

GAS GENERATOR RPM INDICATOR - MAINTENANCE PRACTICES

1. General

- A. This section gives the gas generator RPM indicator system maintenance practices. The procedures include the Gas Generator RPM removal, installation, and gas generator 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 gas generator RPM function is shown on the Garmin G1000 Multifunction Display (MFD).
- B. The Gas Generator 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 28% 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. Gas Generator RPM Indicator Removal/Installation

- A. Remove Gas Generator RPM Indicator (Refer to Figure 201).
- (1) Loosen mounting screw (13) and slide indicator (14) out of instrument panel.
 - (2) Disconnect electrical connector (15) from indicator (14).
- B. Install Gas Generator RPM Indicator (Refer to Figure 201).
- (1) Connect electrical connector (15) to indicator (14).
 - (2) Slide indicator into instrument panel and tighten mounting screw (13).
 - (3) Do a check of the gas generator RPM indicator. Refer to Gas Generator RPM Indicator Functional Check.

3. Tach Generator Removal/Installation

- A. Remove Tach Generator (Refer to Figure 201).
- (1) Open necessary upper engine cowling to gain access to tach-generator.
 - (2) Cut safety wire and disconnect electrical connector (1) from tach-generator (5).
 - (3) Remove nut (2) and washer (3) securing tach-generator (5) to mounting and remove.
- B. Install Tach Generator (Refer to Figure 201).

CAUTION: Ensure alignment of spines as tach-generator is pulled down with nuts.

- (1) Install gasket (4) and tach-generator (5) and secure using washer (3) and nut (2).
- (2) Connect electrical connector (1) to tach-generator and secure with safety wire.
- (3) Close upper engine cowling.
- (4) Do a check of the gas generator RPM indicator as follows:
 - (a) For Airplanes 20800500 and On and Airplanes 208B2000 and On refer to G1000 Line Maintenance Manual (Cessna Caravan) P/N 190-00869-00 found in the Introduction, List of Publications.
 - (b) For Airplanes 20800001 thru 20800499 and Airplanes 208B0001 thru 208B1999 refer to Gas Generator RPM Indicator Functional Check.

4. Gas Generator RPM Indicator Functional Check

- A. Functional Check Gas Generator 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 having an accuracy of not less than 0.001 Hertz in the 0-80 Hz range.

- (1) Remove indicator.
- (2) Using tachometer test stand, apply tachometer generator signals listed in column one of indicator Calibration Table.
- (3) Tap indicator and check indicator readings. Readings shall be per column three of Calibration Table within the following limits:
 - (a) + or -1 percent RPM from 0 to 30 percent RPM

- (b) + or -0.8 percent RPM from 30 to 80 percent RPM
- (c) + or -0.5 percent RPM from 80 to 101.6 percent RPM
- (d) + or -0.5 percent RPM at 101.6 percent RPM

NOTE: The unit "percent RPM" is to be interpreted as one small division of the auxiliary dial or one-half of one small division of the main dial.

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

- (4) Reinstall indicator.

5. Gas Generator 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 71.4% RPM with a 50 Hz supply and 85.7% 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 : Gas Generator Percent RPM Installation

