International Aero Engines

SERVICE BULLETIN

ENGINE - IGNITION - INTRODUCTION OF A REDIMENSIONED IGNITION LEAD COOLING SHROUD AND THE DELETION OF IGNITION COOLING BOX SUPPORT BRACKET - CATEGORY CODE 5 - MOD.ENG-74-0003

Printed in Great Britain

1. Planning Information

A. Effectivity

(1) Aircraft: (a) Airbus A320
(b) Airbus A321
(c) McDonnell Douglas MD-90

(2) Engine : (a) V2500 - A1 Engines prior to serial Number V0362
(b) V2527 - A5 Engines prior to serial number V10118 *
(c) V2530 - A5 Engines prior to serial number V10118 *
(d) V2525 - D5 Engines prior to serial Number V20026 *
(e) V2528 - D5 Engines prior to serial number V20026 *

* The serial number data shown are of a preliminary nature and are provided for advanced planning only. A future revision to this Service Bulletin will confirm final serial number effectivity.

B. Concurrent Requirements

Vendor Service Bulletin No. 74-48 Revision 2 requires to be incorporated concurrently with IAE Service Bulletin No. V2500-ENG-74-0003.

C. Reason

(1) Condition

(a) Potential foul between adaptor of the Ignition Lead and Cooling Shroud for Exciter End and Stage 6 Buffer Air Tube. The foul occurred on V2500-A1 Engines serial number before V0266 on which Stage 6 Buffer Air Tube is installed.
(b) Potential foul between Cooling Shroud for Exciter End and Mounting Bolt for Exciter Bracket on V2500-D5 Engines.
(c) Potential fouls between each Support Bracket End on the Cooling Box and between nut and Support Bracket.

(2) Background

To eliminate the potential fouls.

(3) Objective

(a) Move and change the adaptor of the Ignition Lead.
(b) Reduce length of the Cooling Shroud for Exciter End.
(c) To eliminate the Support Brackets on the Cooling Box.

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

(4) Substantiation

Substantiation by analysis has been completed.

(5) Effects 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

None

D. Description

(1) The changes introduced by this Service Bulletin are as follows:

(a) To replace the Ignition lead.

(b) To replace the Cooling Shroud for Exciter End.

(c) To remove the support bracket from the cooling boxes, if the Service Bulletin No. V2500-ENG-74-0002 Revision 1 has been applied.

E. Approval

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

F. Compliance

Category Code 5

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

G. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin:

Venue	Estimated Manhours
(1) In Service	Total: 56 Minutes

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(a) To Gain Access

1. Install Warning Notices		3 Minutes
2. Open the Cowls		7 Minutes
3. Disassemble the Parts		15 Minutes
	Total:	25 Minutes

(b) To Return to Flyable Status

1. Assemble the Parts		20 Minutes
2. Close the Cowls		8 Minutes
3. Remove Warning Notices		3 Minutes
	Total:	31 Minutes

(2) At Overhaul Not Affected

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

Remarks: The time for the V2500-A1 and -A5 Models are the same as those for the V2500-D5 Model.

Material - Price and Availability

(1) Modification kit

Refer to Service Bulletin No. 74048 issued by Unison Industries.

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

I. tooling - Price and Availability

Special tools are not required to accomplish this Service Bulletin.

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J. Weight and Balance

(1)	Weight Change	None
(2)	Moment arm	No effect
(3)	Datum	Engine front mount centerline (Power Plant Station (P.P.S.) 100)

K. Electrical Load Data

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

L. References

(1) Internal Reference No.

93VJ126E

93VJ126F

(2) Other References

(1) V2500 Engine Illustrated Parts Catalog, Chapter/Section 74-11-38 and 74-21-43.
(2) V2500 Power Plant Illustrated Parts Catalog, Chapter/Section 74-11-38 and 74-21-43.
(3) SPM TASK 70-41-00-400-501, General Torque Tightening Technique.
(4) UNISON Industries Service Bulletin No. 74-48.
(5) IAE Service Bulletin No. V2500-ENG-74-0002.
(6) Airbus A320/A321 Aircraft Maintenance Manual, TASK 71-13-00-010-010.
(7) Airbus A320/A321 Aircraft Maintenance Manual, TASK 78-32-00-010-010.
(8) SPM TASK 70-43-00, Connection of Electrical Plugs.
(9) Airbus A320/A321 Aircraft Maintenance Manual, TASK 71-00-00-710-017.
(10) Airbus A320/A321 Aircraft Maintenance Manual, TASK 71-13-00-410-010.
(11) Airbus A320/A321 Aircraft Maintenance Manual, TASK 78-32-00-410-010.
(12) McDonnell Douglas MD-90 Aircraft Maintenance Manual, 71-13-00 Page 201.
(13) McDonnell Douglas MD-90 Aircraft Maintenance Manual, 78-32-00 Page 201.
(14) McDonnell Douglas MD-90 Aircraft Maintenance Manual, 71-01-03 Page 201.

