ENGINE - FUEL AND CONTROL - INTRODUCE A REPOSITIONED FCOC FUEL FLOW RESTRICTOR AND ASSOCIATED FUEL TUBES - CATEGORY CODE 6 - MOD.ENG-73-0078

1. Planning Information

A. Effectivity

(1) Aircraft: (a) Airbus A320
(b) Airbus A321

(2) Engine: (a) V2527-A5 Engines prior to Serial No.V10208
(b) V2530-A5 Engines prior to Serial No.V10208

The serial number data shown is of a preliminary nature is provided for advance planning only. A future revision to this bulletin will confirm final serial number effectivity.

B. Concurrent Requirements

None

C. Reason

(1) Condition

Possible erosion of the Fuel Cooled Oil Cooler (F.C.O.C.) matrix.

(2) Background

Experience with a similar engine type has indicated that under extreme circumstances erosion of the F.C.O.C. matrix may result in oil contamination of the fuel system. In addition the fuel flow restrictor at the inlet to the F.C.O.C. can currently be fitted incorrectly.

Flow visualisation testing of the F.C.O.C. has indicated that matrix erosion is caused by direct impingement of fuel borne foreign objects such as wires and metal chips, due to the close proximity of the fuel flow restrictor.

(3) Objective

To reduce direct impingement of foreign objects on the F.C.O.C. matrix and prevent incorrect assembly of the fuel flow restrictor thereby ensuring correct fuel flow characteristics.

(4) Substantiation

Rig tests have established that the new position of the fuel flow restrictor will alleviate the effects of direct debris impingement on the F.C.O.C. matrix. The addition of spigots on the pipe end connector and the fuel flow restrictor ensures against incorrect fitment.

(5) Effect of Bulletin on Workshop Procedures:

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

(6) Supplemental Information

The Removal/Installation will be revised to add new configuration of this Service Bulletin.

D. Description

The existing L.P. fuel pump to F.C.O.C. fuel inlet tube assembly is replaced by two tube assemblies. The first tube runs from the L.P. fuel pump to the connector for the return to tank valve tube and the second tube runs from this connector to the F.C.O.C. fuel inlet. The fuel flow restrictor has been redesigned to prevent incorrect assembly and its location changed from the F.C.O.C. inlet end of the existing tube to the return to tank valve tube connector end of the new F.C.O.C. fuel inlet tube.

One of the existing A.C.O.C. to F.C.O.C. oil tubes has also been rerun to accommodate the new fuel tubes.

Clipping points 0304 and 0319 have had spacers added to suit the new tube arrangement.

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 subassembly (ie. Modules, Accessories, Components, Build Groups) is disassembled sufficiently to afford access to the affected part 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.

I. Tooling - Price and Availability

Special tools are not required.

J. Weight and Balance

(1)	Weight change	Plus 1.0lb (0,45kg)
(2)	Moment arm	13.0in (330mm) rearward of datum
(3)	Datum	Engine front mount centerline (Power Plant Station (PPS)100)

K. Electrical Load Data

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

L. References

(1) Internal Reference No.

