



ENGINE - FUEL AND CONTROL - FUEL SYSTEM TUBES - TUBE SUPPORT BRACKET ATTACHED WITH  
HEX-HEAD BOLTS - CATEGORY CODE 6 - MOD.ENG-73-0059

1. Planning Information

A. Effectivity

- (1) Aircraft: McDonnell Douglas MD-90
- (2) Engine: V2525-D5 Engines prior to Serial No.V20009.  
V2528-D5 Engines prior to Serial No.V20009.

B. Concurrent Requirements

None

C. Reason

(1) Condition

Limited clearance exists between the Air Cooled Oil Cooler to Fuel Cooled Oil Cooler oil tube and tube support bracket retaining bolt heads.

(2) Background

During assembly it was highlighted that limited clearance existed between the Air Cooled Oil Cooler to Fuel Cooled Oil Cooler oil tube and the bolts which secure the tube support bracket to mounting bracket located on Fan Case flange FC.

(3) Objective

To eliminate possible bolt head foul on oil tube.

(4) Substantiation

A trial installation of the new bolting configuration was carried out on a Class III mock up installation. This demonstrated adequate clearance between the tube support bracket securing bolts and the Air Cooled Oil Cooler to Fuel Cooled Oil Cooler oil tube.

(5) Effects of Bulletin on Workshop Procedures:

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## SERVICE BULLETIN

Removal/Installation	Not affected
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Not affected
Repair	Not affected
Testing	Not affected

## (6) Supplemental Information

None

D. Description

The changes introduced by this Service Bulletin are as follows:

- (1) The tube support bracket bi-hex bolts are replaced with hex-headed bolts.

E. Approval

The part number changes and/or part modifications described in Section 2 and 3 of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Model listed.

F. Compliance

Category Code 6

Accomplish when the sub-assembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected parts and to all affected spare parts.

G. Manpower

Estimated manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	Not applicable
(2) At Overhaul	Not affected

H. Material - Price and Availability

- (1) Modification Kit not required
- (2) See "Material Information" section for prices and availability of future spares.

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## SERVICE BULLETIN

I. Tooling - Price and Availability

Special tools are not required.

J. Weight and Balance

- |                   |   |
|-------------------|---|
| (1) Weight change | T.B.A.  |
| (2) Moment arm    | T.B.A.  |
| (3) Datum         | Engine front mount centerline<br>(Power Plant Station (PPS)100) |

K. Electrical Load Data

This Service Bulletin has no effect on the aircraft electrical load.

