

PROPELLER RPM INDICATOR - MAINTENANCE PRACTICES (PT6A-114/PT6A-114A)

1. General

- A. This section gives the propeller RPM indicator system maintenance practices. The procedures include the propeller RPM indicator removal, installation and RPM indicator functional check for Airplanes 20800001 thru 20800499 and Airplanes 208B0001 thru 208B1999. The section also includes the tach generator removal and installation procedures for airplanes with the PT6A-114/PT6A-114A engine installation. For Airplanes 20800500 and On and Airplanes 208B2000 and On the RPM indicator function is shown on the Garmin G1000 Multifunction Display (MFD).
- B. The propeller RPM indicator has an internal battery pack. The battery pack provides power to the indicator during engine startup and shutdown. The battery can lose its charge if in storage an extended period of time. When the battery is not charged the indicator pointer does not show zero at engine shutdown and on engine startup does not show engine RPM until 1200 shaft RPM. Fifteen hours are needed to fully charge the battery. If an airplane is scheduled for a flight of more than thirty minutes, a thirty minute indicator battery charge is sufficient.

2. Propeller RPM Indicator Removal/Installation

- A. Remove Propeller RPM Indicator (Refer to Figure 201).
 - (1) Loosen mounting screw (7) and slide indicator (8) out of instrument panel.
 - (2) Disconnect electrical connector (9) from indicator.
- B. Install Propeller RPM Indicator (Refer to Figure 201).
 - (1) Position indicator (8) in place, connect electrical connector (9) to indicator.
 - (2) Slide indicator into instrument panel and tighten mounting screw (7).
 - (3) Do a check of the RPM indicator. Refer to Propeller RPM Indicator Functional Check.

3. Tach Generator Removal/Installation

- A. Remove Tach Generator (Refer to Figure 201).
 - (1) Open right upper engine cowling, refer to Chapter 71, Cowling and Nose Cap - Maintenance Practices).
 - (2) Remove right nose cap half.
 - (3) Cut safety wire and disconnect electrical connector (1) from tach generator (5).
 - (4) Remove nut (2) and washer (3) securing tach generator (5) and gasket (4) to mounting pad and remove.
- B. Install Tach Generator (Refer to Figure 201).

CAUTION: Ensure splines of tach generator drive shaft are aligned with engine drive during installation.

- (1) Install gasket (4) and tach generator (5) and secure using washer (3) and nut (2). Connect electrical connector (1) to tach generator.
- (2) Install right nose cap half in accordance with Chapter 71, Cowling and Nose Cap - Maintenance Practices.
- (3) Close right upper engine cowling.
- (4) Start the engine in accordance with the Pilot's Operating Handbook and make sure that the tach generator electrical inputs are operating.

4. Propeller RPM Indicator Functional Check

- A. Functional Check Propeller RPM Indicator (Refer to Figure 202).

NOTE: The following test is to be conducted at room temperature using a suitable tachometer test stand which incorporates a tach generator per MIL-G-26611 as a signal source to the indicator. The generator shall be operated in the counterclockwise direction as viewed from the drive end. Monitor the tachometer generator output with a frequency counter with an accuracy of not less than 0.001 Hertz in the 0-80 Hz range.

- (1) Remove indicator.
- (2) Use a tachometer test stand and apply tachometer generator signals from column one of indicator calibration table in Figure 202.
- (3) Tap indicator and check indicator readings. Readings shall be per column three of calibration table within the following limits:
 - (a) +20 RPM from 0 RPM to 599 RPM.

- (b) +16 RPM from 600 RPM to 1599 RPM.
- (c) +10 RPM from 1600 RPM to 2000 RPM.
- (d) +10 RPM at 1900 RPM.

NOTE: Readings shall be taken in both ascending and descending directions.

- (4) If the indicator does not meet the indicator specification, refer to Chapter 77, Propeller RPM Indicator - Troubleshooting.
- (5) Reinstall indicator.

5. Propeller RPM Indicator Battery Charge Procedures

A. Charge the RPM Indicator Battery

- (1) Remove the RPM indicator from the airplane. Refer to Propeller RPM Indicator Removal/Installation in this section.
- (2) Connect a 14 to 28 VAC power source (recommended) or a 18 to 36 VDC power source to two of the three pins at the rear connector of the RPM indicator.

NOTE: Consideration to polarity is not needed when connecting the power source to the RPM indicator pins.

- (3) When an AC power source is used the indicator should show 3000 RPM with a 50 Hz supply and 3600 RPM with a 60 Hz supply.
- (4) When the battery has been charged for fifteen hours disconnect the wires connected to the rear of the indicator.
- (5) Install the indicator in the airplane. Refer to Propeller RPM Indicator Removal/Installation in this section.

NOTE: If an airplane is to fly a minimum of thirty minutes the battery can be installed in the airplane.

- (6) If the battery does not maintain a charge during usual flight operations the indicator should be replaced.