EC94VR010

M. Other Publications Affected

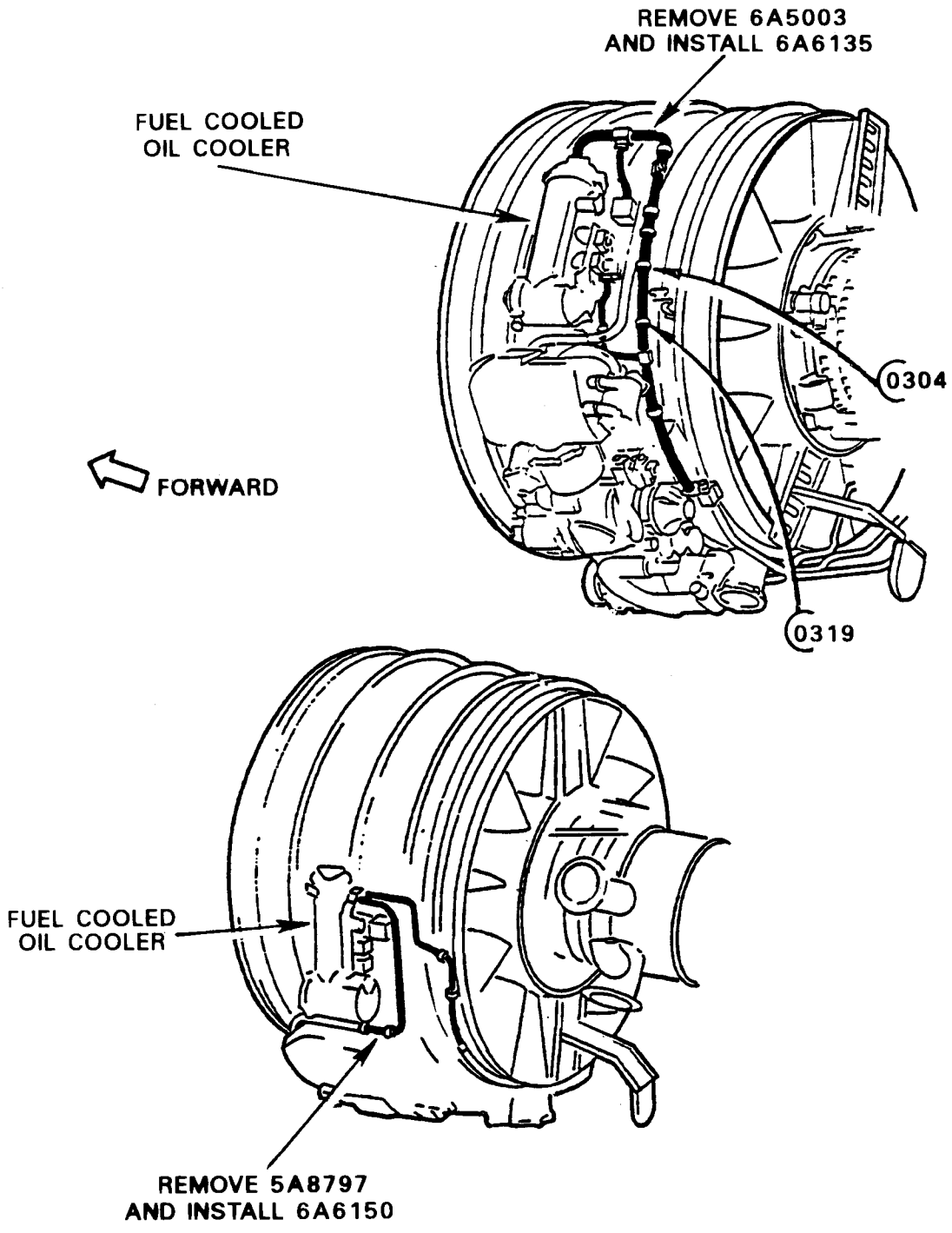
(1) V2500 Illustrated Parts Catalog (S-V2500-2IA), Chapter/Section, 73-11-49 and 79-21-49.

(2) V2500 Engine Manual (E-V2500-1IA), 72-00-32, Removal-03 CONFIG-2, Installation-03 CONFIG-2, Removal-29 and Installation-29.

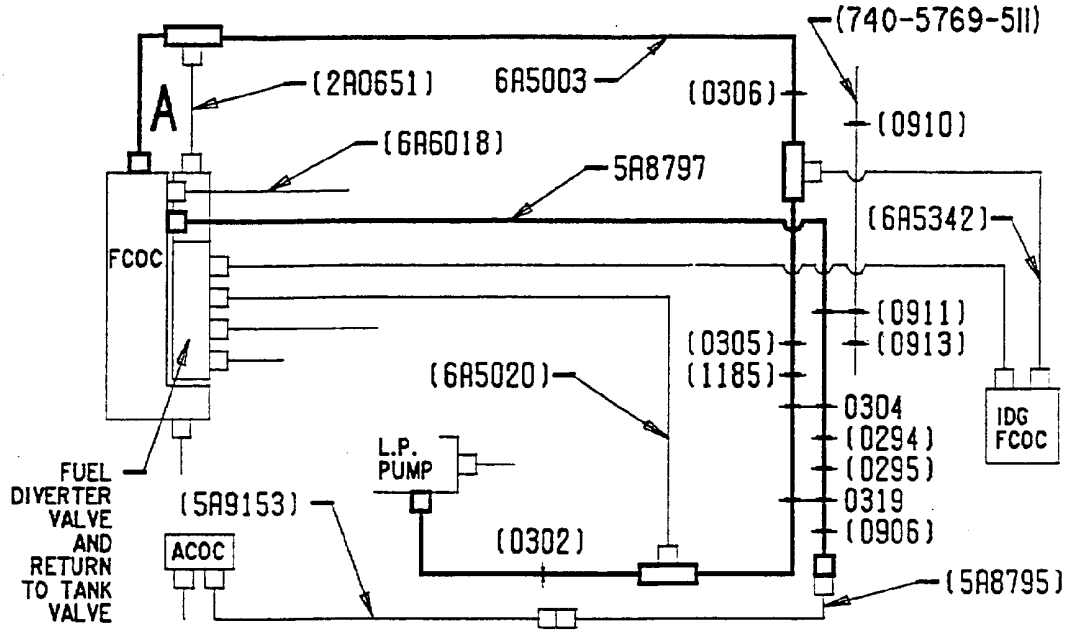
(3) V2500 Component Maintenance Manual (CMM-THD-V2500-1IA), 73-11-49, Cleaning-00, -03 and -05, Inspection/Check-00, -01 and -04. 79-21-49, Cleaning-00 and -02, Inspection/Check-00 and -01.

