



SERVICE BULLETIN

ENGINE - FUEL AND CONTROL - REPLACE THE FUEL NOZZLE SUPPLY MANIFOLD ASSEMBLIES (FOR THE V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5 AND V2533-A5 ONLY) AND REMOVE THE GASKET OPTION AND CHANGE THE INSTALLATION PROCEDURE (FOR ALL MODELS) - CATEGORY CODE 6 - MOD.ENG-73-0088

1. Planning InformationA. Effectivity

(1) Aircraft: Airbus A320, A321

McDonnell Douglas MD-90

(2) Engine: V2500-A1 Engines before Serial No. V0362
V2522-A5 Engines before Serial No. V10248
V2524-A5 Engines before Serial No. V10248
V2527-A5 Engines before Serial No. V10248
V2530-A5 Engines before Serial No. V10248
V2533-A5 Engines before Serial No. V10248
V2525-D5 Engines before Serial No. V20137
V2528-D5 Engines before Serial No. V20137

NOTE: This procedure will be done at the same time as or subsequent to the inspection procedure given in V2500-ENG-73-0089.

B. Reason

(1) Condition

Operators are discovering some evidence of cracked Fuel Nozzle Manifold Assemblies.

(2) Background

The installation strain/stresses can be too high.

(3) Objective

Change the assembly procedure to ease installation and reduce installation strain/stress. This is done by removing of the flared tube fitting gaskets, replacing the old lubricant CoMat 10-041 (petrolatum) with a new lubricant CoMat 10-121 (PWA 36511), maintaining the specified torque limits and adding dry film lubricant to the tube ferrules.

(4) Substantiation

650 cycles, which included 325 hours of endurance testing, were successfully completed on a suitable test engine. 150 hours of endurance testing were completed on a suitable test engine at 33K levels.

V2500-ENG-73-0088



SERVICE BULLETIN

(5) Effects of Bulletin on Workshop Procedures:

Removal/Installation	Not affected
Disassembly/Assembly	Affected (See Supplemental Information)
Cleaning	Not affected
Inspection/Check	Not affected
Repair	Not affected
Testing	Not affected

(6) Supplemental Information

The assembly of the Post-Service Bulletin configuration requires instructions for installation of the Fuel Nozzle Manifold Assemblies without the Flared Tube Fitting Gaskets, use of new lubricants and additional lubricant locations.

C. Description

- (1) A new Fuel Nozzle Manifold Assembly configuration is provided. This configuration includes the changes that follow.
 - (a) New Fuel Nozzle Supply Manifold Assemblies are provided for the V2500-A1, V2522-A5, V2524-A5 V2527-A5 V2530-A5 and V2533-A5 models.
 - (b) Flared Tube Fitting Gaskets are removed and will not be used with the new configuration.
 - (c) The old lubricant CoMat 10-041 (petrolatum) is removed from the Flared Tube Fitting locations and a new lubricant CoMat 10-121 is added at those locations.
 - (d) Antigalling compound is added to some surfaces of the Fuel Nozzle Supply Manifolds, as applicable.

D. 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.

The 'compliance' statement and the procedures described in paragraph F of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-Approved for the Engine Model listed.

E. Compliance

Category 6

V2500-ENG-73-0088



SERVICE BULLETIN

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

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
-------	--------------------

(1) In service	Not applicable
----------------	----------------

(2) At overhaul	none
-----------------	------

NOTE: The parts affected by this Service Bulletin are accessible at overhaul.

G. Material – Price and Availability

(1) Modification kit is not required. Parts are supplied as single line items.

(2) See "Material Information" section for prices and availability of future spares.

H. Tooling – Price and Availability

Special tools are not required to accomplish this Service Bulletin.

I. Weight and Balance

(1) Weight change	None
-------------------	------

(2) Moment arm	No effect
----------------	-----------

(3) Datum	Engine Front mount Centerline (Power Plant station (PPS) 100)
-----------	--

J. Electrical Load Data

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

K. References

(1) Internal Reference No.

95VA041

95VA041B

V2500–ENG–73–0088



(2) Other References

V2500 Standard Practices Manual (SPP-V2500-1I-A), 70-09-00, Marking of Parts

V2500-A1 Engine Illustrated Parts Catalog (S-V2500-1IA), Chapter/Section 73-11-41

V2500-A5 Engine Illustrated Parts Catalog (S-V2500-2IA), Chapter/Section 73-11-41

V2500-D5 Engine Illustrated Parts Catalog (S-V2500-3IA), Chapter/Section 73-11-41

V2500 Engine Manual (E-V2500-1I-A), 72-42-00, Assembly.

V2500 Engine Manual (E-V2500-3I-A), 72-42-00, Assembly.

L. Other Publications Affected

- (1) V2500-A1 Engine Illustrated Parts Catalog (S-V2500-1IA), Chapter/Section 73-11-41, to add the new parts.
- (2) V2500-A5 Engine Illustrated Parts Catalog (S-V2500-2IA), Chapter/Section 73-11-41, to add the new parts.
- (3) V2500-D5 Engine Illustrated parts Catalog (S-V2500-3IA), Chapter/Section 73-11-41, to add the new parts.
- (4) V2500 Engine Manual (E-V2500-1I-A), 72-42-00, Assembly, to add the new procedure.
- (5) V2500 Engine Manual (E-V2500-3I-A), 72-42-00, Assembly to add the new procedure.

V2500-ENG-73-0088



2. Accomplishment Instructions

For V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5 and V2533-A5 Engines

A. Modification Procedure

NOTE: This procedure will be done at the same time as or subsequent to the inspection procedure given in V2500-ENG-73-0089.

- (1) Do an modification of the 2A0504-01, 2A0508-01, 2A0509-01, 2A0510-01, 2A0511-01, 2A0516-01, 2A0515-01, 2A1229-01, 2A0513-01 and 2A1389-01 Fuel Nozzle Supply Manifold Assemblies (See Reference (2), Chapter/Section 73-11-41, Figure/Item Nos. 01-060, 01-160, 01-260, 02-060, 02-160, 02-0260, 03-060, 03-160, 03-260, 03-360).

Procedure

Supplementary Information

- (a) Apply CoMat 06-078 anti-galling compound in the areas shown by the procedure specified. See Reference (1), Control No./Task No. 70-38-27-380-501. See Figure 1 for applicable locations.

Procedure

Supplementary Information

- | (b) Mark the new part number adjacent to the existing part number. Use the vibration peen method. | Existing | New Part Number |
|---|-----------|-----------------|
| | 2A0504-01 | 2A3229-01 |
| | 2A0508-01 | 2A3230-01 |
| | 2A0509-01 | 2A3231-01 |
| | 2A0510-01 | 2A3232-01 |
| | 2A0511-01 | 2A3233-01 |
| | 2A0516-01 | 2A3236-01 |
| | 2A0515-01 | 2A3235-01 |
| | 2A1229-01 | 2A3237-01 |
| | 2A0513-01 | 2A3234-01 |
| | 2A1389-01 | 2A3238-01 |

Refer to Reference (1), Control No./Task No. 70-09-00-400-501.

