

AA-5 SERIES
MAINTENANCE MANUAL

CHAPTER 79

OIL

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ENGINE OIL SYSTEM - DESCRIPTION/OPERATION

1. General

This chapter describes only those units and components of the oil system that are external to the engine. The components include: oil cooler, oil pressure gage, oil temperature gage, and associated wiring and tubing. An optional item is the oil filler access door for servicing, located on the right-hand side of the upper cowl.

The oil cooler is mounted on the left rear engine baffle. The cooler is connected to the engine accessory housing by flexible lines. Air to the cooler is picked up directly from the rear baffle.

The oil pressure gage and the oil temperature gage are mounted in the instrument cluster assembly, which is mounted on the upper right-hand side of the instrument panel.

ENGINE OIL SYSTEM - TROUBLE SHOOTING

1. Oil Cooler Trouble Shooting

TROUBLE	PROBABLE CAUSE	REMEDY
High Temperature indication	Obstructions in oil cooler air passages	Inspect oil cooler core for dirt or obstructions and clean as necessary.

2. Oil Pressure Gauge Trouble Shooting

TROUBLE	PROBABLE CAUSE	REMEDY
No indication	Insufficient oil	Check oil supply and fill as recommended.
	Obstruction in pressure line	Remove all fittings and lines, starting at engine and inspect and clean as required.
	Defective gage	Replace gage
High or low indication	Defective gage	Replace gage
	Oil pressure relief valve out of adjustment	Check engine pressure with a calibrated gage and correct pressure setting as required.

3. Oil Temperature Gage Troubleshooting

TROUBLE	PROBABLE CAUSE	REMEDY
No indication	Blown fuse	Replace with properly rated fuse.
No indication, high or low indication	Gage not grounded	Check gage ground connection and perform necessary repairs.
	Defective wiring	Check system with ohmmeter and perform necessary repairs.
	Defective gage	Repair gage
	Defective probe	Replace probe.
	Defective gage	Temporarily substitute a 28.5 ohm resistance for the probe. If gage does not read 245°F (Red Line), replace gage.
Low indication	Low voltage	Check voltage and adjust accordingly.

ENGINE OIL SYSTEM - MAINTENANCE PRACTICES

1. Oil Cooler Removal/Installation

A. Remove Oil Cooler (See Figure 201)

- (1) Raise upper cowl to gain access.
- (2) Place a container under the oil cooler and disconnect flexible lines at oil cooler inlet and outlet fittings.
- (3) Cut safety wire on two mounting screws and remove screws, spacers, and washers.
- (4) Remove two nuts, screws, and washers securing cooler to engine baffle and remove reinforcing doublers and oil cooler.

B. Install Oil Cooler

- (1) Position reinforcing doublers and oil cooler in place on engine baffle and install washers, spacers, screws, and nuts.
- (2) Install safety wire in drilled screw heads.
- (3) Connect flexible lines at oil cooler inlet and outlet fittings.
- (4) Close cowl and operate engine for 3 minutes. Check cooler, flexible lines, and all connections for leakage.

2. Oil Cooler Inspection

A. Inspect Oil Cooler

- (1) Inspect oil cooler air passages for dirt and obstructions.
- (2) Inspect cooler core for cracks, damage and evidence of leakage.
- (3) Check flexible lines for worn or damaged areas and signs of leakage.

CAUTION: WHEN PERFORMING A SUBMERGED LEAK TEST ON THE OIL COOLER, DO NOT APPLY MORE THAN 100 PSI MAXIMUM.

- (4) If necessary to determine leakage, perform submerged leak test on oil cooler.