L. References

None

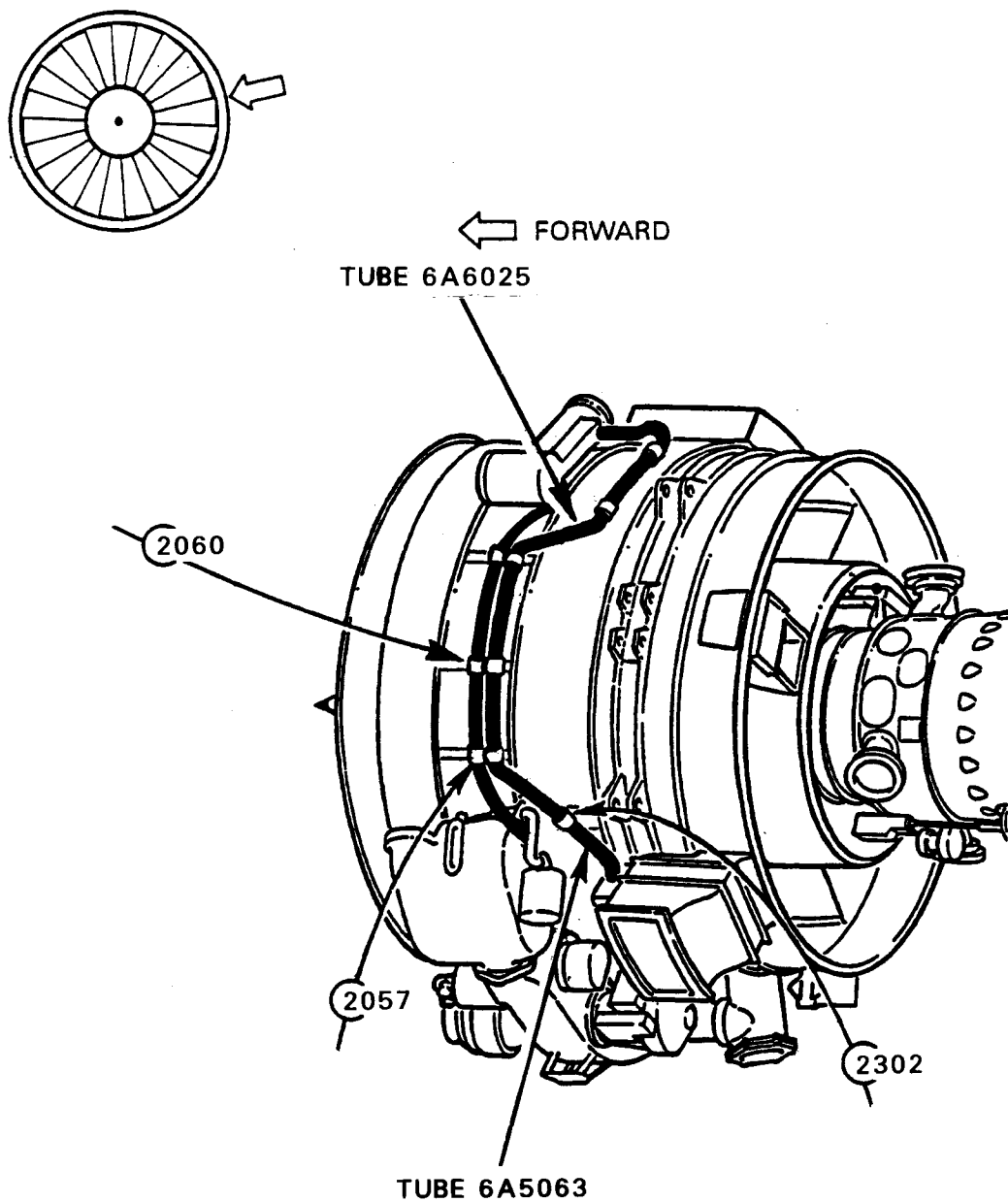
M. Other Publications affected

- (1) V2500 Engine Illustrated Parts Catalog (S-V2500-3IA), Chapter/Section 73-11-49 and 79-21-49.
- (2) V2500 Engine Manual (E-V2500-3IA), 72-00-32, Removal -05 and Installation -01.

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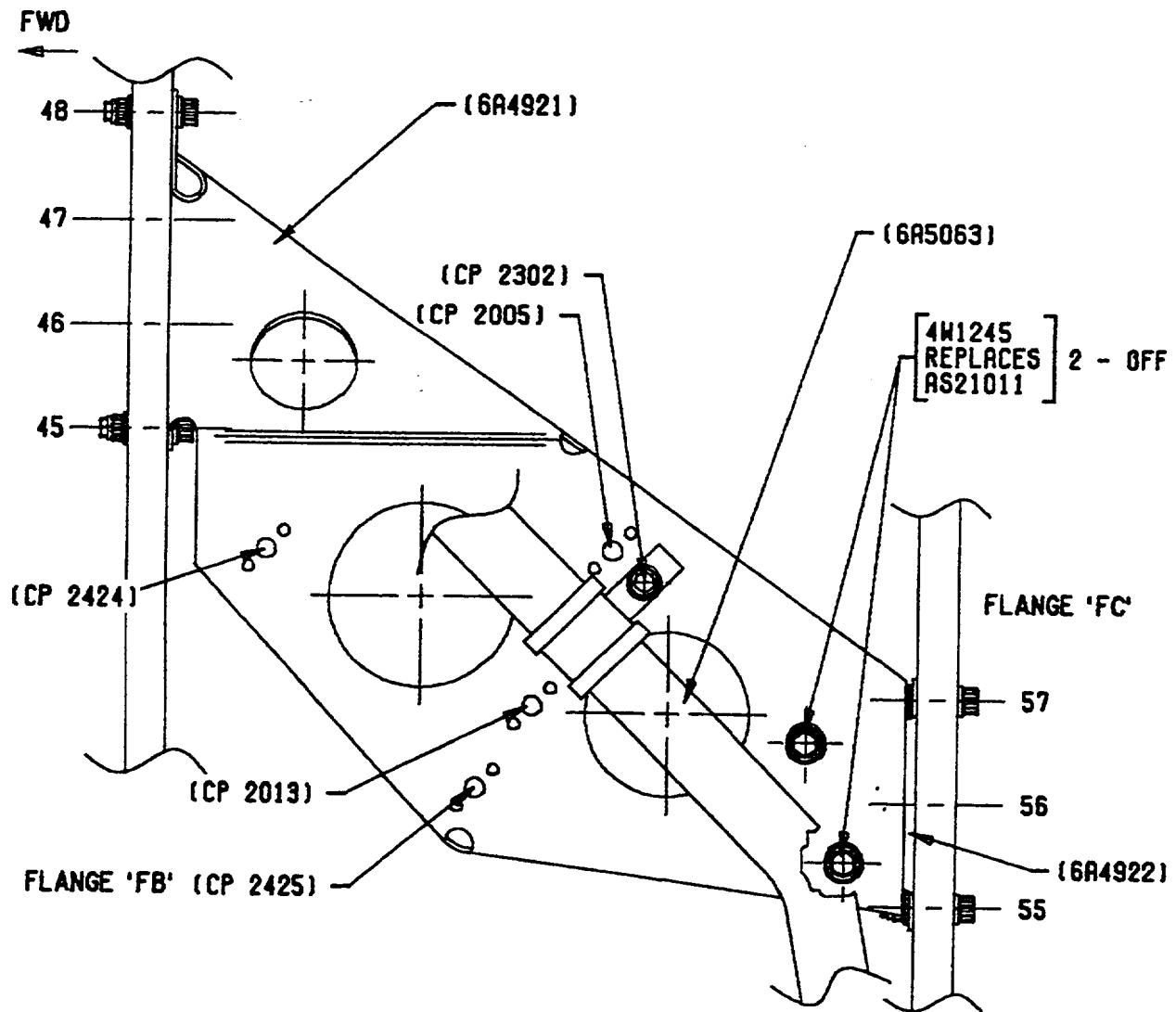
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Location of clipping points 2057, 2060 and 2302  
Fig.1

