

SERVICE BULLETIN



Service Bulletin No.: DAC1-61-01 Rev. 3

Date Issued: August 28, 2002

Title: Sensenich Propeller Installation

Page: 1 of 8

1. ATA Code: 6100

2. Effectivity: DA20-C1 s/n C0001 up to and including C0192.

3. General: This service bulletin addresses the Sensenich propeller installation.

This revision adds the use of special extended thread 7/16" attachment bolts (P/N 22-6103-00-03) as an alternative to the AN7-47A bolts. These extended thread bolts do not require AN960-716 or AN960-716L shim washers to ensure proper thread engagement. The extended thread bolts are identified by the "D, A and X" letters on the head. A Part III has been added to this bulletin to provide the procedure for replacing the AN7-47A bolts with the extended thread bolts.

PART I – Describes the procedure for the replacement of propellers with 3/8" attachment bolts with a propeller that uses 7/16" diameter attachment bolts (AN7-47A or 22-6103-00-03). This installation increases the clamping force of the propeller and allows torque inspection without the removal of the forward spinner dome.

PART II – Describes the replacement of castellated nuts and cotter pins, as fitted to some aircraft, with self-locking nuts. The installation of self-locking nuts makes torque inspection easier.

PART III – Describes the procedure for the replacement of AN7-47A attachment bolts with the 22-6103-00-03 extended thread bolts.

4. Compliance: Compliance with this service bulletin is recommended.

5. Approval: The engineering data referenced or contained in this service bulletin is approved as part of the type design.

6. Labour: Approximately 2 hours will be required to accomplish Part I of this service bulletin.

This estimate is for direct labor performed by a technician and it does not include setup, planning, familiarization, cure time, part fabrication or tool acquisition.

SERVICE BULLETIN



Service Bulletin No.: DAC1-61-01 Rev. 3

Date Issued: August 28, 2002

Title: Sensenich Propeller Installation

Page: 2 of 8

7. Material: Part I	Part Number	Description	Qty
Sensenich Supplied	W69EK7-63 (or W69EK7-63 G)	Propeller	1
Diamond Aircraft Supplied (Kit Contents)	22-6103-01-01 AN7-47A MS21044N7 MS9320-13 22-6103-00-01 22-6103-60-00 W69EK7-CF The above material may be ordered as a kit DAC1-61-01 AMK0.	Bushing Bolts (See Note) Self Locking Nuts Washer Pressure Plate (7/16" bolt holes) Backing Plate (non-painted) Propeller Installation Manual, Rev E or Later	6 6 6 6 1 1 1
Diamond Aircraft OR Sensenich	SPT-01-01	Bushing removal/installation Tool (on loan tool program)	1
NOTE The AN7-47A bolts supplied in the materials kit may be replaced with the 22-6103-00-03 extended thread bolts. The 22-6103-00-03 extended thread bolts are identified by the D, A and X markings on the head. Contact Diamond Aircraft Parts Department for these bolts.			
Procure Locally	Loctite 609 AN960-716 AN960-716L	Retaining Compound Shim Washer Shim Washer	A/R A/R A/R
7. Material Part II	Part Number	Description	Qty
	MS21044N7 MS9320-13	Self Locking Nuts Washer	6 6

8. Special Tools: Bushing removal/installation tool SPT-01-01

9. References: DA20 Aircraft Maintenance Manual (AMM) Document number DA201-C1.
Sensenich Manual W69EK7-CF Rev. F or later.