B. Assembly Procedure

- (1) Install the new part number Fuel Nozzle Supply Manifold Assemblies by the procedure given in Reference (5), Chapter/Section 72-42-00, Assembly, except as follows:
- (a) Do not install the ST2229-08 Gasket Option (20 off) again at the locations specified in Figures 1 through 3. These parts will not be used with the new configuration.

V2500-ENG-73-0088



- (b) Do not install the ST2229-07 Gasket Option (10 off) again at the locations specified in Figures 1 through 3. These parts will not be used with the new configuration.
- (c) Use CoMat 10-121 as a lubricant on the Transfer Tube Packings at the locations specified in Figure 2. See Reference (1), Control No./Task No. 70-64-02-640-501.

NOTE: CoMat 10-121 replaces CoMat 10-041 at the locations specified. CoMat 10-041 is not used for the new configuration.

CAUTION: USE OF TORQUE IN EXCESS OF THE LIMIT SPECIFIED CAN CAUSE DAMAGE TO THE FUEL NOZZLE MANIFOLD ASSEMBLIES.

- (a) Do not use more torque than is specified in the assembly procedure given.

For V2525-D5 and V2528-D5 Engines

A. Assembly Procedure

NOTE: This procedure will be done at the same time as or subsequent to the inspection procedure given in V2500-ENG-73-0089.

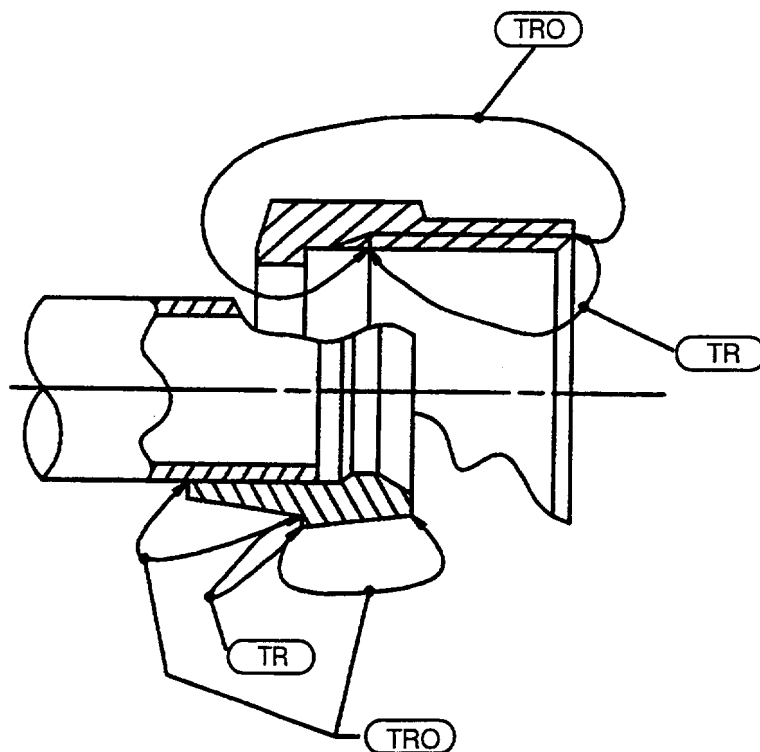
- (1) Install the Fuel Nozzle Supply Manifold Assemblies by the procedure given in Reference (6), Chapter/Section 72-42-00, Assembly, except as follows:
 - (a) Do not install the ST2229-08 Gasket Option (20 off) again at the locations specified in Figures 1 through 3. These parts will not be used with the new configuration.
 - (b) Do not install the ST2229-07 Gasket Option (10 off) again at the locations specified in Figures 1 through 3. These parts will not be used with the new configuration.
 - (c) Use CoMat 10-121 as a lubricant on the Transfer Tube Packings at the locations specified in Figure 8. See Reference (1), Control No./Task No. 70-64-02-640-501.

NOTE: CoMat 10-121 replaces CoMat 10-041 at the locations specified. CoMat 10-041 is not used in the new configuration.

CAUTION: USE OF TORQUE IN EXCESS OF THE LIMIT SPECIFIED CAN CAUSE DAMAGE TO THE FUEL NOZZLE MANIFOLD ASSEMBLIES.

- (d) Do not use more torque than is specified in the assembly procedure given.

V2500-ENG-73-0088



TREAT ENCLOSED AREA PER TEXT



TREATMENT OPTIONAL AND CAN BE INCOMPLETE

SECTION THROUGH FUEL NOZZLE SUPPLY
MANIFOLD ASSEMBLY

E7764

Modification of the Fuel Nozzle Supply Manifold (V2500-A1, V2522-A5 V2524-A5 V2527-A5,
V2530-A5 And V2533-A5)