Figure 201 : Sheet 1 : Propeller RPM Indicator Installation

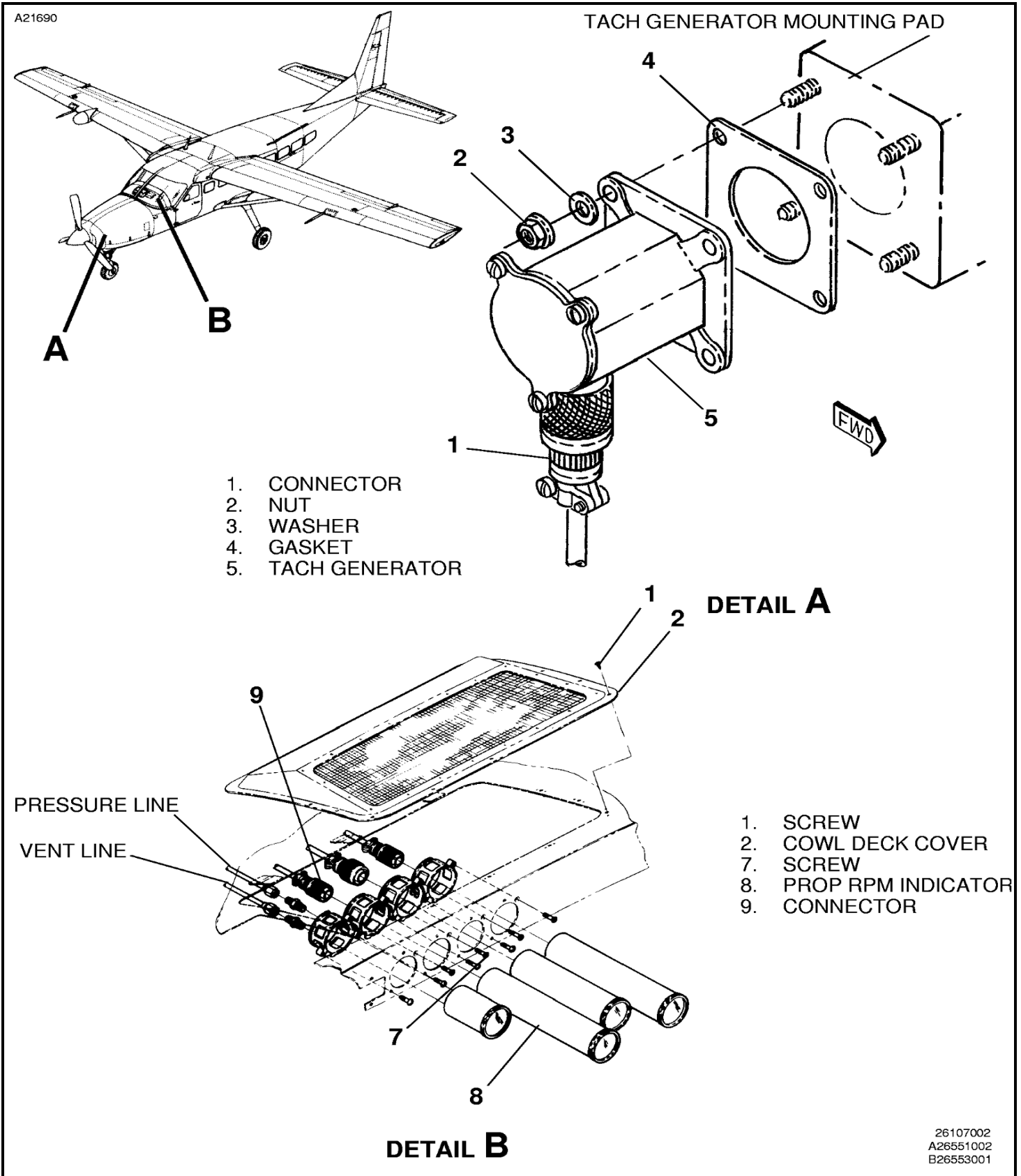
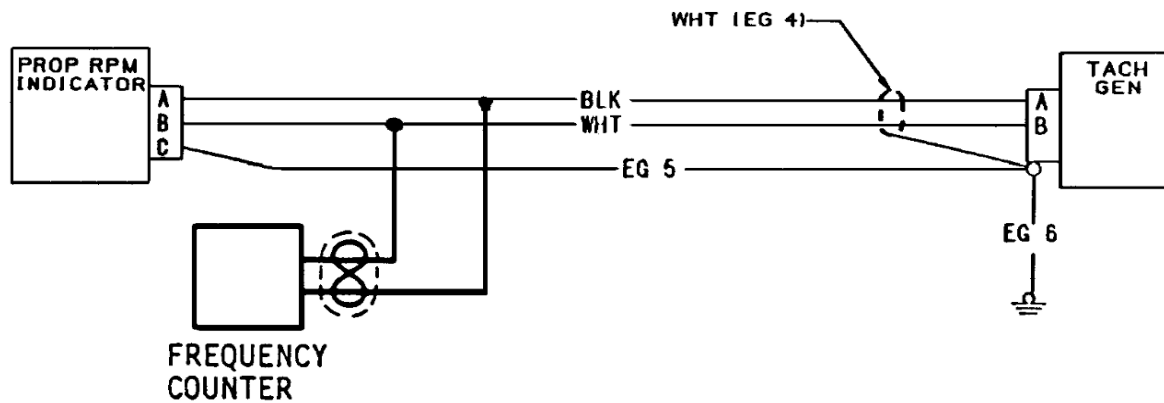


Figure 202 : Sheet 1 : Propeller RPM Functional Check Information

A21691

OUT PUT (HERTZ)	EQUIVALENT (RPM)	INDICATOR READING (RPM X 100)
	0	0
7.37	442.2	200
14.74	884.4	400
22.11	1326.6	600
29.48	1768.8	800
36.85	2211.0	1000
40.54	2432.1	1100
44.22	2653.2	1200
47.91	2874.3	1300
51.59	3095.4	1400
55.28	3316.5	1500
58.96	3537.6	1600
62.65	3758.7	1700
66.33	3979.8	1800
70.02	4200.8	1900
73.70	4422.0	2000

CALIBRATION TABLE



2670X6005