SERVICE BULLETIN



Service Bulletin No.: DAC1-61-01 Rev. 3

Date Issued: August 28, 2002

Title: Sensenich Propeller Installation

Page: 3 of 8

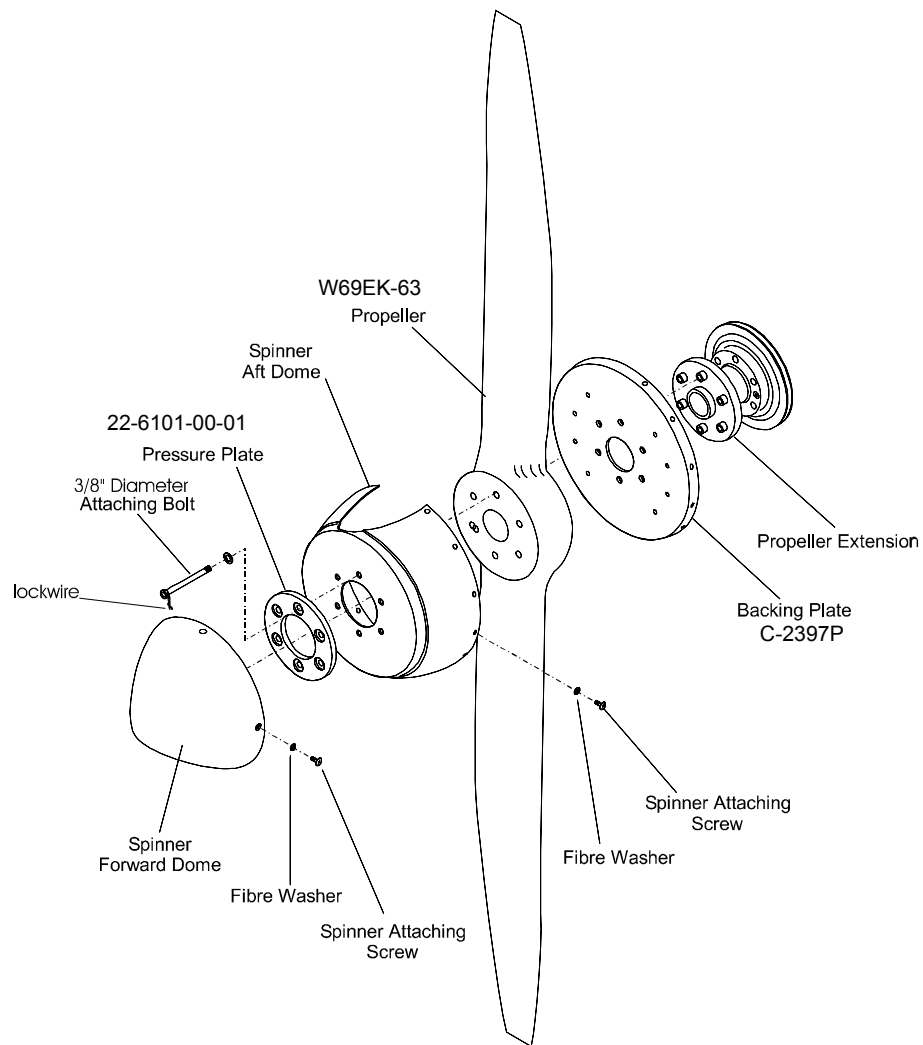


Figure 1

Original Configuration Sensenich W69EK-63

3/8" Diameter Attachment Bolts

SERVICE BULLETIN



Service Bulletin No.: DAC1-61-01 Rev. 3

Date Issued: August 28, 2002

Title: Sensenich Propeller Installation

