ENGINE - IGNITION - INTRODUCE IGNITER PLUG INSERTS WITH AN INCREASED WALL THICKNESS AND IMPROVED THREAD REQUIREMENTS - CATEGORY CODE 4 - MOD.ENG-74-0004

1. Planning Information

A. 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. V10137
V2524-A5 Engines before Serial No. V10137
V2527-A5 Engines before Serial No. V10137
V2530-A5 Engines before Serial No. V10137
V2525-D5 Engines Serial No. V20029
V2528-D5 Engines Serial No. V20029

B. Reason

(1) Condition:

A thin wall condition is possible in some igniter plug inserts. This reduced thickness results in reduced part strength and can lead to complete fracture, particularly during igniter removal.

(2) Background:

It is possible that during manufacture, some igniter plug inserts were made with a thin wall condition. Subsequent installation and removal of the igniter can weaken or fracture the insert at this thin wall location. To date, there have been two instances of insert fracture. One during borescope inspection in which the insert fractured and lead to an extended delay due to the unavailability of a replacement. The other fracture occurence was in service and caused heat distress in the area of the igniters.

(3) Objective:

Replace the inserts with the potential thin wall condition with a new insert that has increased wall thickness, eliminating the potential for fracture.

(4) Substantiation

Substantiation was completed by design analysis.

(5) Effects of Bulletin on Workshop Procedures:

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

C. Description

(1) Replace the Screw Thread Inserts that are used with the Igniter Plug.

D. Approval

The Part Number Changes and/or part modifications 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 4

Accomplish at the first visit of an engine or module to a maintenance base capable of compliance with the accomplishment instructions regardless of the planned maintenance action or the reason for engine removal.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	12 minutes
(a) To gain access to the part that must be changed	5 minutes

(b) To install the Screw Thread inserts — 2 minutes

(c) To restore the engine to flyable condition — 5 minutes

TOTAL — 12 minutes

(2) At Overhaul — Not applicable

G. Material - Price and Availability

(1) Modification Kit 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

Tool No.	Qty	Description	Function	Avail
IAE 1P16092	1	Igniter Immersion Gage	Check Igniter Immersion Depth	(1)

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.

95VA002

(2) Other References

The V2500 Engine Illustrated Parts Catalog (S-V2500-1IA, S-V2500-2IA and S-V2500-3IA), Chapter/Section 74-21-41

The A320/V2500 Aircraft Maintenance Manual

The MD-90 Aircraft Maintenance Manual

L. Other Publications Affected

(1) The V2500 Engine Illustrated Parts Catalog (S-V2500-1IA, S-V2500-2IA and S-V2500-3IA), Chapter/Section 74-21-41, Figure 1, To add the new part.

(2) The V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-41-21, Cleaning to add the new part.

(3) The V2500 Engine Manual (E-V2500-1IA), Chapter/Section 72-41-21, Inspection, to add the new part.

(4) The V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-41-21, Cleaning, to add the new part.

(5) The V2500 Engine Manual (E-V2500-3IA), Chapter/Section 72-41-21, Inspection, to add the new part.

2. Accomplishment Instructions

(Part I) V2500-A1, V2522-A5, V2524-A5, V2527-A5 and V2530-A5 Engines

A. Prerequisite Procedures

(1) On the aircraft panel 115VU, put a warning notice to tell the persons not to start the engine 1 (2).

(2) Make sure that the engine 1(2) has been shut down for at least 30 minutes.

(3) On the aircraft panel 50VU, make sure that the on legend on the ENG FADEC GND PWR push button switch is OFF and install a warning notice.

(4) Open the Fan Cowls by use of the approved procedure in Reference (2), Chapter/Section 71-13-00, (TASK 71-13-00-010-010).

(5) Open the thrust reverser halves by the approved procedure given in Reference (2), Chapter/Section 78-32-00, (TASK 78-32-00-010-010).

(6) Put the access platform in position.

(7) Install the inlet cowl cover.

B. Remove the igniter plug by Figure 3 and as follows:

(1) Hold the threaded insert so it will not turn with a wrench.

(2) Loosen the igniter plug with a wrench to remove it from the threaded insert.

(3) Remove the igniter plug.

(4) Do the procedure again to remove the remaining igniter plug.

C. Remove the threaded insert by Figure 3 and as follows:

(1) Remove the lockwire securing the Igniter Threaded Insert.