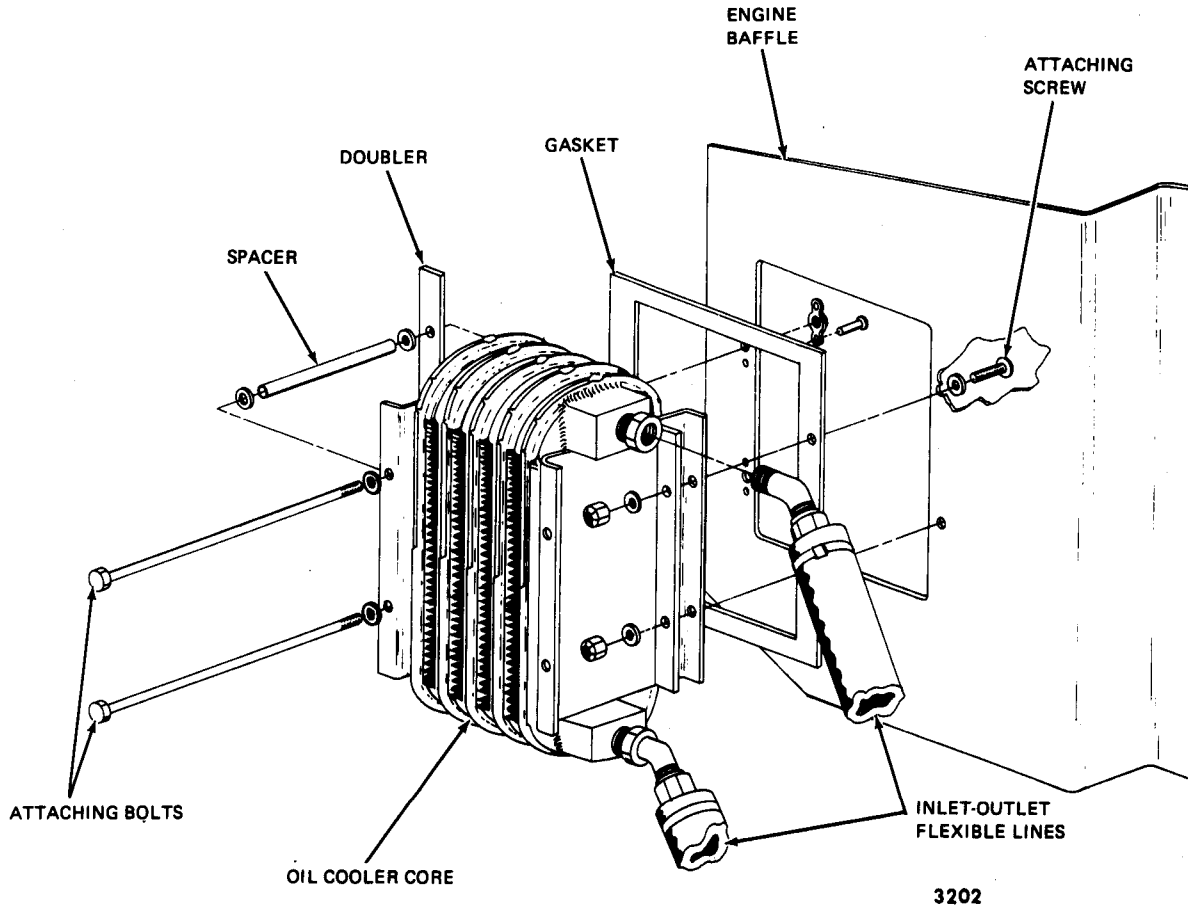
3. Indicating Gages Removal/Installation

A. Remove Oil Temperature and Oil Pressure Gages (See Figure 202)

NOTE: To remove the oil temperature and oil pressure gages the instrument cluster assembly must be removed.

- (1) To gain access, remove screws securing deck assembly to instrument panel. Raise deck assembly and tape to windshield.
- (2) Disconnect wiring from temperature gages at back of instrument cluster assembly.
- (3) Disconnect tubing from pressure gages at back of instrument cluster assembly.
- (4) Remove screws and nuts securing instrument cluster assembly to instrument panel and remove cluster assembly.