Page: 4 of 8

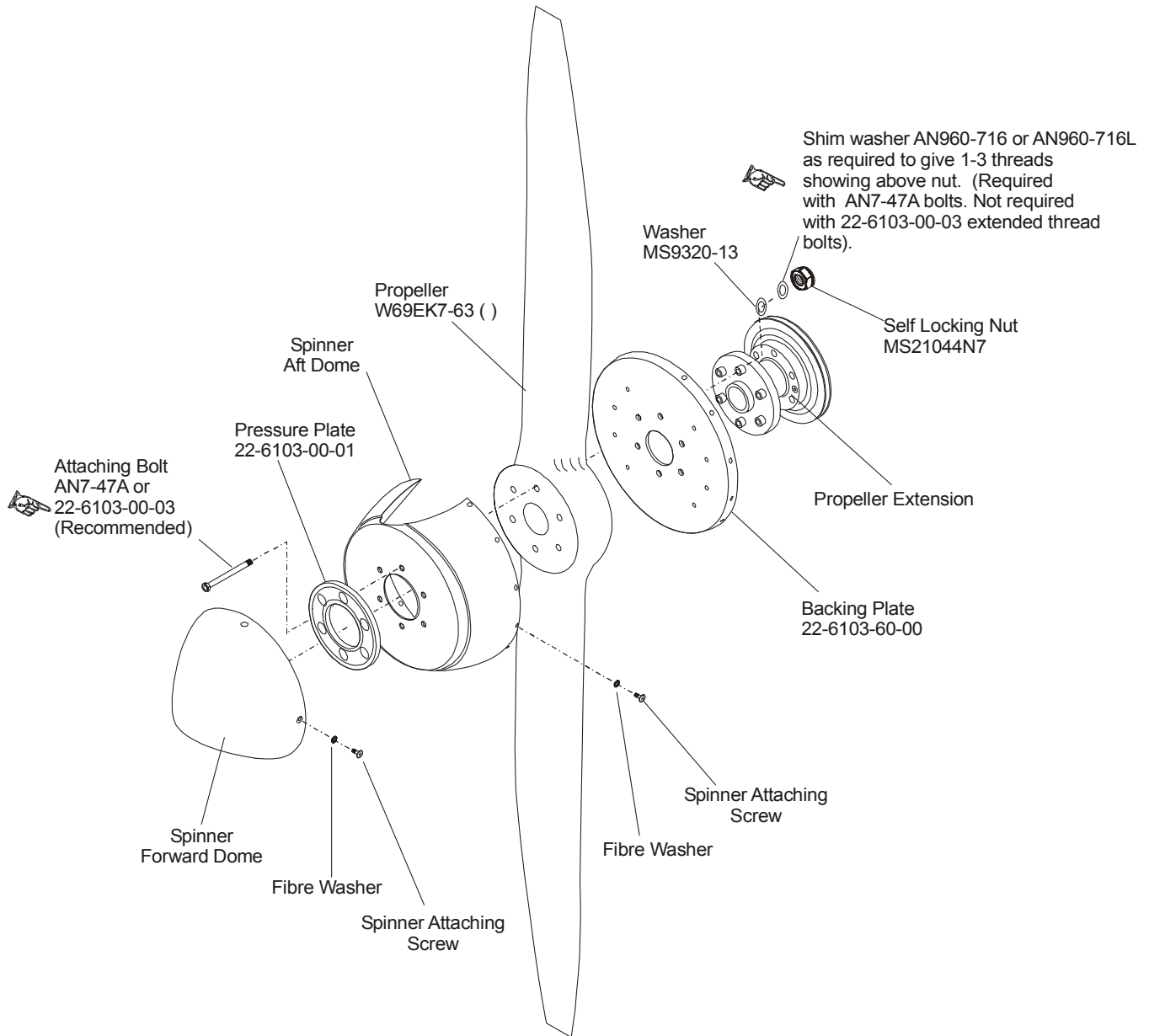


Figure 2

Recommended Configuration Sensenich W69EK7-63 (or W69EK7-63G)

7/16" Diameter Attachment Bolts

Note

The installation and maintenance procedures for the W69EK7-63G propeller are the same as those for the W69EK7-63 propeller.

10. Part I - Accomplishment Instructions:

Installation of W69EK7-63 or W69EK7-63G Propeller:

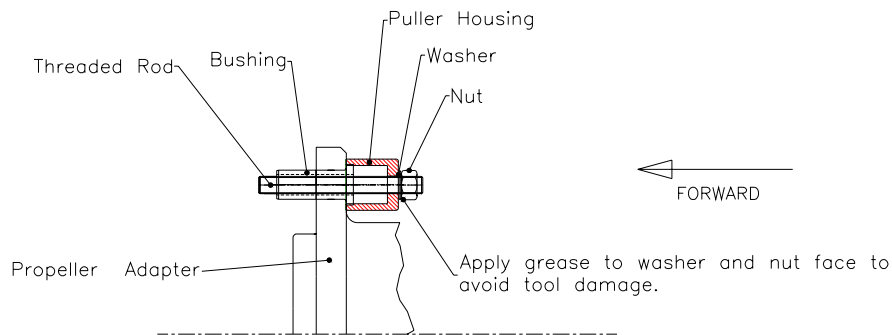
- 10.1 Remove the engine cowlings.
- 10.2 Remove propeller W69EK-63 (reference AMM Chapter 61).
- 10.3 Remove the six bushings in the propeller flange using the removal/installation tool as shown in Figure 3.
- 10.4 Inspect the front spinner bulkhead and engine propeller adapter flange for fretting. If the fretting is severe and cannot be dressed out with emery cloth and re-alodined, then the parts must be replaced.
- 10.5 Clean the bushings and the bushing bores in the propeller adapter using denatured alcohol.
- 10.6 Install the new (7/16" ID) bushings into bores using Loctite 609 and installation tool. Ensure bushings are completely pulled through propeller flange. Reference figure 3 for these instructions.
- 10.7 Clean the propeller adapter flange (mating surface for propeller) with de-natured alcohol.
- 10.8 Clean the propeller hub faces with de-natured alcohol.
- 10.9 Install the W69EK7-63 or W69EK7-63G propeller in accordance with the Sensenich Installation Manual (Doc W69EK7-CF Rev. F or later). If using AN7-47A bolts install AN960-716 or AN960-716L shim washers as necessary under the attachment nut to ensure 1-3 threads showing above the nut. If using 22-6103-00-03 extended thread bolts then more than 3 threads showing is allowed and AN960-716 or AN960-716L shim washers are not required.
- 10.10 Follow the bolt torque check procedure specified in the Sensenich Installation Manual (Doc W69EK7-CF Rev. F or later).
- 10.11 Record that this Service Bulletin has been accomplished in the aircraft's maintenance logbook.

WARNING

THE HUB OF A WOODEN PROPELLER WILL SHRINK OR EXPAND TO MATCH THE AMBIENT CONDITIONS. EXCESSIVE HUB SHRINKAGE, ESPECIALLY POSSIBLE DURING VERY COLD AND/OR DRY AMBIENT CONDITIONS CAN RESULT IN LOSS OF PROPELLER BOLT TORQUE (PRE-LOAD). THIS CAN ALLOW SLIGHT MOVEMENT RELATIVE TO THE DRIVE FLANGE, WHICH MAY RESULT IN DAMAGE TO THE PROPELLER AND/OR THE PROPELLER BOLTS, POSSIBLY EVEN LOSS OF THE PROPELLER! TO PREVENT THIS, PROPER INSTALLATION AND PERIODIC RE-TORQUING IN ACCORDANCE WITH ALL APPLICABLE MAINTENANCE INSTRUCTIONS IS NECESSARY.

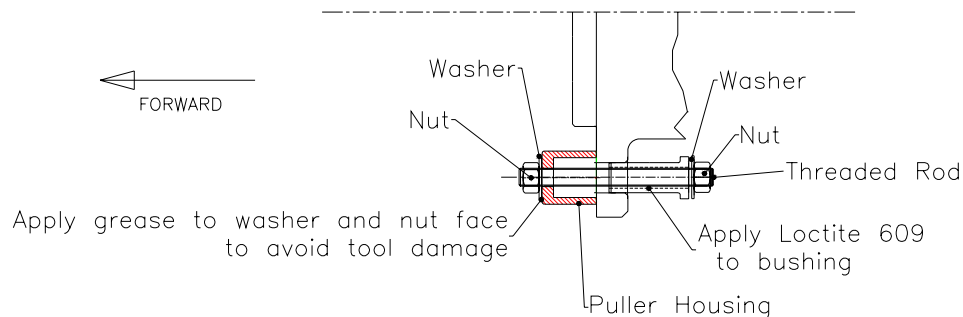
UNDER ALL CIRCUMSTANCES THE INSPECTION INTERVAL MUST NEVER EXCEED 50 HOURS. EXTREME CHANGES IN AMBIENT CONDITIONS (TEMPERATURE/HUMIDITY) MAY REQUIRE SHORTER INSPECTION INTERVALS.