M. Other Publications affected:

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(1) V2500 Engine Illustrated Parts Catalog, Chapter/Section 74-11-38 and 74-21-43 will be revised to incorporate thw new parts.
(2) V2500 Power Plant Illustrated Parts Catalog, Chapter/Section 74-11-38 and 74-21-43 will be revised to incorporate the new parts.
(3) V2500 Engine Manual (E-V2500-1IA), 72-00-40 Installation -08, -09, Config -01, Installation -009 Config -02, Removal -02 Config -01, -02 and -03.
(4) V2500 Engine Manual (E-V2500-3IA), 72-00-40 Installation -08, -09, Removal -02 and -03.
(5) V2500 Component Maintenance Manual (CMM-MECH-V2500-1IA), 74-11-38 Cleaning and Inspection/Check.
(6) V2500 Component Maintenance Manual (CMM-MECH-V2500-3IA), 74-21-43 Cleaning and Inspection/Check.
(7) V2500 Engine Maintenance Manual (M-V2500-1IA) and M-V2500-3IA), 74-11-00 Description and Operation, 74-11-38 Removal/Installation 74-21-00 Description and Operation, 74-21-41 Removal/Installation and 74-21-43 Removal/Installation.

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2. Accomplishment Instructions

CAUTION: DO NOT BEND THE IGNITION LEAD TOO MUCH WHEN YOU DISCONNECT/CONNECT THE ELECTRICAL CONNECTOR. THE IGNITION LEAD CAN BE DAMAGED AND CAN CAUSE ELECTRICAL CIRCUIT DEFECTS.

NOTE: Make sure the engine 1 (2) has been shutdown for at least 5 minutes.

NOTE: There are two sets of Ignition Leads, Cooling Shrouds and Ignition Cooling Boxes on each engines. This instruction gives the procedures to remove and install one set of Ignition Lead, Cooling Shrouds and Ignition Cooling Boxes. Use the same procedure to remove and install the second set of Ignition lead, Cooling Shrouds and Ignition Cooling Boxes.

NOTE: This instruction gives for post application of the Service Bulletin No. V2500-ENG-74-0002 Revision 1.

A. Removal Instructions

For V2500-A1 Model (See Figures 1 thru 4 and 12)

WARNING: DO NOT TOUCH THE IGNITION SYSTEM COMPONENTS FOR AT LEAST ONE MINUTE AFTER THE APPLICABLE CIRCUIT BREAKERS ARE OPEN. THE ELECTRICAL DISCHARGE OF THE HIGH ENERGY UNIT IS DANGEROUS AND CAN KILL.

(1) On the panel 115VU:

(a) Put a warning notice to tell paersons not to start the engine 1 (2).

(2) On the panel 50VU:

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

(b) Install a warning notice.

(3) Open the cowls by 1.L (6) and (7)

(4) Remove the Cooling Shroud for Ignitor End (See Figure 2, Detail C)

(a) Loosen the clamps (8) and (10) and move them away from the Cooling Shrouds (9).

(b) Remove the Cooling Shrouds (9) (74-21-43, 01-070 or 02-070, PN 5U0065).

(5) Remove the Cooling Shroud for Exciter End (See Figure 2, Detail B)

(a) Loosen the clamps (3) and (5) and move away from the Cooling Shrouds (4).

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(b) Remove the Cooling Shrouds (4) (74-21-43, 01-030 or 02-030, PN 5U0062).

(6) Disconnect the connectors of the Ignition lead (See Figure 2, Details B and C)

(a) Disconnect the connectors of the Ignition Lead (1) and (6).

(b) Remove the clamps (3), (5), (8) and (10).

(c) Remove the grommets (2) and (7) from the Ignition Lead (1) and (6). Discard the grommets (2) and (7).

(7) Disassemble the clipping points of the Ignition lead (See Figures 1 thru 3)

(a) Remove the bolt (14, the washers (15) and (19), the clips (16) and (18), the spacer (17) and the nut (20) from the clipping point at Detail D.

(b) Remove the bolt (11), the washer (12) and the clip (13) from the clipping pint at Detail E.

(c) Remove the bolt (22), the washer (21) and the clip (23) from the clipping ppint at Detail F.