Fig.1

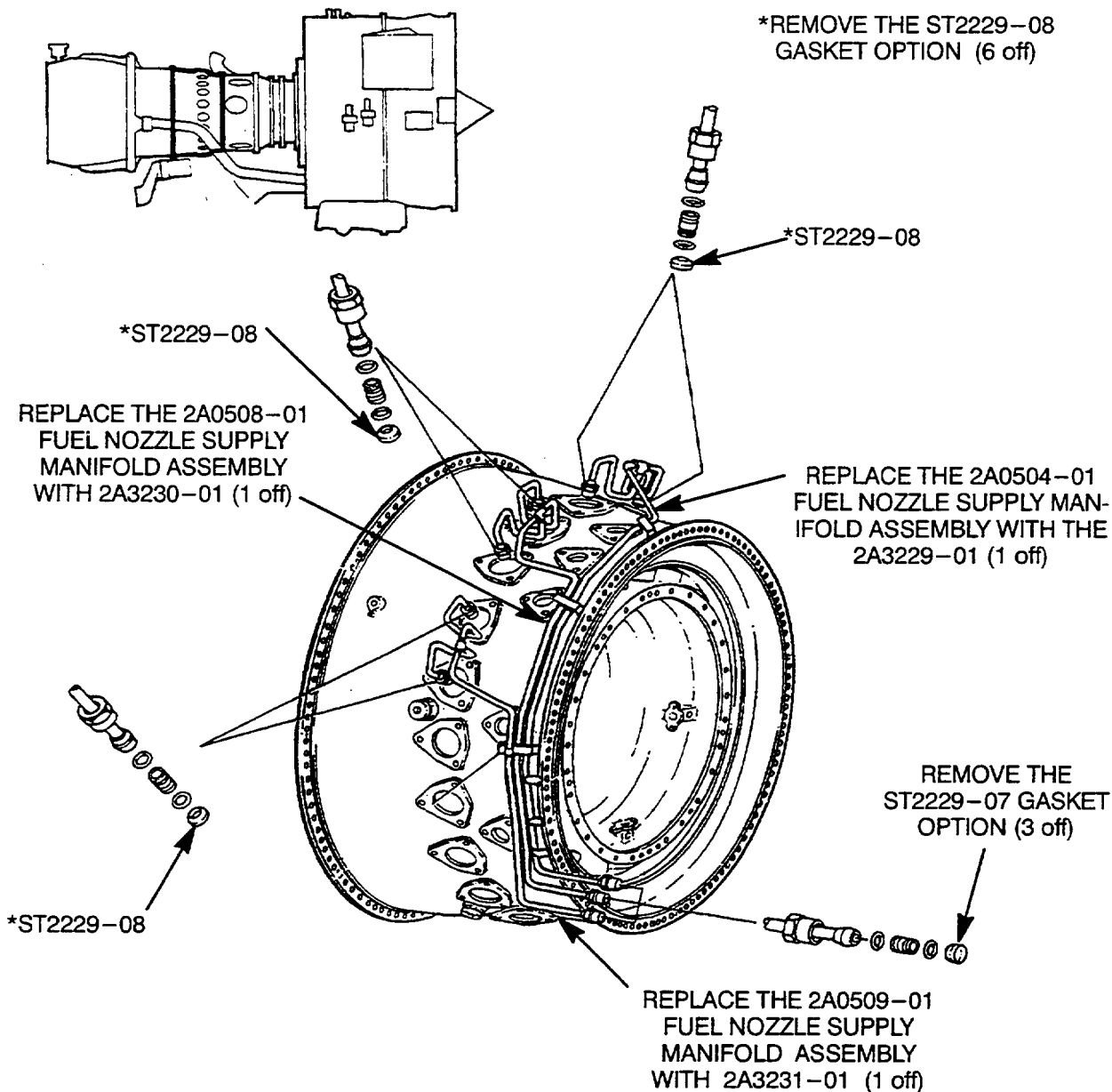
V2500-ENG-73-0088

Mar.5/97

Page 7



SERVICE BULLETIN



E7746

Location of the Fuel Nozzle Supply Manifold (V2500-A1, V2522-A5 V2524-A5 V2527-A5, V2530-A5 And V2533-A5)

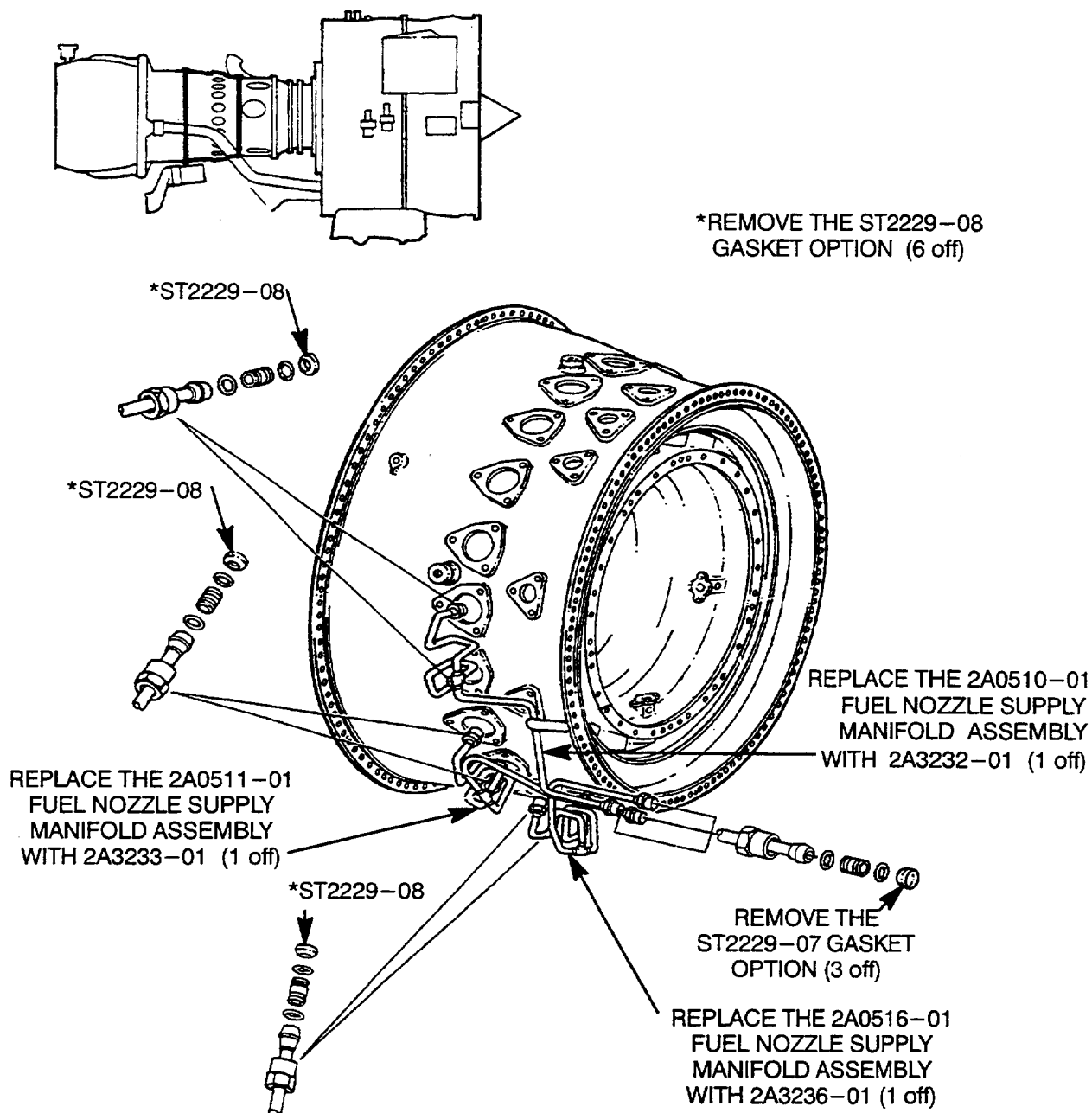
Fig.2

V2500-ENG-73-0088



SERVICE BULLETIN

Printed in Great Britain



E7747

Location of the Fuel Nozzle Supply Manifold (V2500-A1, V2522-A5 V2524-A5 V2527-A5, V2530-A5 And V2533-A5)