Bushing Removal Procedure



1. Screw threaded rod into aft face of bushing to be removed.
2. Place puller housing onto threaded rod over flange of bushing.
3. Thread greased washer and nut onto threaded rod.
4. Tighten nut to withdraw bushing from propeller adapter.
5. Repeat steps 1–4 for the remaining bushings.

Bushing Installation Procedure



1. Thread nut and washer onto one end of the threaded rod.
2. Ensure both the bushing to be inserted and the bores in the propeller adapter are clean.
3. Coat the bushing with Loctite 609.
4. Grease the nut faces and washers.
5. Insert bushing from the aft side, place housing on the forward face of flange, install threaded rod with nut and thread second nut and washer over the end.
6. Tighten nut until bushing is fully seated on the propeller flange.
7. Dissassemble tool from propeller adapter.
8. Repeat steps 1–7 for the remaining bushings.
9. Remove excess loctite from assembly.

Figure 3

SERVICE BULLETIN



Service Bulletin No.: DAC1-61-01 Rev. 3

Date Issued: August 28, 2002

Title: Sensenich Propeller Installation

Page: 7 of 8

11. Part II - Accomplishment Instructions- Replacement of Castellated Nuts:

- 11.1 Remove the engine cowlings.
- 11.2 Remove cotter pins.
- 11.3 Remove AN310-7 nuts and washers.
- 11.4 Ensure that bolt threads are clean and free from burrs.
- 11.5 Install MS9320-13 washers and MS21044N7 nuts. Install AN960-716 or AN960-716L shim washers as necessary under the attachment nut to ensure 1-3 threads showing above the nut. If these shim washers are required, add the same to all bolts.

NOTE

22-6103-00-03 extended thread bolts can be installed in place of the AN7-47 bolts. If the extended thread bolts are used then more than 3 threads showing above the nut are allowed and AN960-716 or AN960-716L shim washers are not required.

- 11.6 Follow the installation and bolt torque check procedure specified in the Sensenich Installation Manual (Doc W69EK7-CF Rev. F or later).

12. Part III - Accomplishment Instructions- Replacement of AN7-47A Bolts with extended thread bolts:

- 12.1 Remove engine cowlings
- 12.2 Remove MS21044N7 self locking nuts.
- 12.3 Remove the AN7-47A attachment bolts and replace with 22-6103-00-03 extended thread bolts. It is acceptable to have more than 3 threads showing above the nut and AN960-716 or AN960-716L shim washers are not required with the extended thread bolt.
- 12.4 Follow the installation and bolt torque check procedure specified in the Sensenich Installation Manual (Doc W69EK7-CF Rev. F or later).

SERVICE BULLETIN



Service Bulletin No.: DAC1-61-01 Rev. 3

Date Issued: August 28, 2002

Title: Sensenich Propeller Installation

Page: 8 of 8

13. **Weight and Balance:** If **Part I** of this service bulletin has been accomplished the aircraft weight increases .27 kg (0.6 lbs) at a lever arm of -60.8 in (-1.54 m) forward of the datum.
- Accomplishment of **Part II** has a negligible effect on the aircraft weight and balance.
- Accomplishment of **Part III** has a negligible effect on the aircraft weight and balance.

14. **Credit Terms and Conditions:**

Labour Credit:

A labour credit of 2 hours is available until October 31, 2002, for accomplishment of Part I of this service bulletin.

Replacement Part Credit:

Contact Diamond Aircraft Customer Support for replacement part credit information.

To obtain satisfactory results, procedures specified in this Service Bulletin must be accomplished in accordance with accepted methods and current government regulations. Diamond Aircraft Industries Inc. cannot be responsible for the quality of work performed in accomplishing the requirements of this Service Bulletin. Diamond Aircraft reserves the right to void continued warranty coverage in the area affected by this Service Bulletin if it is not incorporated.

If you no longer own the aircraft to which this Service Bulletin applies, please forward it to the current owner and send the name of the current owner to Diamond Aircraft Industries Inc., at the address below.

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