(4) V2500 Engine Maintenance Manual (M-V2500-1IA), 79-21-43, Removal/Installation.

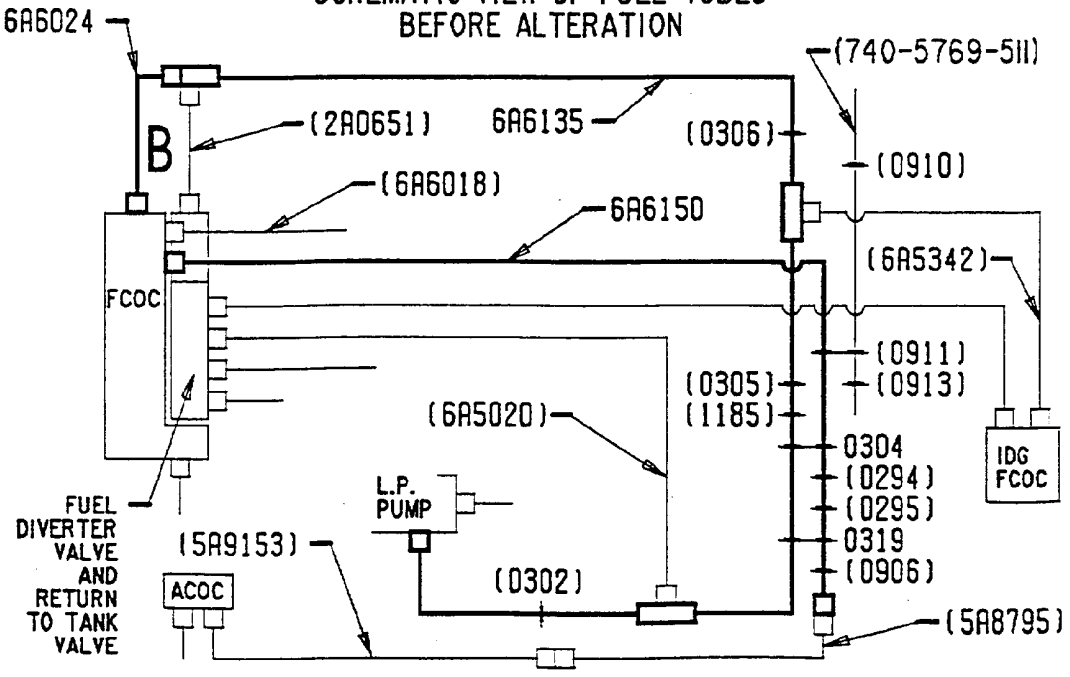
Printed in Great Britain



