

INDICATING

1. DESCRIPTION

This section describes that portion of the oil system which is used to indicate the quantity, temperature, and pressure of the oil. Components included are the oil filler cap/dipstick, oil pressure/temperature gage, oil pressure sensor, and oil temperature sensor.

An oil filler cap/dipstick is located at the rear of the engine on the top left side and is accessed through the oil filler door on the upper cowling. The engine oil tank capacity is 8 quarts (7.57 L). Refer to Chapter 12, Servicing for approved engine oil specifications and servicing procedures. (Refer to 12-10)

Serials 0002 thru 1601, 1603 thru 1643, 1645 thru 1662: A 2¼" combination Oil Pressure and Oil Temperature Gage is mounted on the right instrument panel immediately below the EGT/CHT gage. The instrument is internally lighted. The oil pressure pointer sweeps a scale marked from 0 psi to 100 psi. The oil pressure gage receives a signal from a pressure sensor mounted at the aft end of the engine below the oil cooler. Normally, oil pressure may drop to 10 psi at idle but will be in the 30 - 60 psi range at higher RPM. The oil temperature pointer sweeps a scale marked from 75° F to 250° F in 25° F increments. The oil temperature gage receives a signal from a temperature sensor mounted at the lower left side of the engine below the oil cooler. 28 VDC for instrument operation is supplied through the 5-amp ENGINE INST circuit breaker on the Essential Bus.

Serials 1602, 1644, 1663 & subs: Oil pressure is displayed in the upper right corner of the MFD as both a simulated pressure gage and as text. The simulated pressure gage receives a signal from a pressure sensor mounted at the aft end of the engine below the oil cooler via the Data Acquisition Unit (DAU). The simulated pressure gage sweeps a scale marked from 0 psi to 100 psi in 5 psi increments. Oil pressure is also continuously displayed in the engine parameters field located in the lower right corner of the PFD. In the event oil pressure falls below 30 psi or exceeds 75 psi, the MFD will display "Check Oil Pressure" in a yellow advisory box in the lower right corner of the MFD. If oil pressure falls below 10 psi or exceeds 99 psi, the MFD will display "Check Oil Press" in a red advisory box.

Oil temperature is displayed in the upper right corner of the MFD as both a simulated temperature gage and as text. The simulated temperature gage receives a signal from a temperature sensor mounted at the lower left side of the engine below the oil cooler via the Data Acquisition Unit (DAU). The simulated temperature gage pointer sweeps a scale marked from 75° F to 250° F in 10° F increments. In the event oil temperature reaches 235° F, the MFD will display "Monitor Oil Temperature" in a cyan advisory box in the lower right corner of the MFD. If oil temperature exceeds 240° F, the MFD will display "Check Oil Temperature" in a red advisory box in the lower right corner of the MFD. 28 VDC for the digital instrument operation is supplied through the 2-amp ANNUN / ENGINE INST circuit breaker on the Essential Bus.

2. MAINTENANCE PRACTICES

A. Oil Filler Cap/Dipstick

For maintenance practices pertinent to the oil filler cap/dipstick, see Scheduled Servicing. ([Refer to 12-10](#))

B. Oil Pressure/Temperature Gage - *Serials 0002 thru 1601, 1603 thru 1643, 1645 thru 1662* (See [Figure 79-301](#))

- (1) Removal - Oil Pressure/Temperature Gage
 - (a) Set BAT 1, BAT 2, and AVIONICS switches to OFF positions.
 - (b) Pull ENGINE INST circuit breaker.
 - (c) Remove MFD. ([Refer to 31-60](#))
 - (d) Disconnect electrical connector from gage.
 - (e) Remove screws and washers securing gage to instrument panel. Remove gage from airplane.
- (2) Installation - Oil Pressure/Temperature Gage
 - (a) Position gage to instrument panel and secure with screws and washers.
 - (b) Connect electrical connector to gage.
 - (c) Install MFD. ([Refer to 31-60](#))
 - (d) Reset ENGINE INST circuit breaker.
 - (e) Perform Operational Test - Oil Pressure/Temperature Gage. ([Refer to 79-30](#))
 - (f) Perform Oil Pressure Check as described in airplane Operational Check. ([Refer to 05-30](#))
- (3) Operational Test - Oil Pressure/Temperature Gage
 - (a) Set BAT 1 switch to ON position.
 - (b) Verify oil temperature needle indicates bottom of scale.
 - (c) Verify oil pressure needle indicates zero.
 - (d) Set BAT 1 switch to OFF position.

C. Oil Pressure/Temperature Gage - Serials 1602, 1644, 1663 & subs (See Figure 79-301)

Oil pressure is displayed on the MFD and PFD screens. Oil temperature is displayed on the MFD screen.