Fig.3

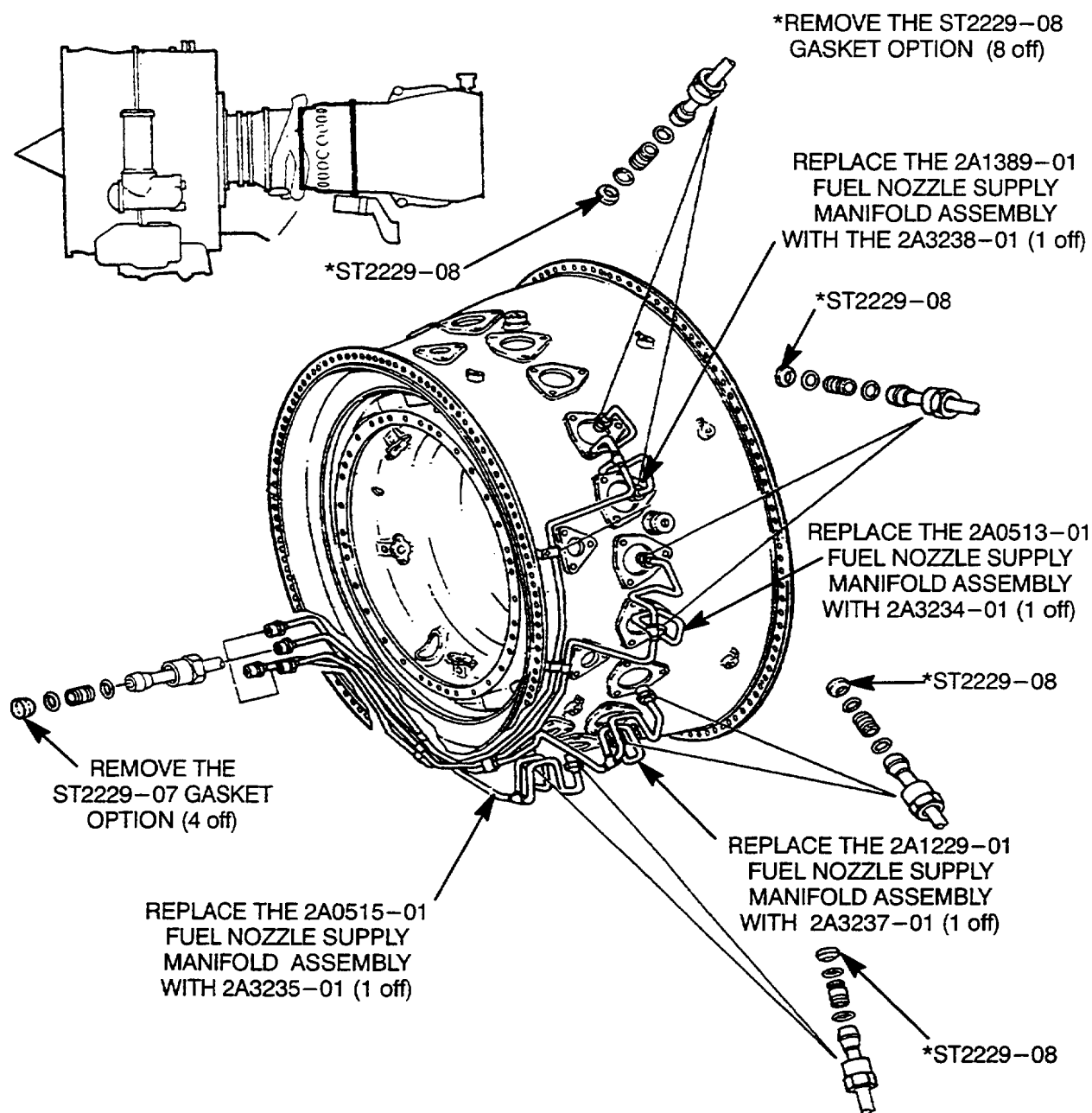
V2500-ENG-73-0088

Mar.5/97

Page 9



SERVICE BULLETIN

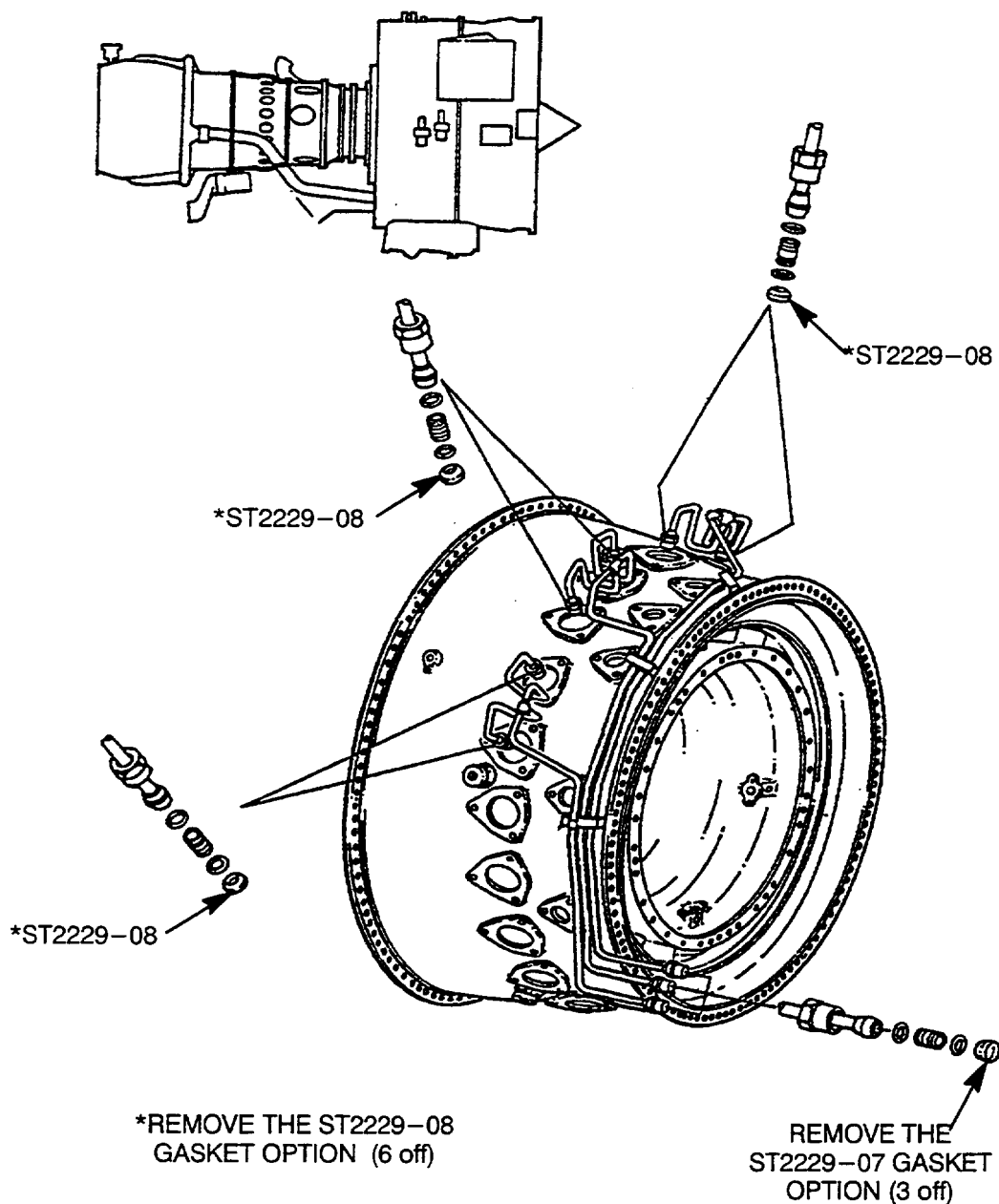


E7748

Location of the Fuel Nozzle Supply Manifold (V2500-A1, V2522-A5 V2524-A5 V2527-A5, V2530-A5 And V2533-A5)