(d) Remove the bolt (26), the waher (25) and the clip (24) from the clipping point at Detail G.

(e) Remove the bolt (41), the washer (42) and the clips (43) and (44) from the clipping point at Detail H.

(f) Remove the bolt (29), the washer (28) and the clip (27) from the clipping point at Detail J.

(g) Remove the bolt (37), te waher (38), the clip (39) and the nut (40) from the clipping point at Detail K.

(h) Remove the bolt (36), the washers (31) and (35), the clips (32) amd (34), the spacer (33) and the nut (30) from the clipping point at Detail L.

(8) Remove the Ignition Lead from the Engine.

(9) Remove the Ignition Cooling Box (See Figure 4)

(a) Loosen the clamp (47) and disconnect the air inlet hose (48) from the Ignition Cooling Box (53).

(b) Disconnect the ignition supply harness (54).

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(c) Hold the Ignition Cooling Box (53) and remove the nuts (45) and the bolts (50). Remove the Ignition Cooling Box (53) with the Ignition Exciter (49).

(d) Remove the Ignition Cooling Box (53) (74-11-38, 01-100 and 01-102 or 01-500 and 01-502, PN 5U0059 and 5U0009 from the Ignition Exciter (49).

(10) Remove the four (4) nuts (1) (74-11-38, 01-090 and 01-490, PN 5U0060) which installed the support bracket (See Figure 9 and 10)

(11) Remove and discard the Support Bracket (74-11-38, 01-095 or 01-495, PN 5U0061) (See Figure 11 and 10).

(12) Put applicable protective covers/caps/plugs on all the openings.

For V2500-D5 Models (See Figures 5 thru 10)

WARNING: YOU MUST OPEN, SAFETY AND TAG THE CIRCUIT BREAKERS BEFORE YOU DO WORK ON THE SYSTEM. IF THE CIRCUIT BREAKERS ARE NOT SAFETIED, THEY CAN BE CLOSED AND THE SYSTEM CAN OPERATE. THIS CAN CAUSE AN INJURY AND/OR DAMAGE.

(1) Open the cowls by 1.L (12) and (13).

(2) Remove the Cooling Shroud for Ignitor End (See Figure 6, Detail C)

(a) Loosen the clamps (8) and (10) and move them away from the Cooling Shrouds (9).

(b) Remove the Cooling Shrouds (9) (74-21-43, 01-070 or 02-070, PN 5U0065).

(3) Remove the Cooling Shroud for Exciter End (See Figure 6, Detail B)

(a) Loosen the clamps (3) and (5) and move them away from the Cooling Shrouds (4).

(b) Remove the Cooling Shrouds (4) (74-21-43, 01-030 or 02-030, PN 5U0062).

(4) Disconnect the connectors of the Ignition lead (See Figure 6, Details B and C)

(a) Disconnect the both connectors of each of the Ignition Lead (1) and (6).

(b) Remove the clamps (3), (5), (8) and (10).

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(c) Remove the grommets (2) and (7) from each of the Ignition Lead (1) and (6). Discard the grommets (2) and (7).

(5) Disassemble the clipping points of the Ignition Lead (See Figures 5 thru 7)

(a) Remove the bolt (11) and the clip (12) from the clipping point at Detail D.

(b) Remove the bolt (13), the spacer (14), the clips (15) and (16) and the nut (17) from the clipping point at Detail E.

(c) Remove the bolt (21), the spacer (23), the clips (22) and (25) and the nut (24) from the clipping point at Detail F.

(d) Remove the bolt (18), the clip (19) and the nut (20) from the clipping point at Detail G.

(e) Remove the bolt (27), the clips (26) and (28) and the nut (29) from the clipping point at Detail H.

(f) Remove the bolt (31), the clips (30) and (32) and the nut (33) from the clipping point at Detail J.

(g) Remove the bolt (51), the clips (50) and (52), the spacer (53) and the nut (54) from the clipping point at Detail K.

(h) Remove the bolt (35), the clips (34), (36), (38) and (40), the spacers (37) and (39) and the nut (41) from the clipping point at Detail L.

(i) Remove the bolt (42), the clips (43), (45), (46), (47) and (48), the spacer (44) and the nut (49) from the clipping point at Detail M.

(6) Remove the Ignition Leads from the Engine.

(7) Remove the Ignition Cooling Box (See Figure 8)

(a) Loosen the clamp (56) and disconnect the air inlet hose (55) from the Ignition Cooling Box (60).

(b) Disconnect the ignition supply harness (61).