- (1) Operational Test - Oil Pressure/Temperature Gage
 - (a) Set BAT1 and AVIONICS switches to ON positions.
 - (b) On MFD, when PRESS ANY BEZEL KEY TO CONTINUE is displayed, press any key.
 - (c) If Engine Monitoring is selected, press [Fuel Done] to enter Map page.
 - (d) Rotate left knob to select Engine page.
 - (e) Verify oil temperature needle indicates bottom of scale.
 - (f) Verify oil pressure needle indicates zero.
 - (g) Set BAT1 and AVIONICS switches to OFF positions.

D. Oil Pressure Sensor (See Figure 79-301)

CAUTION: Protect openings exposed as a result of removing sensor against entry of foreign material by installing covers or sealing with tape.

- (1) Removal - Oil Pressure Sensor
 - (a) Set BAT 1, BAT 2, and AVIONICS switches to OFF positions.
 - (b) *Serials 0002 thru 1601, 1603 thru 1643, 1645 thru 1662:* Pull ENGINE INST circuit breaker.
 - (c) *Serials 1602, 1644, 1663 & subs:* Pull ANNUN / ENGINE INST circuit breaker.
 - (d) Remove engine cowling. ([Refer to 71-10](#))
 - (e) Disconnect electrical connector from sensor.
 - (f) Remove sensor from engine.
- (2) Installation - Oil Pressure Sensor
 - (a) Position sensor to engine and install.
 - (b) Connect electrical connector to sensor.
 - (c) Install engine cowling. ([Refer to 71-10](#))
 - (d) *Serials 0002 thru 1601, 1603 thru 1643, 1645 thru 1662:* Reset ENGINE INST circuit breaker.
 - (e) *Serials 1602, 1644, 1663 & subs:* Reset ANNUN / ENGINE INST circuit breaker.
 - (f) Perform Inspection/Check - Oil System Leak. ([Refer to 12-10](#))

E. Oil Temperature Sensor (See Figure 79-301)

CAUTION: Protect openings exposed as a result of removing sensor against entry of foreign material by installing covers or sealing with tape.

- (1) Removal - Oil Temperature Sensor
 - (a) Set BAT 1, BAT 2, and AVIONICS switches to OFF positions.
 - (b) *Serials 0002 thru 1601, 1603 thru 1643, 1645 thru 1662:* Pull ENGINE INST circuit breaker.
 - (c) *Serials 1602, 1644, 1663 & subs:* Pull ANNUN / ENGINE INST circuit breaker.
 - (d) Remove engine cowling. (Refer to 71-10)
 - (e) Disconnect electrical lead from sensor.
 - (f) Remove safety wire securing sensor to engine.
 - (g) Remove sensor and washer from engine. Discard washer.
- (2) Installation - Oil Temperature Sensor
 - (a) Acquire necessary tools, equipment, and supplies.

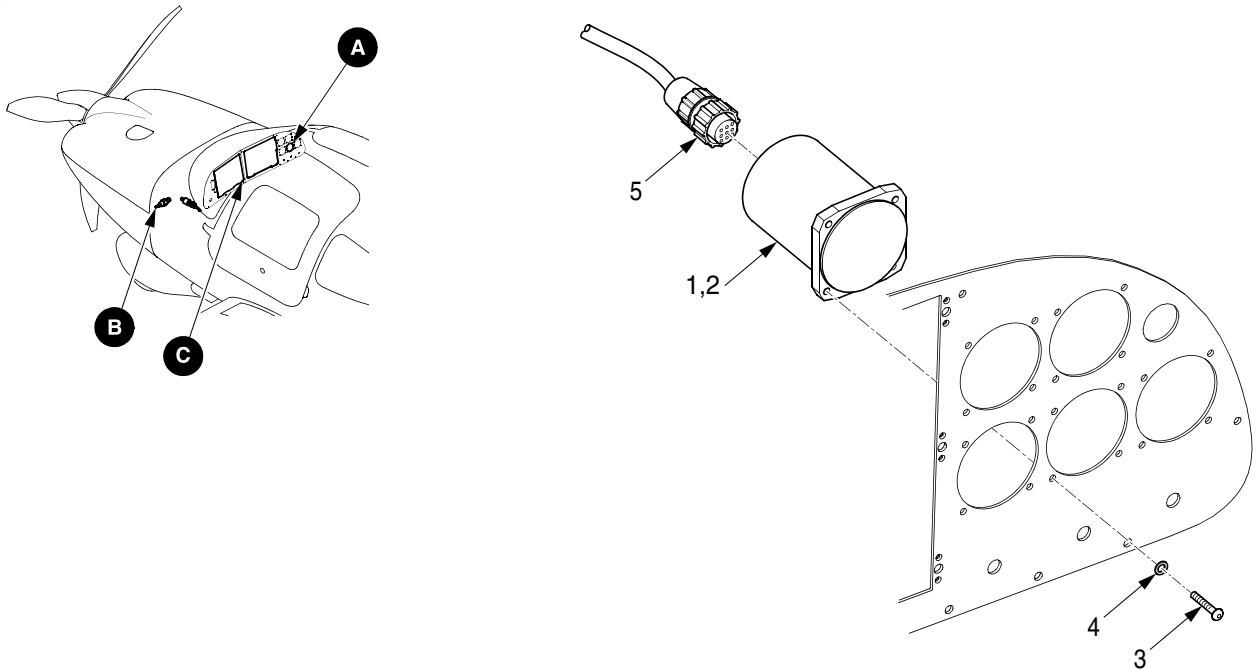
Description	P/N or Spec.	Supplier	Purpose
Safety Wire	-	Any Source	Safetying.