(2) Remove the igniter threaded insert and classified spacer(s).

(3) Make a note of the combined spacer thickness.

(4) After insert has been removed, inspect threads in diffuser case for any damage and metal pick-up. Carefully remove any loose or sheared metal on the threads.

(5) If the diffuser case threads are damaged, repair the threads with a 1.0625-16UNJ-3B tap.

(6) Do the procedure again to remove the remaining Igniter Threaded Insert.

D. Install a new threaded insert as follows:

(1) Select one to two spacers that are of a combined thickness 0.060 Inch (1,524 mm) less than the combined spacer dimension noted in step C. (3), Part I. Do not exceed the 0.300 inch (7,62 mm) limit, to obtain the desired igniter plug immersion.

(a) A maximum of two spacers may be used at each igniter location.

(b) Total thickness of the two spacers shall not be more than 0.300 incjes (7,62 mm).

(2) Apply CoMat 10-003 anti-seize compound to the igniter insert. Remove all excess compound.

(3) Install selected spacer(s) and igniter threaded insert.

(4) Torque the threaded insert to 600 to 700 lbf-in (67,791 to 79,089 Nm).

(5) Do the procedure again to install the remaining Igniter Threaded Insert.

E. Do a check of the igniter plug immersion depth. See Figure 3.

(1) Measure the distance E from the top of the insert to the point L on the outer combustion chamber nearest the fuel nozzle. Use the IAE 1P16092 Igniter Immersion Gage (1 off).

(2) Measure distance D from the surface of the igniter plug that touches the threaded insert to the inner end of the igniter plug.

(3) The difference between distance E and distance D is the igniter immersion depth F which must be 0.040 to 0.80 inches (1,02 to 2,03 mm).

(4) Step D. must be repeated until you obtain dimension F. at both locations.

F. Install the igniter plug by Figure 3 and as follows:

NOTE: Step E. must be successfully completed before you do this step.

(1) Make sure the thread of the igniter plug is clean.

CAUTION: APPLY ANTI-SEIZE COMPOUND MODERATELY TO THE IGNITER PLUG THREAD. IF YOU APPLY TOO MUCH COMPOUND, IT CAN GO INTO THE ENGINE.

(2) Apply CoMat 10-003 anti-seize compound to the igniter plug threads.

(3) Keep the igniter threaded insert from turning with a wrench while tightening the igniter plug.

(4) Torque the igniter plug to 300 to 360 lbf-in (33,895 to 40,675 Nm).

NOTE: On installation of the igniter plug make sure that the plug goes through the outer liner of the combustion chamber.

(5) Do the procedure again for the second igniter plug.

G. Post requisite Procedures

(1) Close the thrust reverser halves by use of the approved procedure given in Reference (2), Chapter/Section 78-32-00 (TASK 78-32-00-410-410).

(2) Close the Fan Cowls by the use of the approved procedure in Reference (2), Chapter/Section 71-13-00 (71-13-00-410-010).

(3) Remove the inlet cowl cover.

(4) Remove the access platform.

(5) Remove the warning notices.

(Part II) V2525-D5 and V2528-D5 Engines

F. Prerequisite Procedures

(1) On the panel 115VU:

(a) Put a warning notice to tell the persons not to start the Engine 1 (2).

(2) Make sure that the Engine 1(2) has been shut down for at leat 30 minutes.

(3) On panel 50VU:

(a) Make sure that the ON legend of the ENG FADEC GND PWR pushbutton switch is off.

(b) Install a warning notice.

(4) Open the fan cowls by the procedure given in Reference (3), Chapter/Section 71-13-00.

(5) Open the thrust reverser halves by the procedure given in Reference (3), Chapter/Section 78-32-00.

(6) Put the access platform in position.

(6) Install the inlet cowl cover.

G. Remove the igniter plug and inserts by the procedures given in 2.B. and C., Part I of the Accomplishment Instructions.

H. Install the igniter plug and inserts by the procedures given in 2.D., E., and F., Part I of the Accomplishment Instructions.