Fig.4

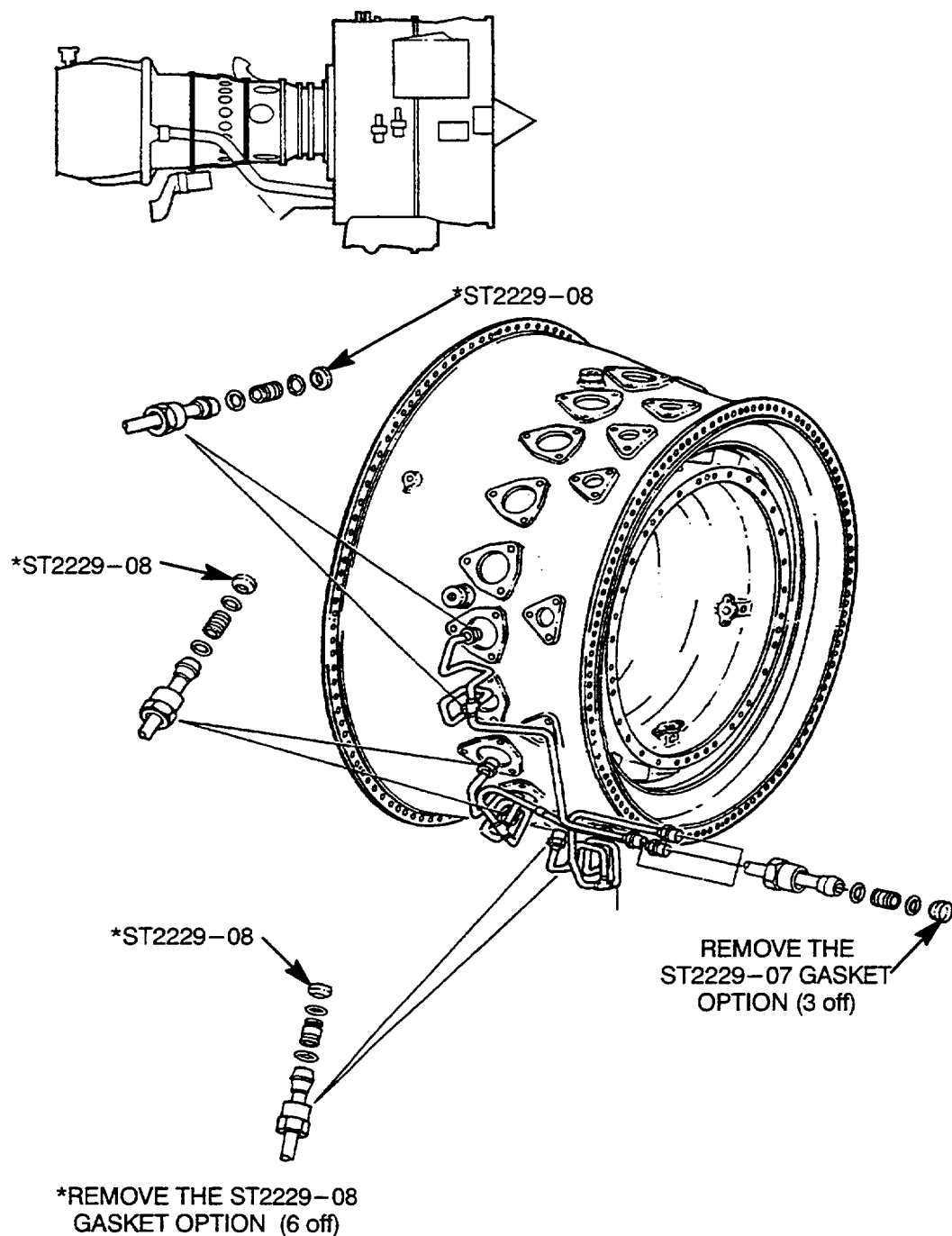
V2500-ENG-73-0088



E7749

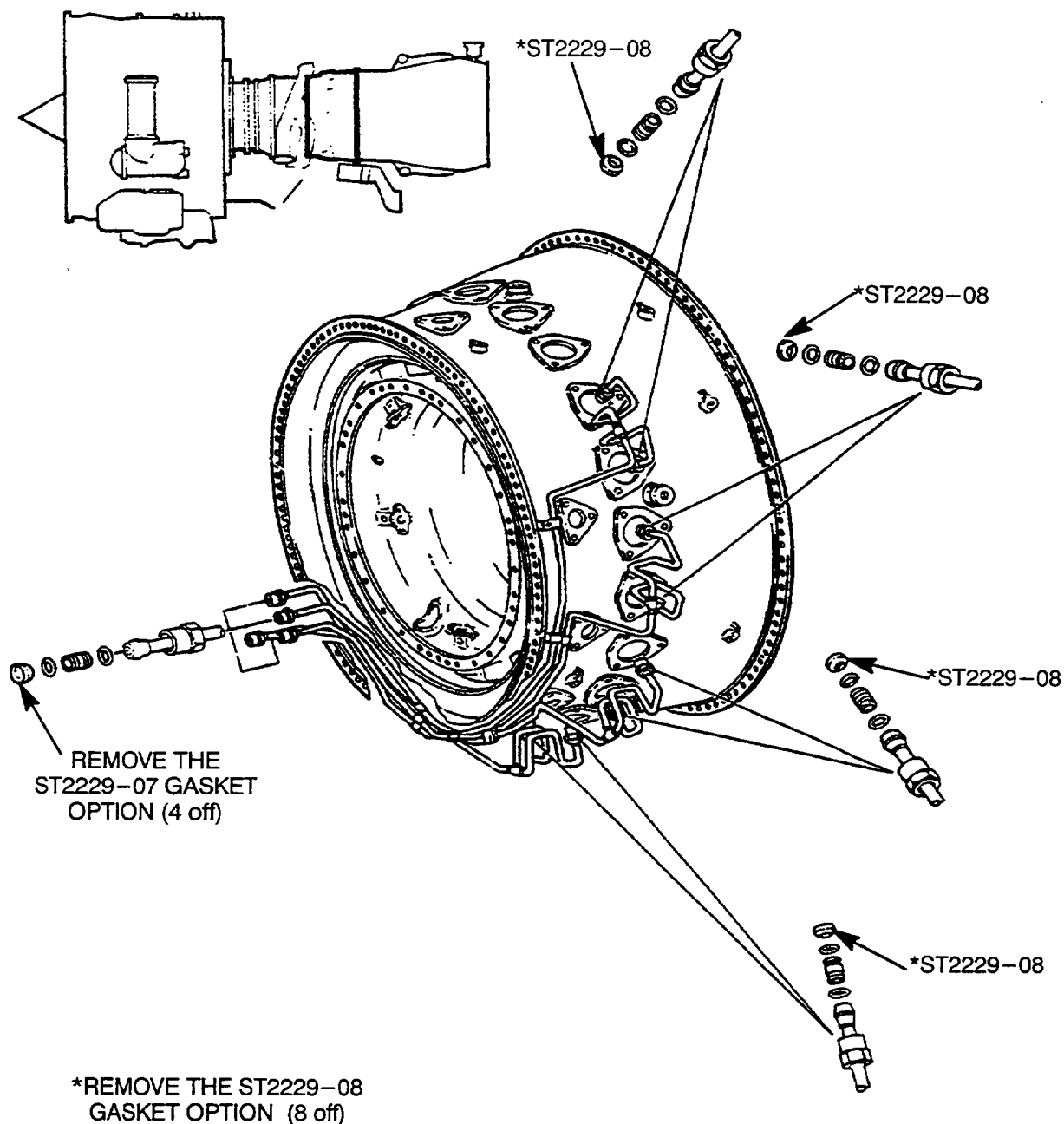
Location of the Fuel Nozzle Supply Manifold (V2525-D5 And V2528-D5)
Fig.5