- (b) Position new washer and sensor to engine and install.
- (c) Connect electrical lead to sensor.
- (d) Safety wire sensor to oil cooler. (Refer to 20-50)
- (e) Install engine cowling. (Refer to 71-10)
- (f) *Serials 0002 thru 1601, 1603 thru 1643, 1645 thru 1662:* Reset ENGINE INST circuit breaker.
- (g) *Serials 1602, 1644, 1663 & subs:* Reset ANNUN / ENGINE INST circuit breaker.
- (h) Perform Inspection/Check - Oil System Leak. (Refer to 12-10)

EFFECTIVITY:
All

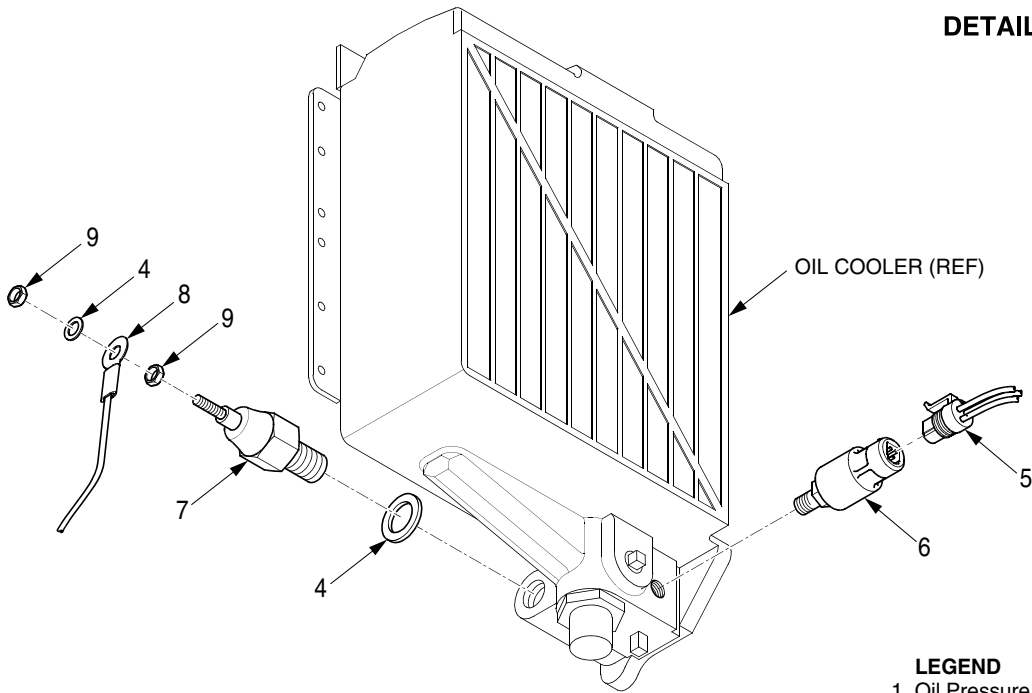
F. Oil Pressure/Temperature Warning Light

A oil pressure/temperature warning light is integrated into the annunciator assembly, mounted top center above the flight instruments. The oil light will illuminate if the oil temperature exceeds 240 ° F (116 ° C) or if the oil pressure is less than 10 psi (68.9 kPa). For maintenance practices pertinent to the annunciator assembly, see Indicating and Recording. ([Refer to 31-50](#))



Serials 0002 thru 1601, 1603 thru 1643, 1645 thru 1662.