I. Post-requisite Procedures

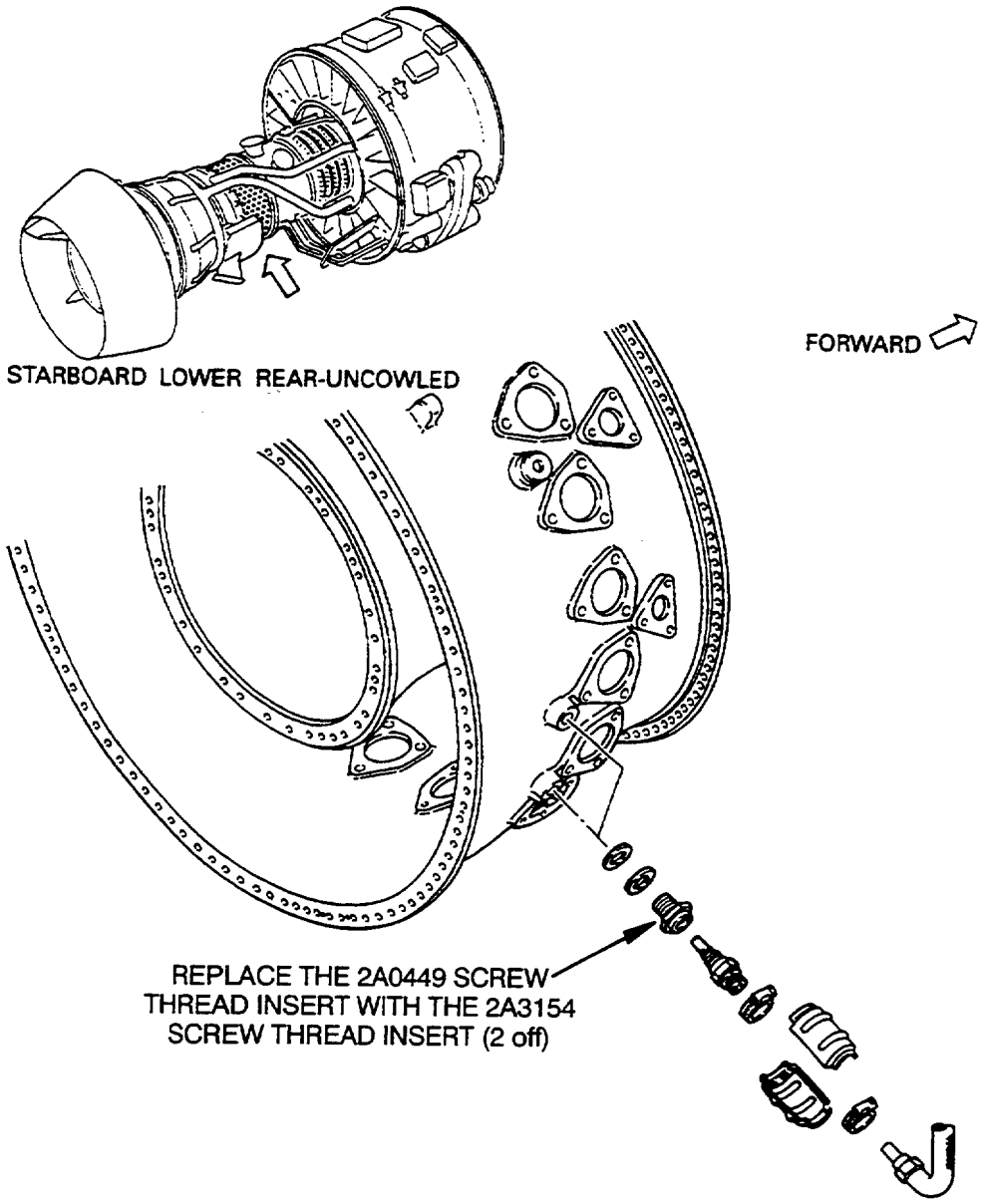
(1) Remove the inlet cowl cover.

(2) Close the thrust reverser halves by the approved procedure in Reference (3), Chapter/Section 78-32-00.

(3) Close the fan cowls by the approved procedure in Reference (3), Chapter/Section 71-13-00.

(4) Remove the access platform.

(5) Remove the warning notices.