Location of tubes
Fig.1

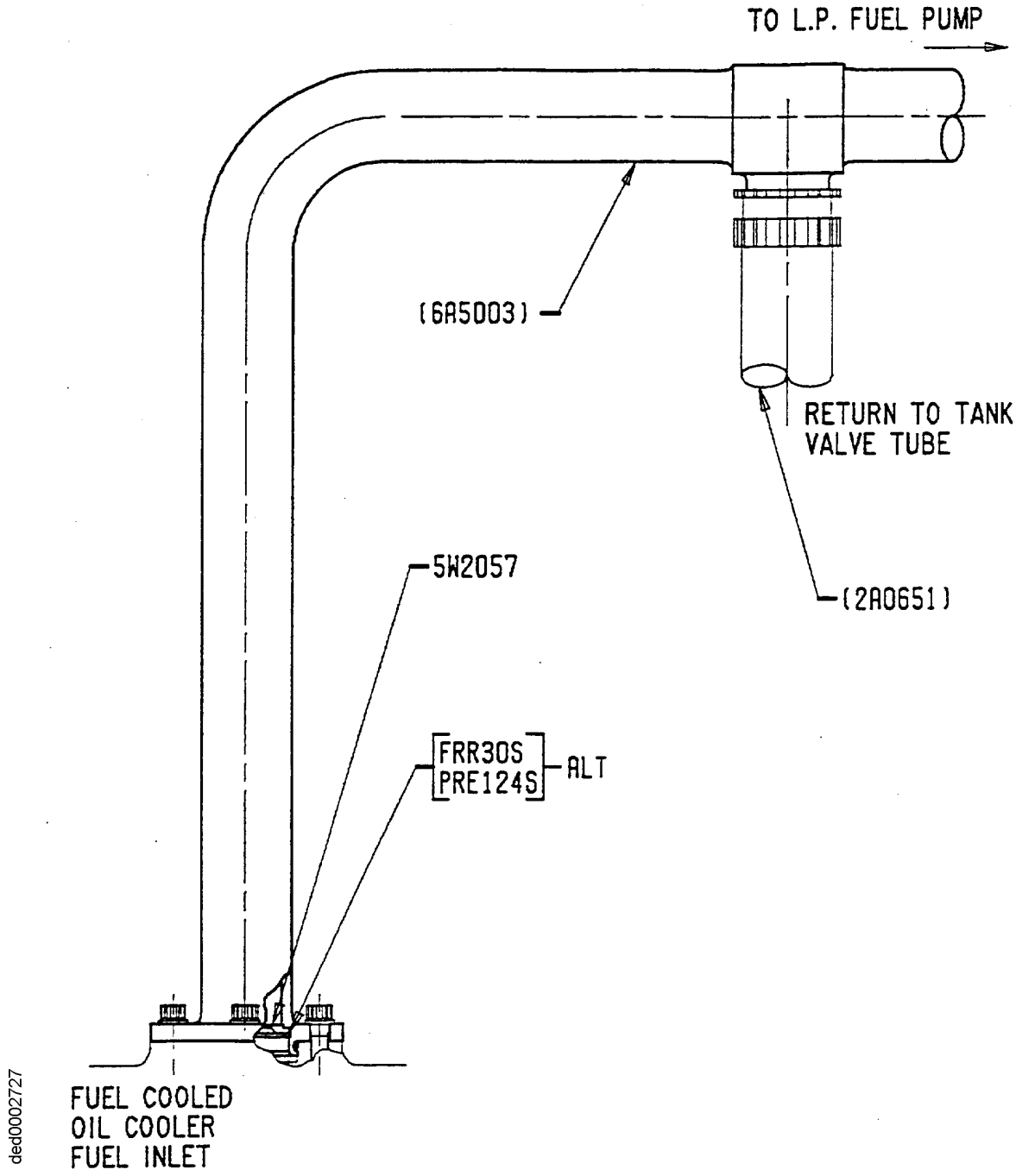


SCHEMATIC VIEW OF FUEL TUBES BEFORE ALTERATION