V2500-ENG-73-0088



Location of the Fuel Nozzle Supply Manifold (V2525-D5 And V2528-D5)
Fig.6

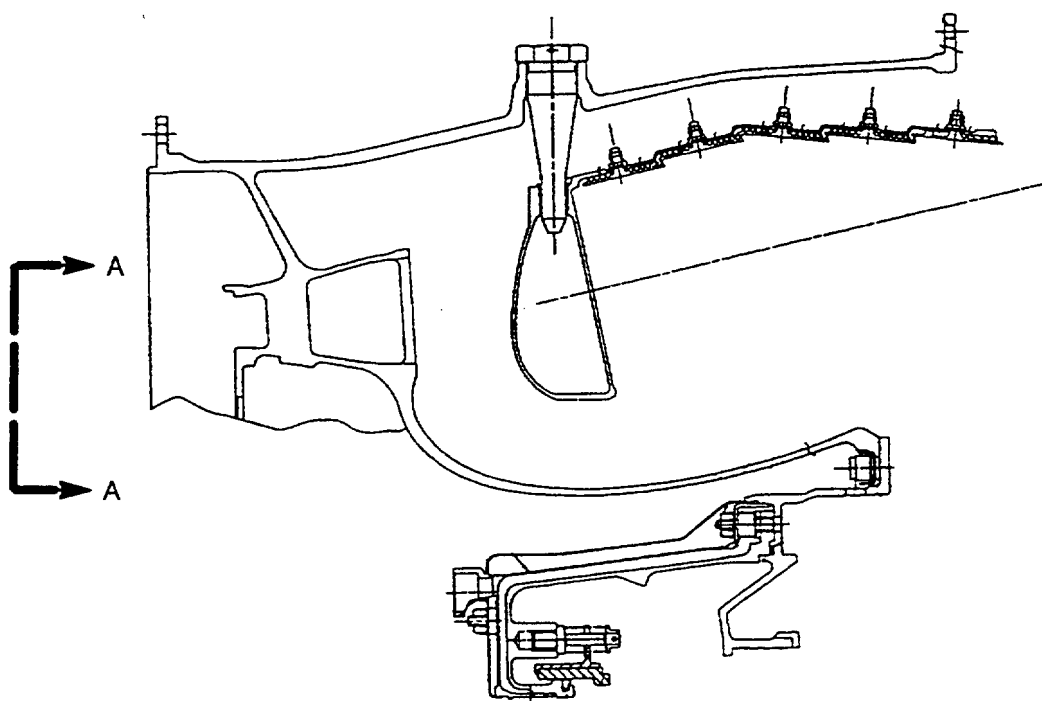
V2500-ENG-73-0088



E7751

Location of the Fuel Nozzle Supply Manifold (V2525-D5 And V2528-D5)
Fig.7

V2500-ENG-73-0088

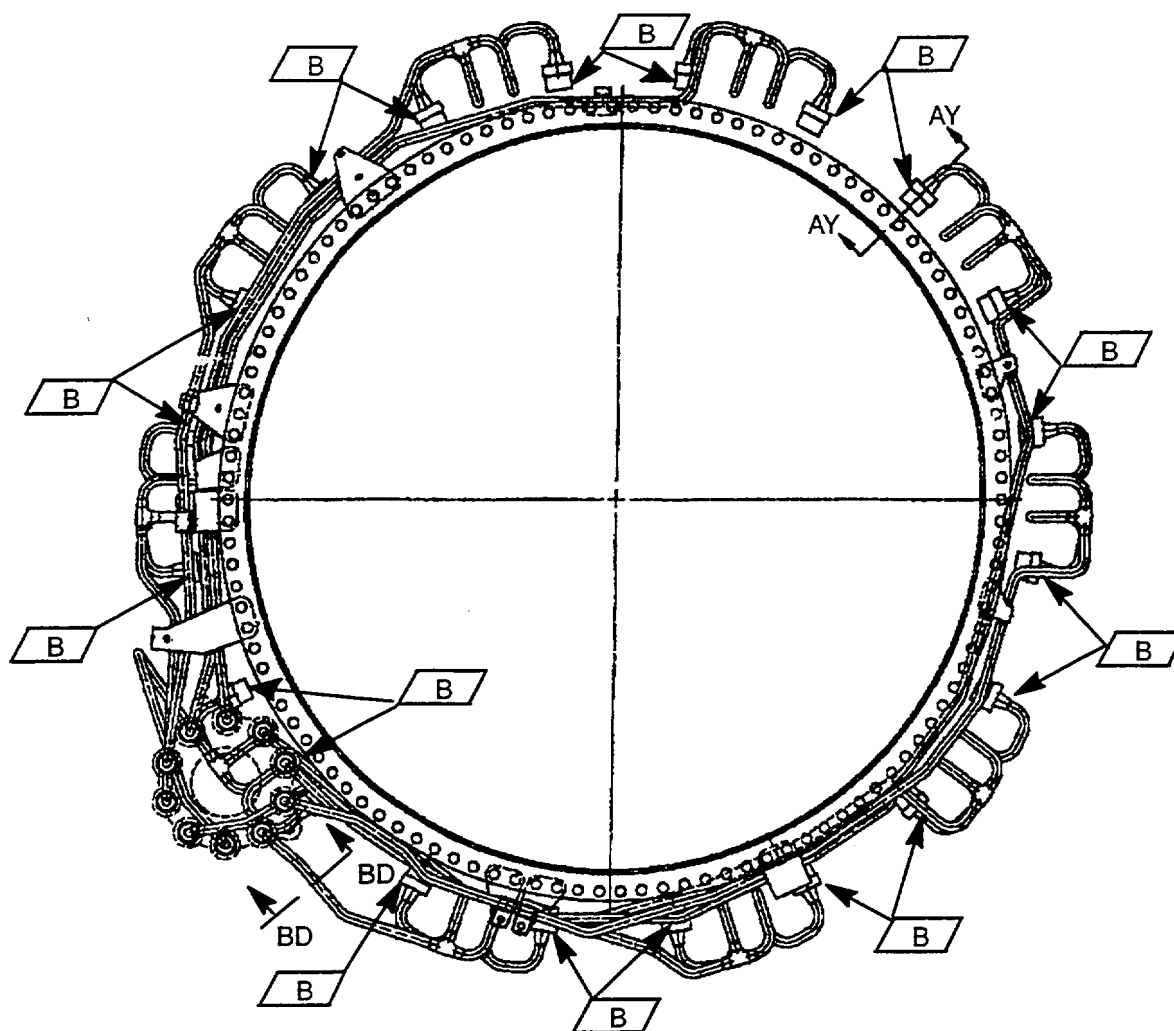


SECTION THROUGH DIFFUSER/COMBUSTION SECTION

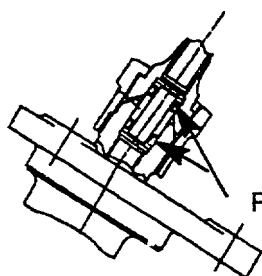
E7759

Modification of the Fuel Nozzle Supply Manifold
Fig.8 (Sheet 1)

V2500-ENG-73-0088



VIEW WHEN YOU LOOK IN DIRECTION A – A



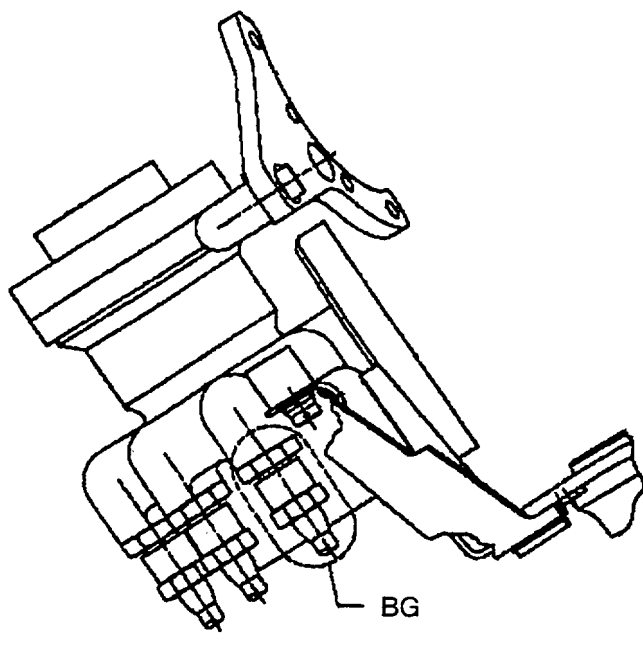
PART **AP** TREAT PER TEXT

SECTION AY – AY 20 PLACES
AT LOCATION **B**

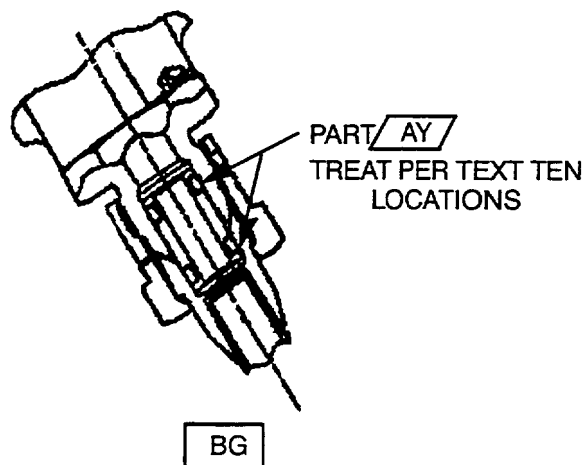
E7760

Modification of the Fuel Nozzle Supply Manifold
Fig.8 (Sheet 2)

V2500-ENG-73-0088



VIEW WHEN YOU LOOK IN
DIRECTION BD - BD



E7761

Modification of the Fuel Nozzle Supply Manifold
Fig.8 (Sheet 3)

V2500-ENG-73-0088



SERVICE BULLETIN

3. Material InformationA. Kit 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
------------------------------	-----	-----------------------------	---------	------------------------------	-----------------------------

Applicability: For each V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5, V2533-A5, V2525-D5 and V2528-D5 Engine to incorporate this Bulletin.

(73-11-41)	10	2.86	Gasket Option	ST2229-07 (01-040)	(B)(C)
(73-11-41)	20	1.99	Gasket Option	ST2229-08 (01-050)	(B)(E)

Applicability: For each V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5 and V2533-A5 Engine to incorporate this Bulletin.