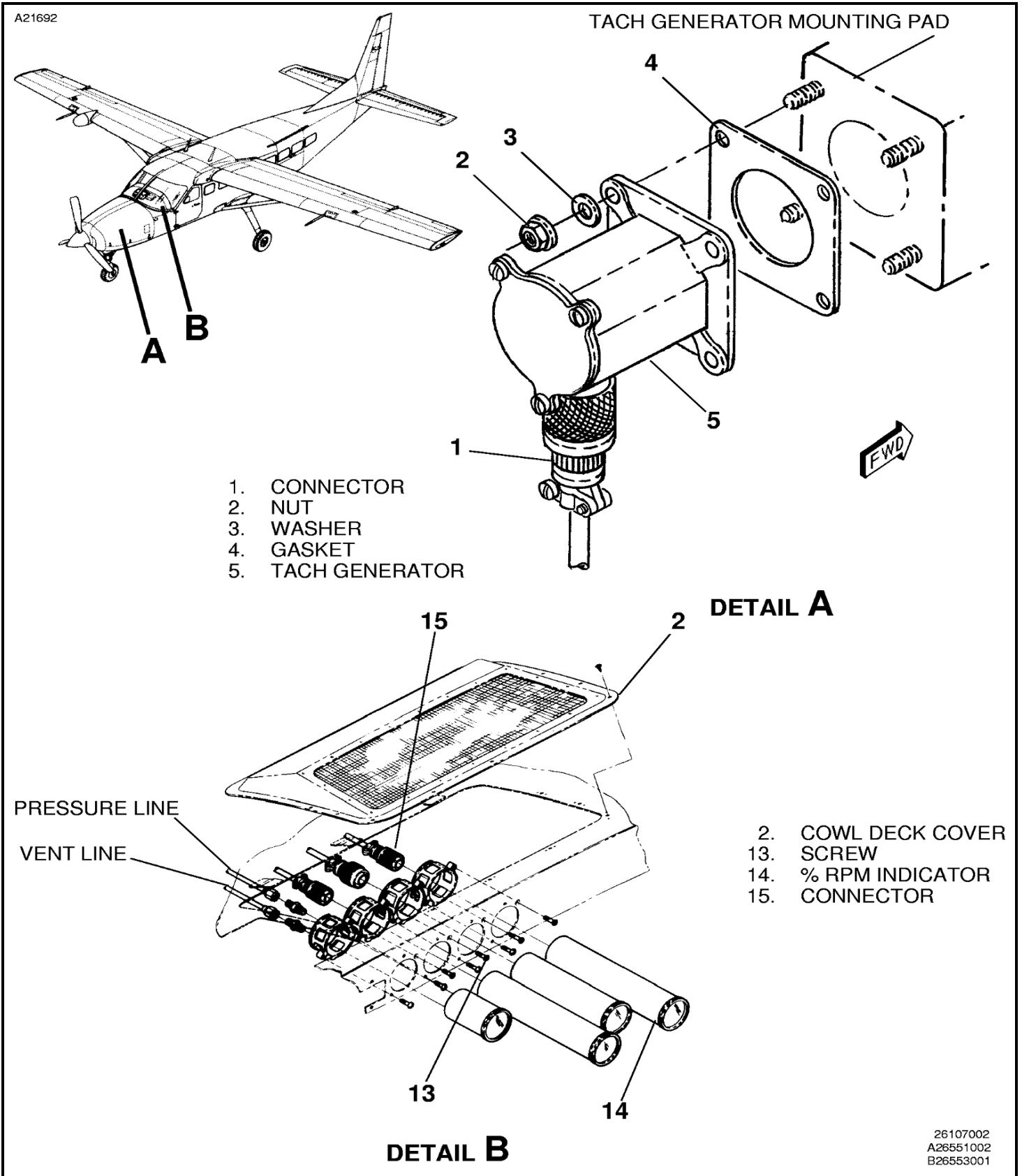
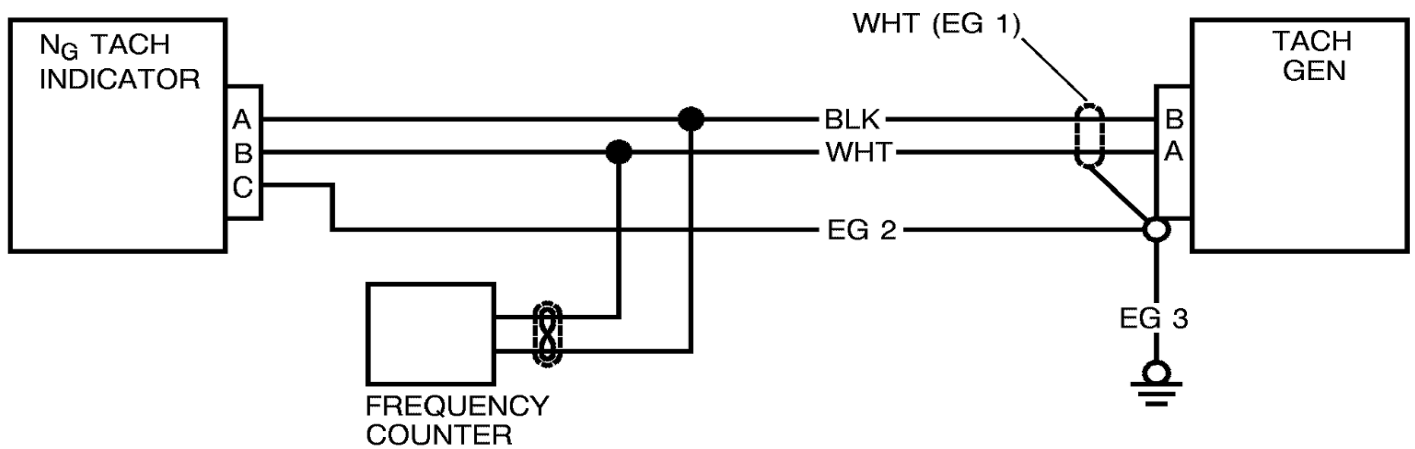


Figure 202 : Sheet 1 : Gas Generator Percent RPM Functional Check Information

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OUTPUT (HERTZ)	EQUIVALENT (RPM)	INDICATOR READING (% X 100)
0.0	0.0	0
7.0	420.0	10
14.0	840.0	20
21.0	1260.0	30
28.0	1680.0	40
35.0	2100.0	50
36.4	2184.0	52
42.0	2520.0	60
49.0	2940.0	70
56.0	3360.0	80
63.0	3780.0	90
70.0	4200.0	100
71.12	4267.0	101.6

CALIBRATION TABLE



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