakage.
- Perform full power static RPM check. Adjust low pitch stop (if required to obtain rated RPM's) per Section 4 of Hartzell Propeller Owner's Manual 115N.
 - Low pitch ----- 16.5 ± 0.2 (for reference)
 - High pitch ----- 38.0 ± 1.0 (set by the manufactory)
 - Check for proper governor control cable cushion, adjust as required.
 - Adjust fuel flow in accordance with Aircraft Company Maintenance Manual Engine or in accordance with STC's that may be installed.
 - TCM Service Information SID 97-3C or latest revision 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 log book entries.

2.11 Change weight and balance record and equipment list:

Installation

Hartzell Propeller PHC-J3YF-1RF/F7498() propeller with spinner:

Weight = 72.5 Lbs.

- 2.12 Post-installation dynamic balance of the propeller / engine combination is recommended per Section 61-00-15 Page 6-25 of the Hartzell Owner's Manual 115N.
- 2.13 Make the appropriate logbook entries and return aircraft to service with FAA Form 337 referencing STC.

External configuration, mechanical and electrical interfaces, and limitations of the modified engine model remain identical to the currently approved aircraft models.

Note: 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

8am - 5pm US Eastern Time

(937) 778-4376

after hours AOG support

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

Mooney M20R, S & TN

MOONEY MODEL	ENGINE RPM		PROP MODEL	DIAMETER INCHES		SPINNER
	MAX	MAX CONT		MAX	MIN	
M20R	2500	2500	PHC-J3YF-1RF/F7498()	76	74	A-2295-10(P)
M20S	2400	2400	PHC-J3YF-1RF/F7498()	76	74	
M20TN	2500	2500	PHC-J3YF-1RF/F7498()	76	74	

**Modified (STC's)
 Mooney M20R, S & TN**

STC No.	Engine	BHP / RPM's	Prop Model	DIAMETER INCHES		SPINNER
				MAX	MIN	
SA02988AT M20S	IO-550-G	280 / 2500	PHC-J3YF-1RF/F7498()	76	74	A-2295-10(P)
SA02193CH M20 R & S	IO-550-G	310 / 2700	PHC-J3YF-1RF/F7498()	76	74	
SA02483CH	TSIO-550-G	310 / 2700	PHC-J3YF-1RF/F7498()	76	74	

END