DETAIL A



DETAIL B

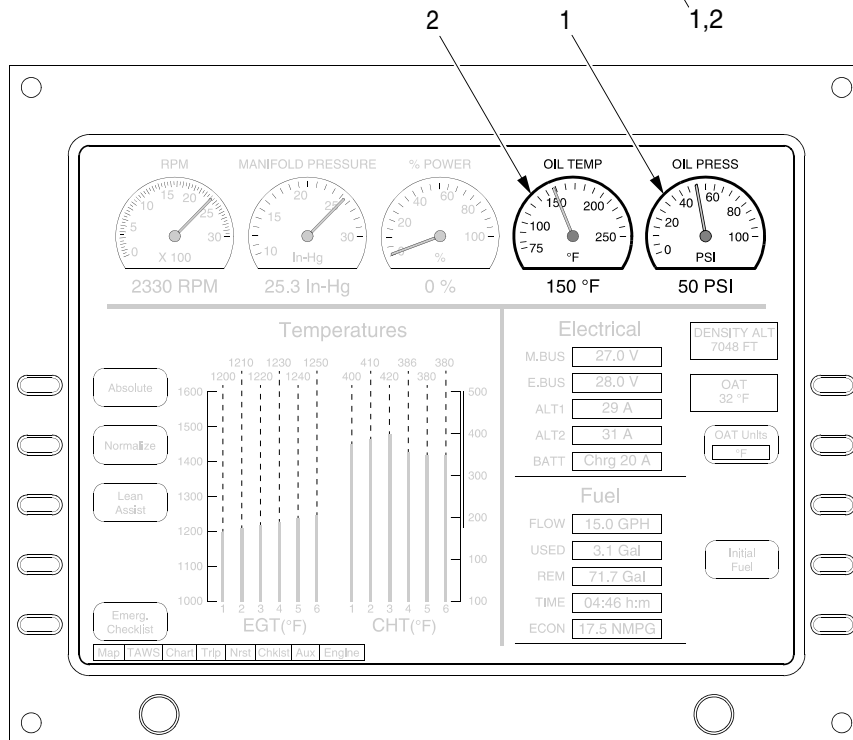
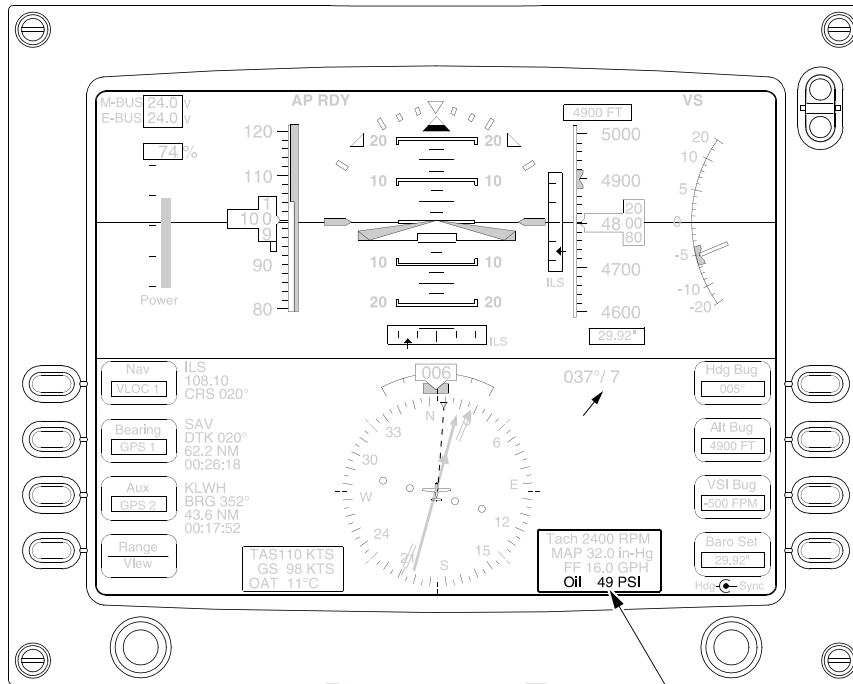
LEGEND

- 1. Oil Pressure Gage
- 2. Oil Temperature Gage
- 3. Screw
- 4. Washer
- 5. Connector
- 6. Oil Pressure Sensor
- 7. Oil Temperature Sensor
- 8. Wire Harness Terminal Ring
- 9. Nut

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Figure 79-301
Oil Pressure and Oil Temperature Indication (Sheet 1 of 2)

EFFECTIVITY:
All



DETAIL C

LEGEND
 1. Oil Pressure Gage
 2. Oil Temperature Gage

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Figure 79-301
Oil Pressure and Oil Temperature Indication - Serials 1602, 1644, 1663 & subs (Sheet 2 of 2)

EFFECTIVITY:
 Serials 1602, 1644, 1663 & subs