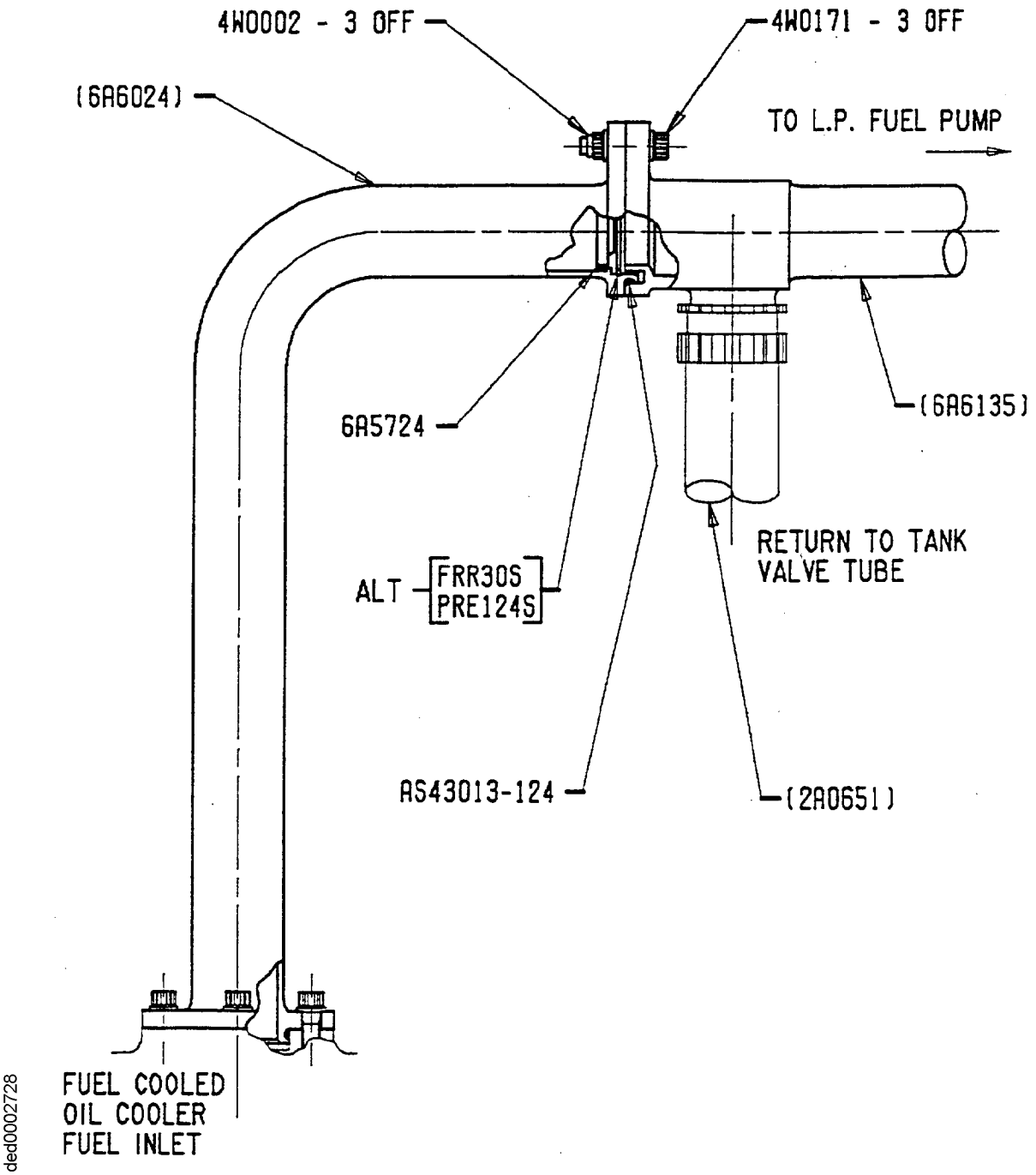


ded0002726

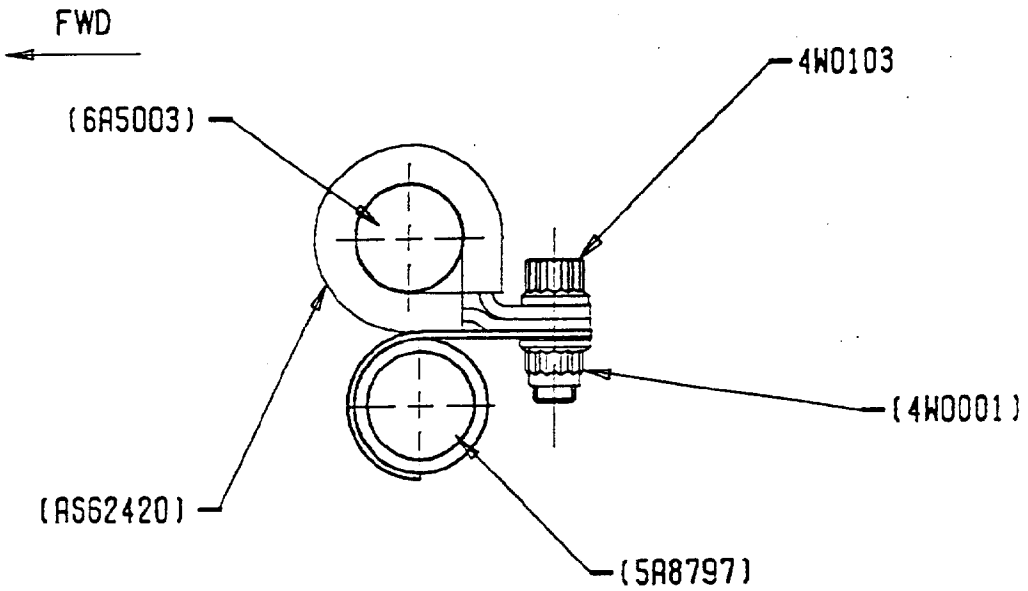
Schematic view of fuel tubes - Before and after alteration
Fig.2