(c) Hold the Ignition Cooling Box (60) and remove the nuts (62) and the bolts (57). Remove the Ignition Cooling Box (60) with the Ignition Exciter (58).

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(d) Remove the Ignition Cooling Box (60 (74-11-38, 01-100 and 01-102 or 01-500 and 01-502, PN 5U0059 and 5U0058 or 5U0009) from the Ignition Exciter (58).

(8) Remove the four (4) nuts (1) (74-11-38, 01-090 nd 01-490, PN 5U0060) which installed the Support Bracket (See Figure 9).

(9) Remove and discard the Support Bracket (74-11-38, 01-095 or 01-495, PN 5U0061) (See Figure 10).

(10) Put applicable protective covers/caps/plugs on all the openings.

B. Installation instructions

NOTE: Before connection of the improved Ignition lead, clean the mating face. (refer to 1.L.(8))

NOTE: After this Instruction, do a test of the Ignition System by 1.L.(9) for V2500-A1 and -A5 Models or 1.L.(14) for V2500-D5 Model.

For V2500-A1 and -A5 Models (See Figures 1 thru 4 and 9 thru 11)

(1) Remove all covers/caps/plugs from the openings.

(2) Install the Ignition Cooling Box.

(a) Install the Ignition Cooling Box halves (See Figures 9 thru 11).

1. Install the improve Cooling Box (3) (74-11-38, 01-100 and 01-102 or 01-500 and 01-502, PN 5U0058 and 5U0059 or 5U0066 and 5U0067) on the Ignition Exciter.

2. Install the nuts (1) (74-11-38, 01-090 and 01-490, PN 5U0060).

3. TORQUE the twelve (12) nuts (1) to between 20 and 26 lbfin (2.26 and 2.94 Nm) (Refer to 1.L.(3)).

(b) Install the Ignition Exciter and the Ignition Coling Box (See Figures 4 and 11)

1. Put the Ignition Exciter (49) and the Ignition Cooling Box (53) in position on the mounting bracket (46).

2. Install the bonding strap)51) on to the lower forward bolt (50).

3. Install the bolts (50) and the nuts (45).

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4. Keep clearance between eachignition ystem minimum0.138 IN (3.5 MM) without applying any force to isolators (1) (See Figure 11).

5. TORQUE the bolts (50) to between 36 and 45 lbfin (4,1 and 5,0 Nm) (refer to 1.K.(3)).

(c) Connect the air inlet hose (48). (See Figure 4).

1. Connect the air inlet hose (48) to the Ignition Cooling Box (53) and install the clamp (47).

2. Tighten the clamp (47) by hand.

(d) Connect the ignition supply harness (54) to the Ignition Exciter (49).

(3) Install the improved Ignition Lead (see Figures 2, Details B and C).

(a) Install the grommets (2) and (7).

(b) Install the improved Ignition lead (1) and (6) (74-21-43, 01-100 or 02-100, PN 5U0072) through the clamps (3), (5), (8) and (10).

(c) Set the improved Cooling Shroud (4) (74-21-43, 01-030 or 02-030, PN 5U0071) to Exciter End.

(d) Connect the Lead to the Ignition Exciter and the Ignitor Plug.

(e) TORQUE the connectors of the Ignition lead (1) and (6) to between 140 and 160 lbfin (15.8 and 18.0 Nm) (Refer to 1.L(3)).

(4) Assemble the clipping points on the Ignition Lead (See Figures 1 thru 3).

(a) Install the bolt (14), the washers (15) and (19), the clips (16) and (18). the spacer (17) and the nut (20) to the clipping point at Detail D.

(b) Install the bolt (11), the washer (12) and the clip (13) to the clipping point at Detail E.

(c) Install the bolt (22), the washer (21) and the clip (23) to the clipping point at Detail F.

(d) Install the bolt (26), the washer (25) and te clip (24) to the clipping point at Detail G.

(e) Install the bolt (41), the washer (42) and the clips (43) and (44) to the clipping point at Detail H.

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(f) Install the bolt (29), the washer (28) and the clip (27) to the clipping point at Detail J.

(g) Install the bolt (37), the washer (38), the clip (39) and the nut (40) to the clipping point at Detail K.

(h) Install the bolt (36), the washers (31) and (35), the clips (32) and (34), the spacer (3) and the nut (30) to the clipping point at Detail L.

(i) TORQUE the bolts (11), (14), (22), (26), (29), (36), (37) and (41) to bwteen 36 and 45 lbfin (4.0 and 5.0 Nm) (Refer to I.L.(3)).