2A3229-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0504-01 (01-060)	(S1)(A)(B)
2A3230-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0508-01 (01-160)	(S1)(A)(B)
2A3231-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0509-01 (01-260)	(S1)(A)(B)
2A3232-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0510-01 (02-060)	(S1)(A)(B)
2A3233-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0511-01 (02-160)	(S1)(A)(B)
2A3234-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0513-01 (03-260)	(S1)(A)(B)
2A3235-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0515-01 (03-060)	(S1)(A)(B)
2A3236-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A0516-01 (02-260)	(S1)(A)(B)
2A3237-01 (73-11-41)	1		Manifold Assy. Fuel Nozzle Supply	2A1229-01 (03-160)	(S1)(A)(B)

V2500-ENG-73-0088



SERVICE BULLETIN

2A3238-01 1
(73-11-41)

Manifold Assy.
Fuel Nozzle
Supply

2A1389-01 (S1)(A)(B)
(03-360)

C. Consumable Materials

CoMat 06-078 Antigalling Compound

CoMat 10-121 PWA 36511 Lubricating Fluid

D. Instructions/Disposition Code Statements:

(S1)Old and New Parts are freely and fully interchangeable, but must be installed as a set at any one tube location. The Gasket Options specified are only to be used with the old configuration. These parts will not be installed when the new configuration is installed.

(A) The new part is currently available.

(B) The old part will no longer be supplied.