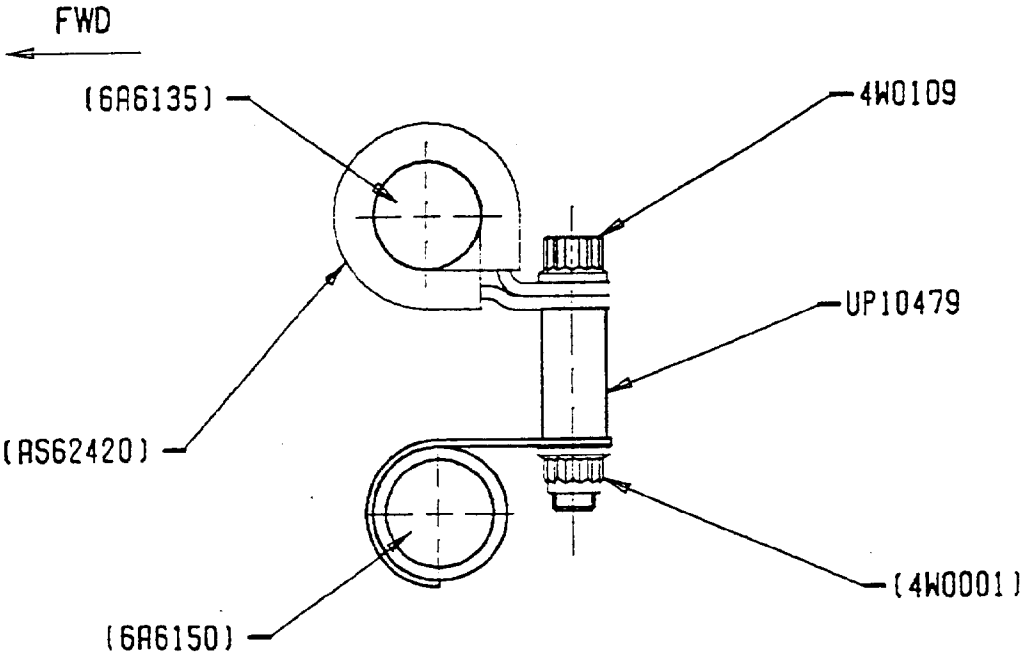
View at A on Figure 2 - Before alteration
Fig.3



