



SERVICE BULLETIN 227B

August 28, 2001

TO: All FAA-Approved Propeller Repair Stations, Owners, Operators, and Aircraft Maintenance Personnel

SUBJECT: Propeller Installation Mounting Torque

MODELS AFFECTED: All McCauley Propellers

SERVICE MANUALS AFFECTED: 730720, 720415, 710930, 780630, 701115, 761001, 810915, 790901, 860201, 810301, 880415, 890119, and CMM1100-1

This service information should be added to the appropriate McCauley Service Manuals until the next revision is issued.

Service Bulletin 227B replaces Service Bulletin 227A dated September 21, 1998. Service Bulletin 227B adds the Orenda engines and specific torque for C524 propeller. Lines in margin indicate changes.

Previously service information for the 1C235/LFA7570 and 1A170E/JHA7660 propellers stated mounting torque for these propellers was 540 to 480 lb. in. The correct torque is per Table 1.

All McCauley propellers have specified installation instructions and torque values for mounting hardware. The installation procedures require propellers to be installed with no lubrication or with lubrication. *Installation with or without lubrication is engine specific.* When a propeller is installed without lubrication, all mounting surfaces and threads must be clean and dry. When a propeller is installed with lubrication, threads, nuts and nut torquing surfaces are lubricated with grease (MIL-T-83483).

This information is located on the installation decal, A-2230-X, which is installed on the hub.

Torque for installation of fixed pitch propellers is contained in the aircraft maintenance manual. You may reference Table 1 for the correct torque for fixed pitch propellers.

COMPLIANCE: Apply correct installation decal (if needed) and follow appropriate installation instructions at any propeller installation.

APPROVAL: FAA approval has been obtained on technical data in this publication that affects product type design.

TO OBTAIN SATISFACTORY RESULTS, PROCEDURES SPECIFIED IN THIS SERVICE INFORMATION MUST BE ACCOMPLISHED IN ACCORDANCE WITH ACCEPTED METHODS AND PREVAILING GOVERNMENT REGULATIONS. MCCAULEY PROPELLER SYSTEMS CANNOT BE RESPONSIBLE FOR THE QUALITY OF WORK PERFORMED IN ACCOMPLISHING THIS SERVICE INFORMATION.

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WARNING

Lubricated torque values may be used only when specified lubricant is properly applied.

**NEVER use lubricated values without lubricant
or**

DRY torque value with lubricant.

Failure to use correct torque values or procedures may cause stripped studs/nuts or loose mounting of propellers.

CONTINENTAL ENGINE APPLICATIONS (Constant Speed)

All propellers installed on Continental engines use lubrication on the mounting hardware at installation.

McCauley has manufactured three styles of propellers for the Continental engine.

Style 1: Hubs were manufactured in which the bolts extend through the hub wall. These hubs have a counterbore where each bolt protrudes through the hub. O-rings are installed in the counterbore prior to propeller installation. Propellers with this style hub use the A-2230-10 decal (Figure 1).

Style 2: Hubs are now manufactured with studs threaded directly into the hub wall mounting surface. Propellers with this style hub use the A-2230-9 decal (Figure 1).

Style 3: 3FF32C501 propeller models only use A-2230-7 decal (Figure 1).

FRANKLIN ENGINE APPLICATIONS (Constant Speed)

All propellers installed on Franklin engines use lubrication on the mounting hardware at installation. These propellers use the A-2230-9 decal (Figure 1).

LYCOMING ENGINE APPLICATIONS (Constant Speed)

All propellers installed on Lycoming engines use no lubrication on the mounting hardware. This installation uses a dry torque value. These propellers use the A-2230 decal (Figure 1).

3AF32C524 propeller models only use A-2230-9 decal (Figure 1). The D-7548/C524 is a Continental hub used on a Lycoming engine. The Lycoming GO-480 engine has a Continental engine flange.

GARRETT ENGINE APPLICATIONS
PRATT-WHITNEY ENGINE APPLICATIONS

All propellers installed on Garrett or Pratt-Whitney engines are to be installed with lubrication on mounting hardware. These propellers use the A-2230-7 decal (Figure 1).

ORENDA ENGINE APPLICATIONS

All propellers installed on Orenda engines are to be installed with lubrication on mounting hardware. These propellers use the A-2230-7 decal (Figure 1).

A-2230

<u>PROPELLER INSTALLATION INSTRUCTIONS</u>	A-2230
<ol style="list-style-type: none"> 1. Lightly oil O-ring and hub bore surfaces only. 2. Propeller face, stud and nut threads, engine flange holes, and both flange surfaces must be clean and dry. 3. Torque nuts 65 to 55 lb-ft. 	

A-2230-7

<u>PROPELLER INSTALLATION INSTRUCTIONS</u>	A-2230-7
<ol style="list-style-type: none"> 1. Lightly oil O-ring and hub bore surfaces only. 2. Wipe clean propeller face and both engine flange surfaces, then install propeller onto propshaft. 3. Liberally apply grease, A-1637-16 (MIL-T-83483) only, to threads of studs & nuts; also to faces of nuts & spacers. 4. Torque nuts 68 to 72 lb-ft. <u>LUBRICATED TORQUE ONLY</u> 	

A-2230-9

<u>PROPELLER INSTALLATION INSTRUCTIONS</u>	A-2230-9
<ol style="list-style-type: none"> 1. Lightly oil O-ring and hub bore surfaces only. 2. Wipe clean propeller face and both engine flange surfaces, then install propeller onto propshaft. 3. Liberally apply grease, A-1637-16 (MIL-T-83483) only, to threads of studs & nuts; also to faces of nuts & spacers. 4. Torque nuts 50 to 45 lb-ft. <u>LUBRICATED TORQUE ONLY</u> 	

A-2230-10

<u>PROPELLER INSTALLATION INSTRUCTIONS</u>	A-2230-10
<ol style="list-style-type: none"> 1. Lightly oil O-ring and hub bore surfaces only. 2. Propeller face , stud and nut threads, engine flange holes, and both flange surfaces must be clean and dry. 3. Verify that bolt O-rings are properly seated in bottom of counterbores then install propeller onto propshaft. 4. Liberally apply grease, A-1637-16 (MIL-T-83483) only, to threads of bolts and nuts and to faces of nuts. 4. Torque nuts 50 to 45 lb-ft. <u>LUBRICATED TORQUE ONLY</u> 	

Figure 1. Decals

The installation torque for McCauley fixed pitch propellers is determined by the bolt diameter.

Bolt or Nut Diameter	Torque (DRY)	
	Pound-Feet	Pound-Inches
3/8	30 to 25	360 to 300
7/16	45 to 40	540 to 480
1/2	65 to 55	780 to 660

Table 1: Fixed Pitch Bolt Torque

Torquing With Adapters

Use proper calculations when using torque adapters to ensure correct installation torque.

If an adaptor or extension is attached to the torque wrench drive end and adds to its length, then the actual applied torque will be greater than the dial reading. The following formula should be used to find what the dial should read in order to obtain the correct applied torque:

$$\text{Dial Reading} = \frac{\text{Torque Wrench Length (A) X Desired Torque}}{\text{Torque Wrench Length (A) + Extension Length (B)}}$$

NOTE: If torque wrench reads in FT-LBS, then (A) and (B) must be in feet.
If torque wrench reads in IN-LBS, then (A) and (B) must be in inches.

CAUTION: It may be necessary to use various adapters in certain applications. Extreme caution must be exercised to ensure that accurate torque is being applied for maximum retention.