(5) Install the Cooling Shrouds for Ignitor End (See Figure 2, Detail C)

(a) Install the improved Cooling Shrouds (9) (74-21-43, 01-070 and 01-075 or 02-070 and 02-075, PN5U0065) onto the connections between the Ignitor Plug and the Ignition Lead.

(b) Set the clamps (8) and (10) to the Cooling Shrouds (9).

(c) TORQUE the clamp screws (8) and (10) to between 20 and 25 lbfin (2.22 nd 2.82 Nm) (Refer to 1.L.(3)).

(6) Install the improved Cooling Shroud for Exciter End (See Figure 9).

(a) Install the Cooling Shroud (5) (74-11-38, 01-030 and 02-030, PN 5U0071) onto the connection between the Ignition Exciter and the Ignition Lead.

(b) Set the clamps (4) and (6) to the Cooling Shroud for Exciter End.

(c) TORQUE the clampscrews (4) and (6) to between 20 and 25 lbfin (2.26 and 2.82 Nm) (Refer to 1.L.(3)).

(7) Close the cowls by 1.L(10) and (11).

For V2500-D5 Models (See Figures 5 thru 10 and 12)

(1) Remove all covers/caps/plugs from the openings.

(2) Install the Ignition Cooling Box.

(a) Install the Ignition Cooling Box halves (See Figures 9 and 10)

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1. Install the improved Cooling Box (3) (74-11-38, 01-100 and 01-102 or 01-500 and 01-502, PN 5U0058 and 5U0059 or 5U0066 and 5U0067) on the Ignition Exciter.

2. Install the nuts (1) (74-11-38, 01-090 and 01-490, PN 5U0060)

3. TORQUE the twelve (12) nuts (1) to between 20 and 26 lbfin (2.26 and 2.94 Nm) (Refer to 1.L.(3)).

(b) Install the Ignition Exciter and the Ignition Cooling Box (See Figures 8 and 12).

1. Put the Ignition Exciter (58) and the Ignition Cooling Box (60) in position on the mounting bracket.

2. Install the bonding strap (63) onto the lower forward bolt (57).

3. Install the bolts (57) and the nuts (62).

4. Keep clearance between each ignition system minimum 0.138 IN (3.5 MM) without applying any force to isolators (1). The ignition systems to be moved engine forward as much as possible within keeping the 0.138 IN (3.5 MM) clearance for the instructions of 2.B.(6).(c) (See Figure 12).

5. TORQUE the bolts (57) to between 36 and 45 lbfin (4.1 and 5.0 Nm) (Refer to 1.L(3)).

(c) Connect the air inlet hose (55) (See Figure 8).

1. Connect the air inlet hose (55) to the Ignition Cooling Box (60) and install the clamp (56).

2. Tighten the clamp (56) by hand.

(d) Connect the ignition supply harness (6) to the Ignition Exciter (58).

(3) Install the improved Ignition Lead (See Figure 6)

(a) Install the grommets (2) and (7).

(b) Install the improved Ignition Leads (1) and (6) (74-21-43, 01-100 or 02-100, PN 5U0073) through the clamps (3), (5), (8) and (10).

(c) Set the improved Cooling Shroud (4) (74-21-43, 01-030 or 02-030, PN 5U0071) to Exciter End.

(d) Connect the Lead to the Ignition Exciter and the Ignitor Plug.

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(e) TORQUE the connectors of the Ignition Leads (1) and (6) to between 140 and 160 lbfin (15.8 and 18.0 Nm) (Refer to 1.L.(3)).

(4) Assemble to clip points on the Ignition Lad (See Figures 5 thru 7)

(a) Install the bolt (11), and the clip (12) to the clipping point at Detail D.

(b) Install the bolt (13), the spacer (14), the clips (15) and (16) and the nut (17) to the clipping point at Detail E.

(c) Install the bolt (21), the spacer (23), the clips (22) and (25) and the nut (24) to the clipping point at Detail F.

(d) Install the bolt (18), the clip (19) and the nut (20) to the clipping point at Detail G.

(e) Install the bolt (27), the clips (26) and (28), and the nut (29) to the clipping point at Detail H.

(f) Install the bolt (31), the clips (30) and (32) and the nut (33) to the clipping point at Detail J.

(g) Install the bolt (51), the clips (50) and (52), the spacer (53) and the nut (54) to the clipping point Detail K.

(h) Install the bolt (35), the clips (34), (36), (38) and (40), the spacers (37) and (39) and the nut (41) to the clipping point at Detail L.

(i) Install the bolt (42), the clips (43), (45), (46), (47) and (48), the spacer (44) and the nut (49) to the clipping point at Detail M.