View at B on Figure 2 - After alteration
Fig.4

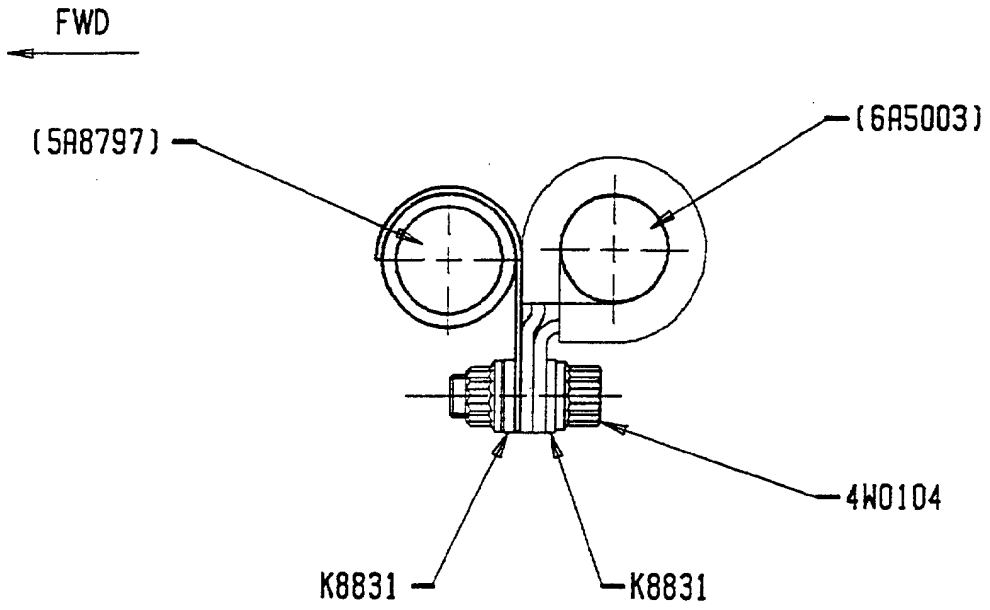


CLIPPING POINT 0304
BEFORE ALTERATION

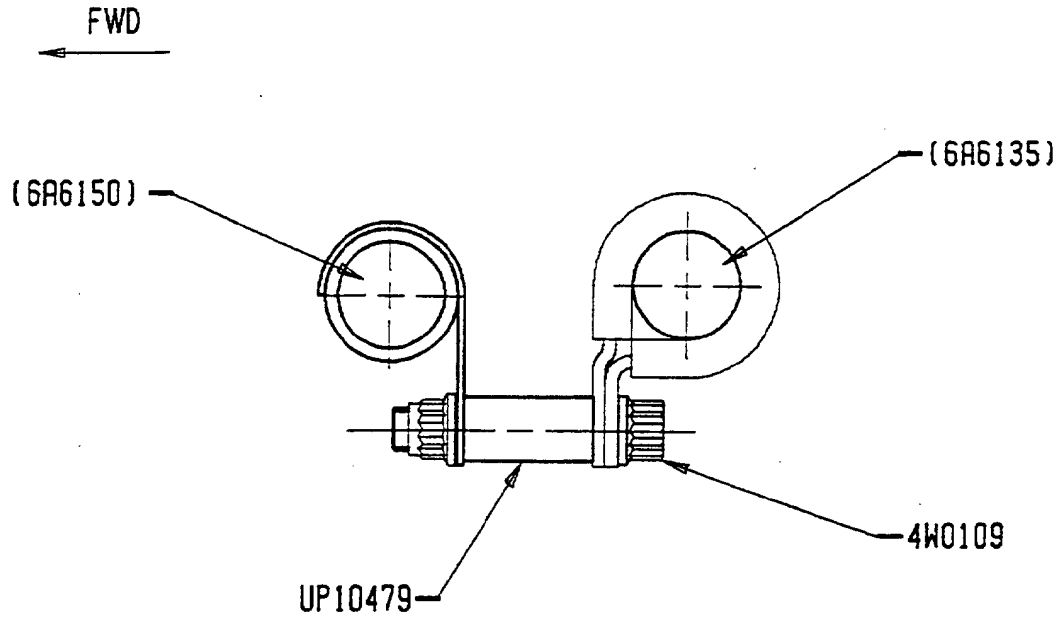


ded0002729

Clipping point 0304 - Before and after alteration
Fig.5



CLIPPING POINT 0319
BEFORE ALTERATION



ded0002730

Clipping point 0319 - Before and after alteration
Fig.6

2. Accomplishment Instructions

A. Rework Instructions

There are no rework instructions necessary to accomplish this Service Bulletin.

B. Assembly Instructions

(1) To disassemble the existing assembly refer to Engine Manual.

(2) Install a new AS43013-124 sealing ring, lubricated with CoMat 10-038 Petroleum Jelly or CoMat 10-060 Liquid Paraffin on to the new 6A6135 fuel tube. Install the 6A6135 fuel tube on to the LP fuel pump using the existing bolts. Torque the bolts to 85 to 105 lbfin (10 to 12 Nm). Refer to Figure 2.

(3) Connect the 2A0651, 6A5020 and 6A5342 fuel tubes to the 6A6135 fuel tube. Torque the 2A0651 and 6A5342 tube union nuts to 566 to 611 lbfin (64 to 69 Nm). Torque the 6A5020 tube union nut to 159 to 177 lbfin (18 to 20 Nm). Safety the tube union nuts with CoMat 02-126 lockwire. Refer to Figure 2.

(4) Install the new 6A5724 restrictor, FRS30S or PRE124S retainer and two new AS43013-124 sealing rings lubricated with CoMat 10-038 Petroleum Jelly or CoMat 10-060 Liquid Paraffin on to the new 6A6024 fuel tube. Connect the 6A6024 fuel tube to the 6A6135 fuel tube using the 4W0171 bolts (3 off) and 4W0002 nuts (3 off). Install the 6A6024 fuel tube on to the F.C.O.C. using the existing bolts. Torque these and the 4W0171 bolts to 85 to 105 lbfin (10 to 12 Nm). Refer to Figures 2 and 4.

(5) Install a new AS43013-118 sealing ring lubricated with CoMat 10-039 lubricant (engine oil) on to the new 6A6150 oil tube. Install the 6A6150 oil tube on to the F.C.O.C. Torque the bolts to 85 to 105 lbfin (10 to 12 Nm). Refer to Figure 2.

(6) Connect the 6A6150 oil tube to the 5A8795 oil tube. Torque the tube union nut to 478 to 513 lbfin (54 to 58 Nm). Safety the union nut with CoMat 02-126 lockwire. Refer to Figure 2.