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View on bracket raft assembly showing location of modified bolts - Before and after alteration  
Fig.2

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## 2. Accomplishment Instructions

### A. Rework Instructions

- (1) There are no rework instructions necessary to accomplish this Service Bulletin.

### B. Assembly Instructions

- (1) Find 6A5063 oil tube. Refer to Figure 1.
- (2) Disconnect the electrical connector from the scavenge oil temperature thermocouple.
- (3) Remove the AS21016 bolts (3 off) that attach the 6A5063 oil tube to the Air Cooled Oil Cooler. Remove the 6A5063 oil tube and retain the AS21016 bolts.
- (4) Cut the lockwire and disconnect the union connecting the 6A5063 oil tube to the 6A6025 oil tube.
- (5) Disassemble clipping point CP2302 from bracket assembly and retain AS20908 bolt.
- (6) Disassemble clipping points CP2057 and CP2060 sufficiently to remove the clipping points from bracket assemblies. Install 4W0001 slave nuts (2 off) at clipping points to retain parts.
- (7) Raise the 6A5063 oil tube sufficiently to allow access to the AS21011 bolts (2 off) which retain the 6A4921 bracket to the 6A4922 bracket. Remove and discard the AS43013-118 sealing ring from the 6A5063 oil tube. Refer to Figures 1 and 2.
- (8) Remove the AS21011 bolts (2 off) and 4W2622 washers (2 off). Retain the washers, discard the bolts. Refer to Figure 2.
- (9) Install the new 4W1245 bolts (2 off) and 4W2622 washers (2 off). Torque the bolts to 85 to 105 lbfin (10 to 12 Nm). Refer to Figure 2.
- (10) Lubricate a new AS43013-118 sealing ring with CoMat 10-077 approved engine oils. Install the sealing ring to the 6A5063 oil tube and using the AS21016 bolts (3 off) removed in step (3) install the 6A5063 oil tube to the Air Cooled Oil Cooler. Torque the bolts to 85 to 105 ibfin (10 to 12 Nm).
- (11) Connect the 6A5063 oil tube union to the 6A6025 oil tube and torque the nut to 478 to 513 ibfin (54 to 58 Nm).
- (12) At existing clipping point CP2302, assemble the clipping point using the AS20908 bolt removed in step (5).

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- (13) At existing clipping points CP2057 and CP2060, remove the 4W0001 nuts (2 off) install to retain parts. Assemble the clipping points using existing parts.
- (14) Torque the clipping points CP2302, CP2057 and CP2060 to 36 to 45 ibfin (4 to 5 Nm).
- (15) Connect the electrical connector to the scavenge oil temperature thermocouple.
- (16) Safety the oil tube union with CoMat 02-126 lockwire.

**C. Recording Instructions**

- (1) A record of accomplishment is necessary.



## SERVICE BULLETIN

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with this Bulletin:

None

B. Parts affected by this Bulletin:

New Part No. (ATA No.)	Qty	Est'd Unit Price (\$)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
4W1245 (73-11-49)	2		Bolt	AS21011 (02-381)	(A)(B)(S1)

C. Instructions/Disposition Code Statements:

- (A) New parts are currently available.  
(B) Old parts can be used up on other locations.  
(S1) New parts may be used in place of old parts, but not vice-versa.

D. Expendable Parts

Part No.	ATA/IPC No.	Qty	Keyword
AS43013-118	79-21-49, 02-096	1	Sealing Ring

E. Consumable Materials

CoMat 02-126                      Lockwire

CoMat 10-077                      Approved engine oils

NOTE: The estimated 1994 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.

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