(j) TORQUE the bolts (13), (18), (21), (27), (31), (35), (42) and (51) to between 36 and 45 lbfin (4.0 and 5.0 Nm) (Refer to 1.K.(3)).

(5) Install the Cooling Shrouds for Ignitor End (See Figure 6, Detail C)

(a) Install the improved Cooling Shrouds (9) (74-21-43, 01-070 and 01-075 or 02-070 and 02-075, PN 5U0065) onto the connections between the Ignitor Plug and the Ignition lead.

(b) Set the clamps (8) and (10) to the Cooling Shrouds (9).

(c) TORQUE the clamp screws (8) and (10) to between 20 and 25 lbfin (2.22 and 2.82 Nm) (Refer to 1.L.(1)).

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(6) Install the improved Cooling Shroud for Exciter End (See Figures 9, 10 and 12)

(a) Install the Cooling Shroud (5) (74-21-43, 01-030) or 02-030, PN 5U00712) onto the connection between the Ignition Exciter and the Ignition Lead.

(b) Set the clamps (4) and (6) to the Cooling Shroud for Exciter End.

(c) TORQUE the clampscrews(4) and (6) to between 20 and 25 lbfin (2.26 and 3.82 Nm) (Refer to 1.L.(3)).

NOTE: To keep clearance between clamp (6) and small bracket (72-41-00, 03-860) minimum 0.138 IN (3.5 MM) and the small bracket to be moved engine upward (See Figure 12).

(7) Close the cowls by 1/L/(12) and (13).

C. Recording Instructions

A record of accomplishment is necessary.

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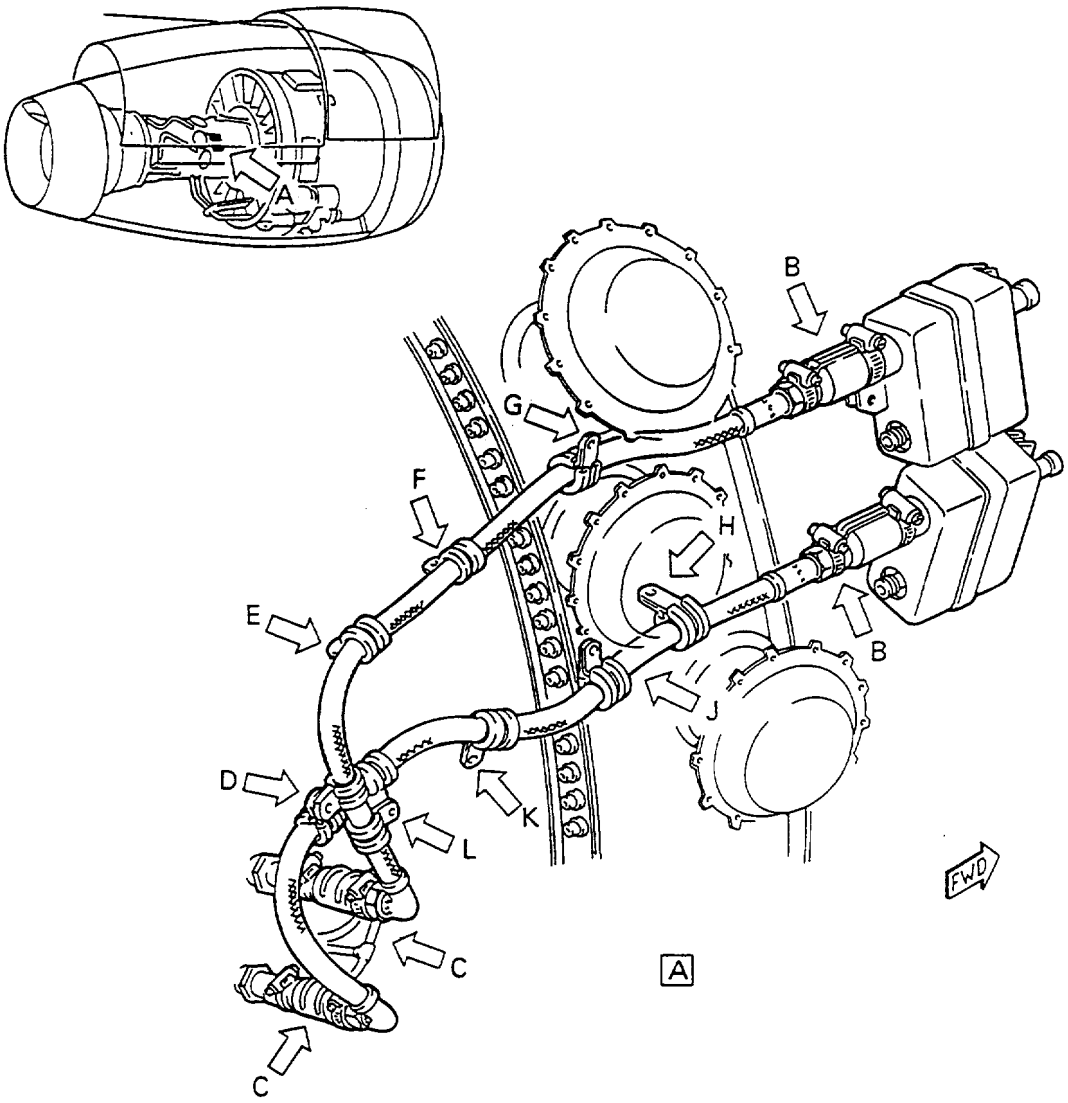