(7) Assemble clipping points 0302, 0906, 0295, 0294, 1185, 0305, 0911 and 0306 on to the new 6A6135 and 6A6150 tubes, using the existing material. Torque the bolt at each clipping point to 36 to 45 lbfin (4 to 5 Nm). Refer to Figure 2.

(8) Assemble clipping point 0304 on to the new 6A6135 and 6A6150 tubes, incorporating the new UP10479 spacer, the 4W0109 bolt and the remaining existing material. Torque the bolt to 36 to 45 lbfin (4 to 5 Nm). Refer to Figures 2 and 5.

(9) Assemble clipping point 0319 on to the new 6A6135 and 6A6150 tubes, incorporating the new UP10479 spacer, the 4W0109 bolt and the remaining existing material except for the two K8831 washers. Refer to Figures 2 and 6.

C. Recording Instructions

(1) A record of accomplishment is necessary.

3. Material Information

Applicability: For each V2527-A5 or V2530-A5 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
- (73-11-49)	1		Ring, Retainer Restrictor	FRR30S (02-088)	(E)(G)(S1)
- (73-11-49)	Ref		Ring, Retainer Restrictor	PRE124S (02-088)	(E)(G)(S1)
- (73-11-49)	1		Restrictor	5W2057 (02-090)	(B)(S1)
6A6135 (73-11-49)	1	1795	Tube, L.P. Fuel - L.P. pump to disconnect - assy of	6A5003 (02-100)	(A)(B)(S1)
- (73-11-49)	3		Bolt	4W0166 (02-106)	(2D)(H)(S1)
- (73-11-49)	1		Ring, Sealing Toroidal	AS43013-124 (02-108)	(3D)(J)(S1)
4W0109 (73-11-49)	1	4.20	Bolt CP0319	4W0104 (02-133)	(A)(1D)(S1)
- (73-11-49)	2		Washer CP0319	K8831 (02-134)	(1D)(S1)
UP10479 (73-11-49)	1	10.40	Spacer CP0319	- (02-138)	(A)(C)(S1)
4W0109 (73-11-49)	1	4.20	Bolt CP0304	4W0103 (02-141)	(A)(1D)(S1)
UP10479 (73-11-49)	1	10.40	Spacer CP0304	- (02-145)	(A)(C)(S1)

6A5724 (73-11-49)	1	38.90	Restrictor	- (02-288)	(A)(S1)
FRR30S (73-11-49)	1	3.44	Ring, Retaining Restrictor	- (02-290)	(F)(K)(S1)
PRE124S (73-11-49)	Ref		Ring Retaining Restrictor	- (02-290)	(F)(K)(S1)
6A6024 (73-11-49)	1	664	Tube, L.P. Fuel - disconnect to F.C.O.C. - assy of	- (02-300)	(A)(C)(S1)
4W0171 (73-11-49)	3	8.46	Bolt	- (02-305)	(A)(C)(S1)
4W0002 (73-11-49)	3	8.42	Nut	- (02-306)	(A)(C)(S1)
AS43013- 124 (73-11-49)	1	2.08	Ring, Sealing Toroidal	- (02-308)	(L)(S1)
AS43013- 124 (73-11-49)	1	2.08	Ring, Sealing Toroidal	- (02-314)	(A)(C)(S1)
4W0166 (73-11-49)	3	4.96	Bolt	- (02-316)	(M)(S1)
6A6150 (79-21-49)	1	512	Tube, Oil - disconnect to F.C.O.C.	5A8797 (03-100)	(A)(B)(S1)

C. Instructions/Disposition Code Statements:

(A) New part is currently available

(B) Old part will be discontinued

(C) Additional part

(1D) Old part can be used up in other applications

(2D) Quantity decreased from 6 to 3

(3D) Quantity decreased from 2 to 1

(E) Alternative parts

(F) Alternative parts

(G) Re-itemised (02-290)

(H) 3 off re-itemised (02-316)

(J) 1 off re-itemised (02-308)

(K) Was item (02-088)

(L) Was item (02-108)

(M) Was item (02-106)

(S1) New parts to replace old parts as a set

D. Expendable Parts

Part No.	ATA/IPC No.	Qty	Keyword
AS43013-118	79-21-49, 03-098	1	Sealing Ring

E. Consumable Materials

CoMat 02-126 Lockwire
CoMat 10-039 Lubricant (engine oil)
CoMat 10-038 Petroleum Jelly
or
CoMat 10-060 Liquid Paraffin

NOTE: The estimated 1996 unit prices 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.