Minnis Aviation
9165 Edgewater Drive
Stanwood, MI 49346

Report: M2020-03
Revision: IR
Date: 07 July 2020

INSTALLATION INSTRUCTIONS

SUPPLEMENTAL TYPE CERTIFICATE ST04565CH

HARTZELL PROPELLER MODEL HC-I3YR-1RF/F7498(B,K)-1

ON

MOONEY INTERNATIONAL CORPORATION MODEL M20M TURBOCHARGED AIRCRAFT

FAA Approved: Kyle Gregory Bush

Digitally signed by Kyle Gregory Bush
Date: 2022.04.01 08:51:26 -05'00'

Date: _____

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LOG OF REVISIONS

Rev	Rev Date	Pages	Description of Revision	Approved	FAA Approved
IR	07 July 2020	1 -7	Initial FAA submittal	Bob Minnis	Kyle Gregory Bush Digitally signed by Kyle Gregory Bush Date: 2022.04.01 08:51:41 -05'00'

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1.0 INTRODUCTION

The modification replaces the currently installed propeller with the Hartzell Propeller, model number HC-13YR-1RF/F7498(B,K)-1 and Hartzell Spinner, P/N 102870 .

2.0 INSTALLATION INSTRUCTIONS

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

2.1 Applicable Manuals:

- Installation Instructions M2020-03
- Hartzell Propeller Owner's Manual, 115N (Metal blade)
- Mooney International Corp. Maintenance Manual, Models M20M
- FAA approved Airplane Flight Manual Supplement No. M2020-06

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 Mooney Maintenance Manual, Models M20M.

2.3 Tooling requirements

- Safety wire pliers
- Torque wrench (1/2-inch drive)
- Torque wrench adapter
- ¾ 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 (MS2875-228) or FAA approved P/N. Refer to Mooney M20M Part Manual.

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 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 Mooney Service Instruction, Lycoming Engine Setup Procedures or in accordance with STC's that may be installed.
- After adjustment is complete, final safety checks are made, safety wire installation as required, perform flight test, make all required logbook entries.

2.11 Change weight and balance record and equipment list:

Hartzell-Propeller HC-13YR-1RF/F7498(B,K)-1 propeller with spinner P/N 102870:

Propeller Hub & Blades	WEIGHTS Lbs.	Length	
		Max - Inches	Min - Inches
HC-13YR-1RF/F7498(B,K)-1	76.8	75.0	74.0

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.

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

3.0 MODEL ELIGIBILITY

3.1 Mooney International Model M20M.

4.0 LOW PITCH STOPS SETTING

- 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.
- **The above data represent SEA LEVEL standard day conditions**.

Note: Estimated pitch stops are 14.1 +/- .2, and 31.0 +/- 1.0.

CAUTION

Special attention should be made when checking the stop setting for a turbocharged engine. The ability of these engines to maintain rated power to well above 12,000 ft MSL, where the air density is much less, will allow the RPM's to be much higher than that of the sea level propeller setting. It is recommended that propeller adjustment be made as close to sea level as possible.

END