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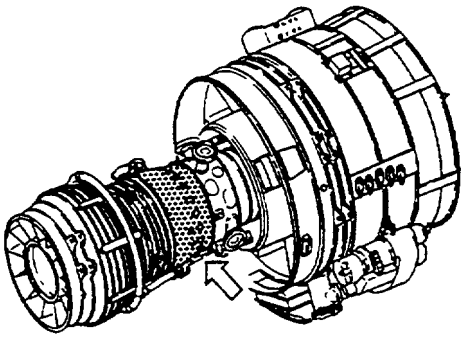
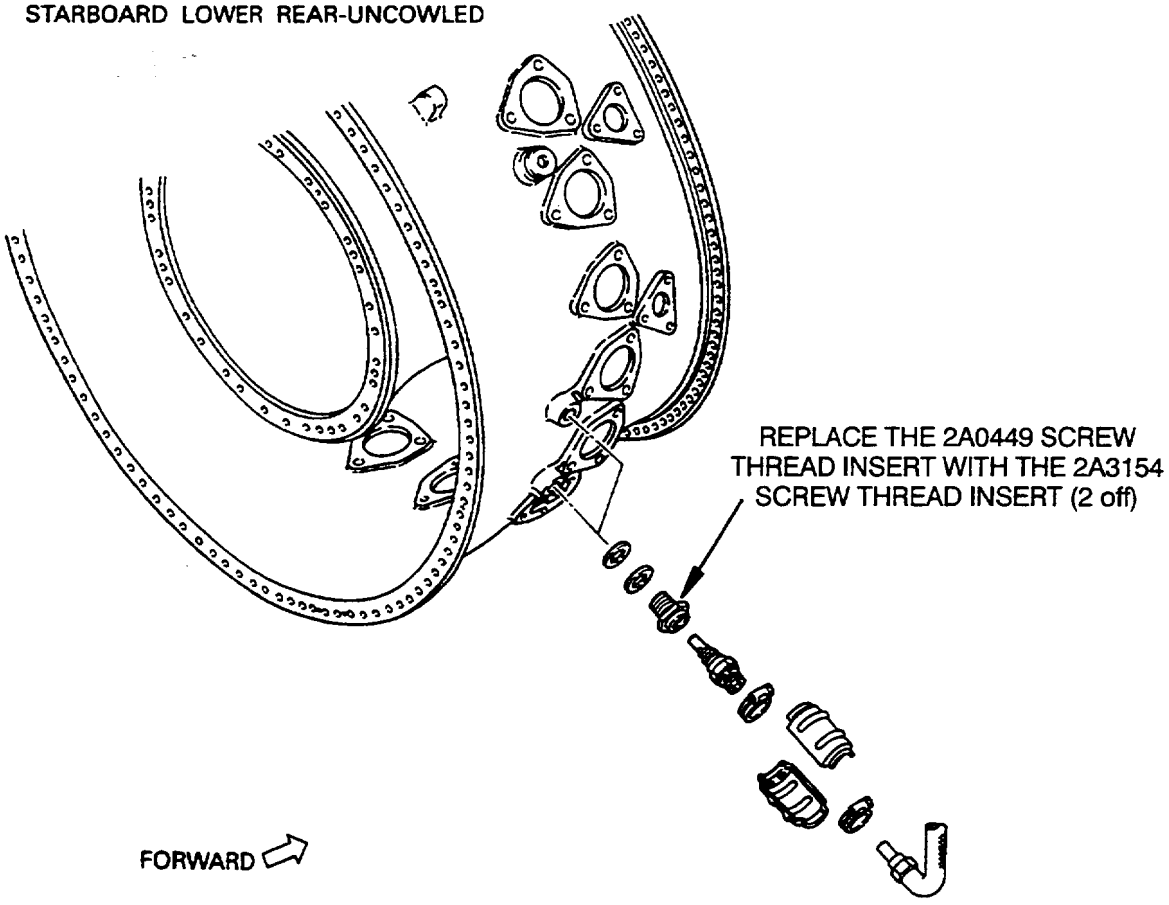
Location of the Screw Thread Insert (V2500-A1, V2522-A5, V2524-A5, V2527-A5 and V2530-A5)
Fig.1