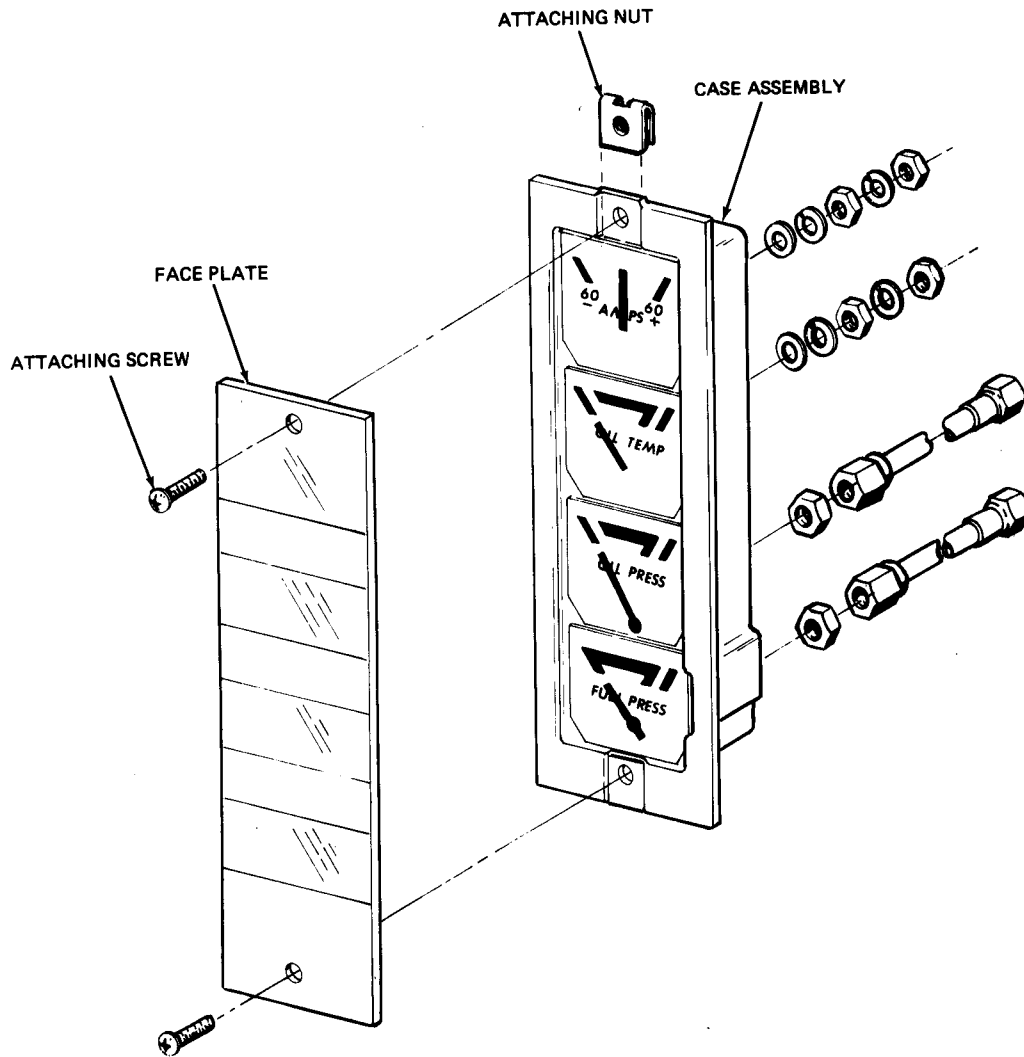
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**Oil Cooler Installation
Figure 201**

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Instrument Cluster Assembly
Figure 202

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- (5) Remove nuts and washers securing oil temperature gage to case and remove gage.
- (6) Remove nut securing oil pressure gage to case and remove gage.

B. Install Oil Temperature and Oil Pressure Gages

- (1) Position oil pressure gage in instrument cluster case and install nut on gage nipple.
- (2) Position oil temperature gage in instrument cluster case and install washers and nuts on terminal studs.
- (3) Position instrument cluster assembly to instrument panel and install attaching screws and nuts.
- (4) Connect tubing to pressure gages at back of instrument panel.
- (5) Connect wiring to temperature gages at back of instrument panel.
- (6) Position deck assembly in place and install screws securing deck assembly to instrument panel.

4. Inspection and Maintenance of Flexible Hoses

A. Inspect Flexible Hoses

- (1) Inspect flexible oil hoses at each 50-hour inspection.
- (2) Examine flexible hose exterior for evidence of leakage.

CAUTION: AVOID EXCESSIVE FLEXING AND SHARP BENDS WHEN EXAMINING HOSES FOR STIFFNESS.

- (3) Check flexible oil hoses for evidence of stiffness.
- (4) Examine flexible oil hoses for evidence of rubbing or chafing.

B. Recommended Maintenance Procedures for Flexible Oil Hoses

- (1) Replace all flexible oil hoses in the engine compartment at engine overhaul or every 5 years, whichever comes first.
- (2) Replace all flexible oil hose that show evidence of leaking or stiffness.
- (3) Avoid twisting the hose at installation.
- (4) Provide as large a bend radius as possible at installation.
- (5) At removal, do not attempt to straighten a flexible hose that has taken a permanent set during extended use in service.
- (6) At reinstallation of flexible hose be sure that hose is returned to original position.
- (7) Route hoses as far as possible from areas of intense heat.
- (8) Refer to AC 43.13-1, Chapter 10, for flexible hose installation procedures.