(C) The ST2229-07 Gasket Option consists of Gasket AS3074-07 or Gasket AS3075-07.

(E) The ST2229-08 Gasket Option consists of Gasket AS3074-08 or Gasket AS3075-08.

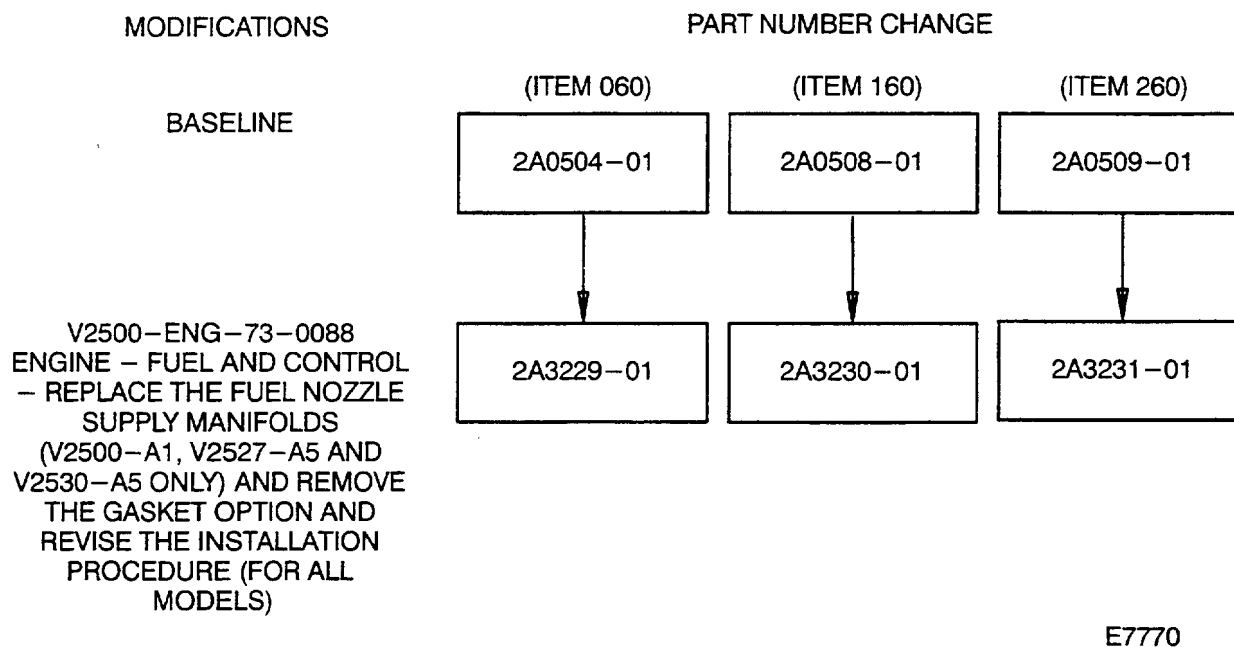
NOTE: The estimated 1997 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.

V2500-ENG-73-0088



SERVICE BULLETIN

Printed in Great Britain



Family Tree (V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5 and V2533-A5 Engines) -
Ref. Catalog Sequence No 73-11-41. Fig. 01 Items 060, 160, 260
Fig.9

V2500-ENG-73-0088

Mar.5/97

Page 19



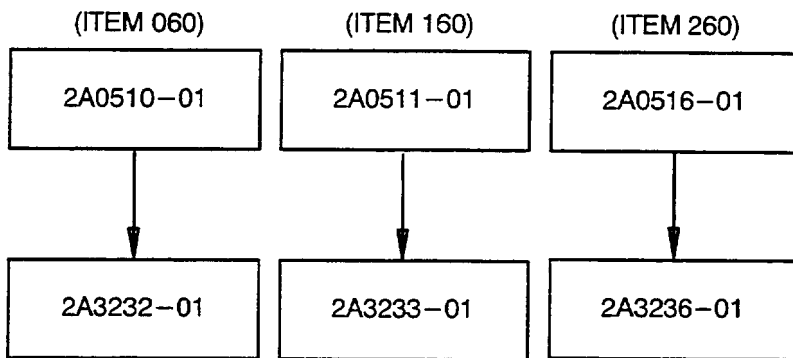
SERVICE BULLETIN

MODIFICATIONS

PART NUMBER CHANGE

BASELINE

V2500-ENG-73-0088
ENGINE - FUEL AND CONTROL
- REPLACE THE FUEL NOZZLE
SUPPLY MANIFOLDS
(V2500-A1, V2527-A5 AND
V2530-A5 ONLY) AND REMOVE
THE GASKET OPTION AND
REVISE THE INSTALLATION
PROCEDURE (FOR ALL
MODELS)



E7771

Family Tree (V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5 and V2533-A5 Engines) -
Ref. Catalog Sequence No 73-11-41. Fig. 02 Items 060, 160, 260
Fig.10

V2500-ENG-73-0088



SERVICE BULLETIN

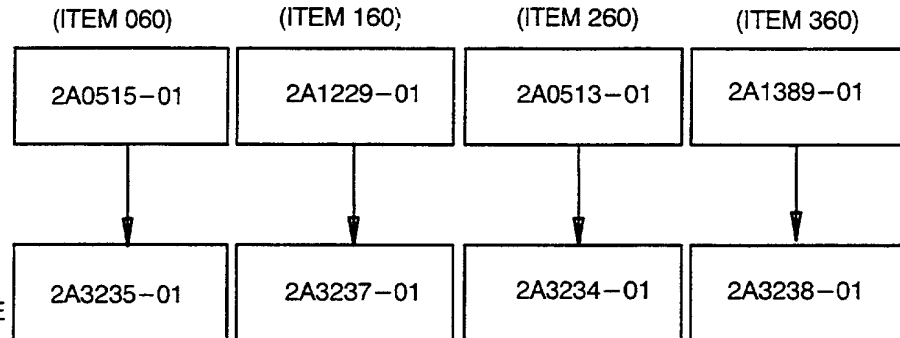
Printed in Great Britain

MODIFICATIONS

PART NUMBER CHANGE

BASELINE

V2500-ENG-73-0088
ENGINE - FUEL AND
CONTROL - REPLACE THE
FUEL NOZZLE SUPPLY
MANIFOLDS (V2500-A1,
V2527-A5 AND V2530-A5
ONLY) AND REMOVE THE
GASKET OPTION AND
REVISE THE INSTALLATION
PROCEDURE (FOR ALL
MODELS)



E7772

Family Tree (V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5 and V2533-A5 Engines) -
Ref. Catalog Sequence No 73-11-41. Fig. 02 Items 060, 160, 260
Fig.11

V2500-ENG-73-0088



International Aero Engines

SERVICE BULLETIN

Printed in Great Britain

V2500-ENG-73-0088

Mar. 5/97

Page 22