STARBOARD LOWER REAR-UNCOWLED



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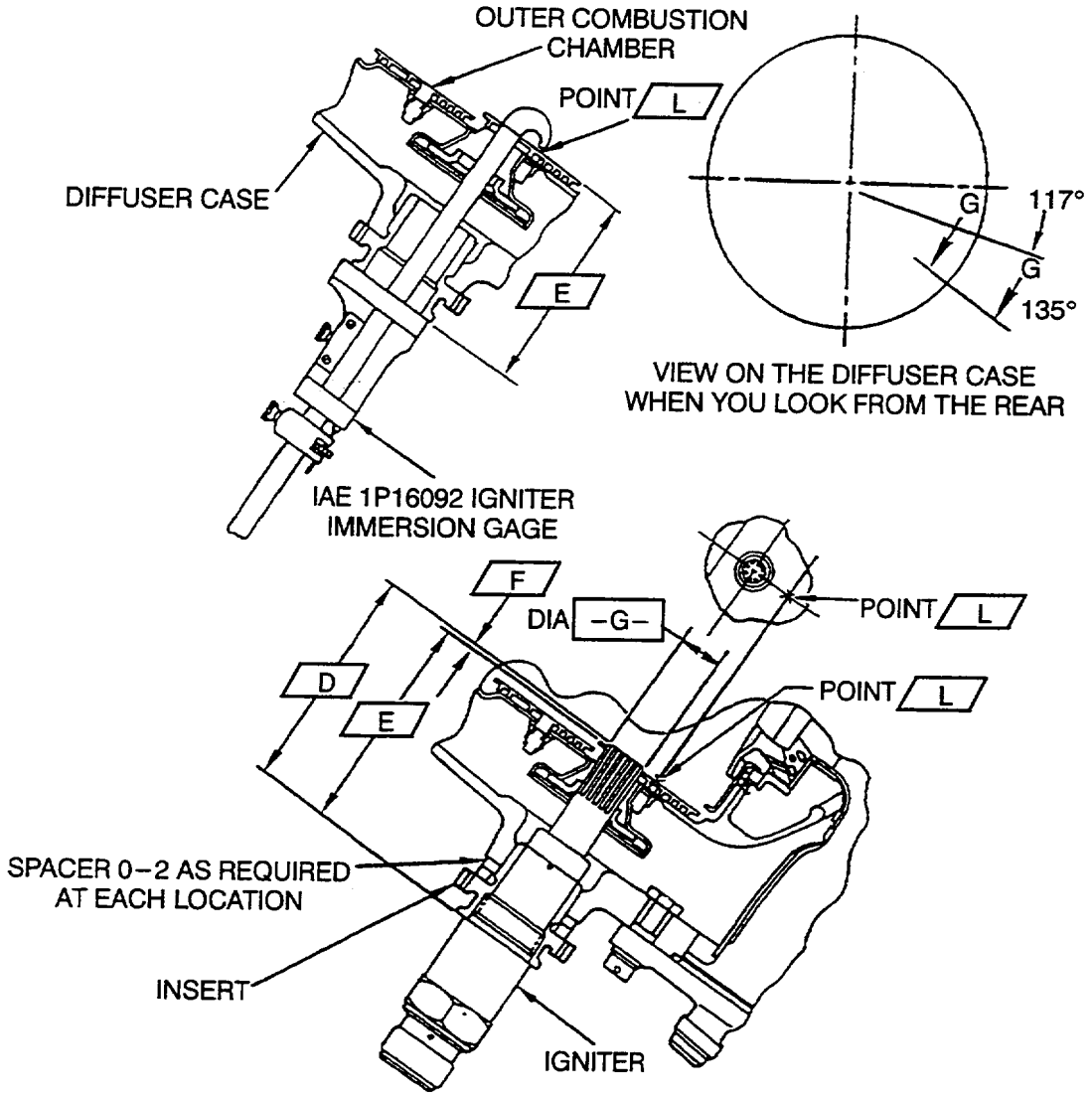
Modification of the Screw Thread Insert (V2500-A1 and V2528-D5)
Fig.2



Checking Igniter Plug Immersion Depth (V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5, V2525-D5 and V2530-D5)
Fig.3

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
Applicability: For each V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2530-A5, V2525-D5 and V2528-D5 Engine to incorporate this Service Bulletin					
2A3154 (74-21-41)	2	244.00	Insert, Screw Thread	2A0449 (01-020)	(S1)(A)(B)

C. Consumable Materials

CoMat 10-003 Anti-seize Compound

D. Instructions/Disposition Code Statements:

(S1)Old and New Parts are freely and fully interchangeable.
(A) The new part is currently available.
(B) The old part will no longer be supplied.

NOTE: This 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.