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Removal/Installation of the Ignition Lead (V2500-A1 and -A5)
Fig.1

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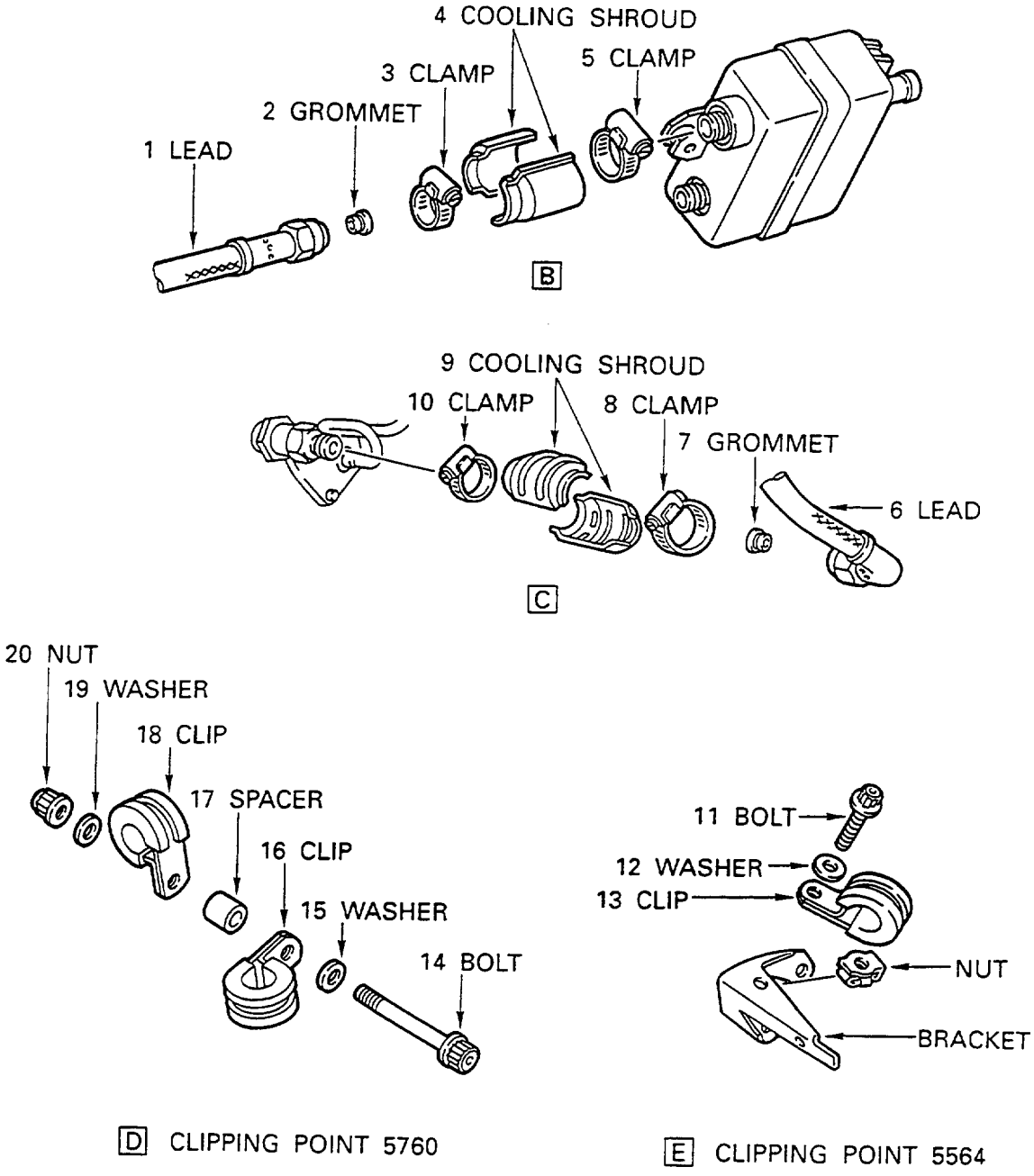
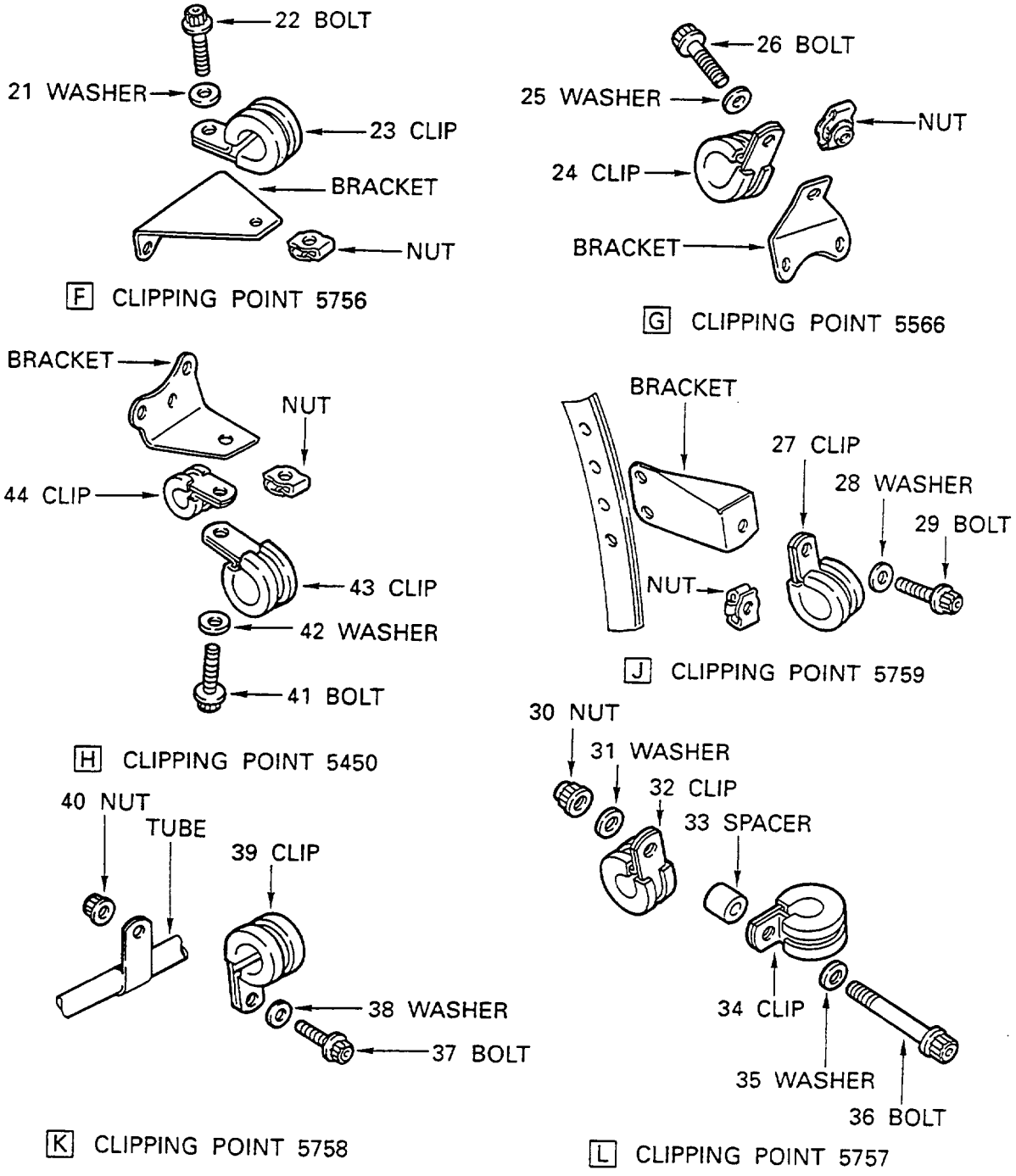


ded0001130

Removal/Installation of the Ignition Lead, Ignition Cooling Box and Cooling Shroud (V2500-A1 and -A5)
Fig.2

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



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Removal/Installation of the Ignition Lead (V2500-A1 and -A5)
Fig.3

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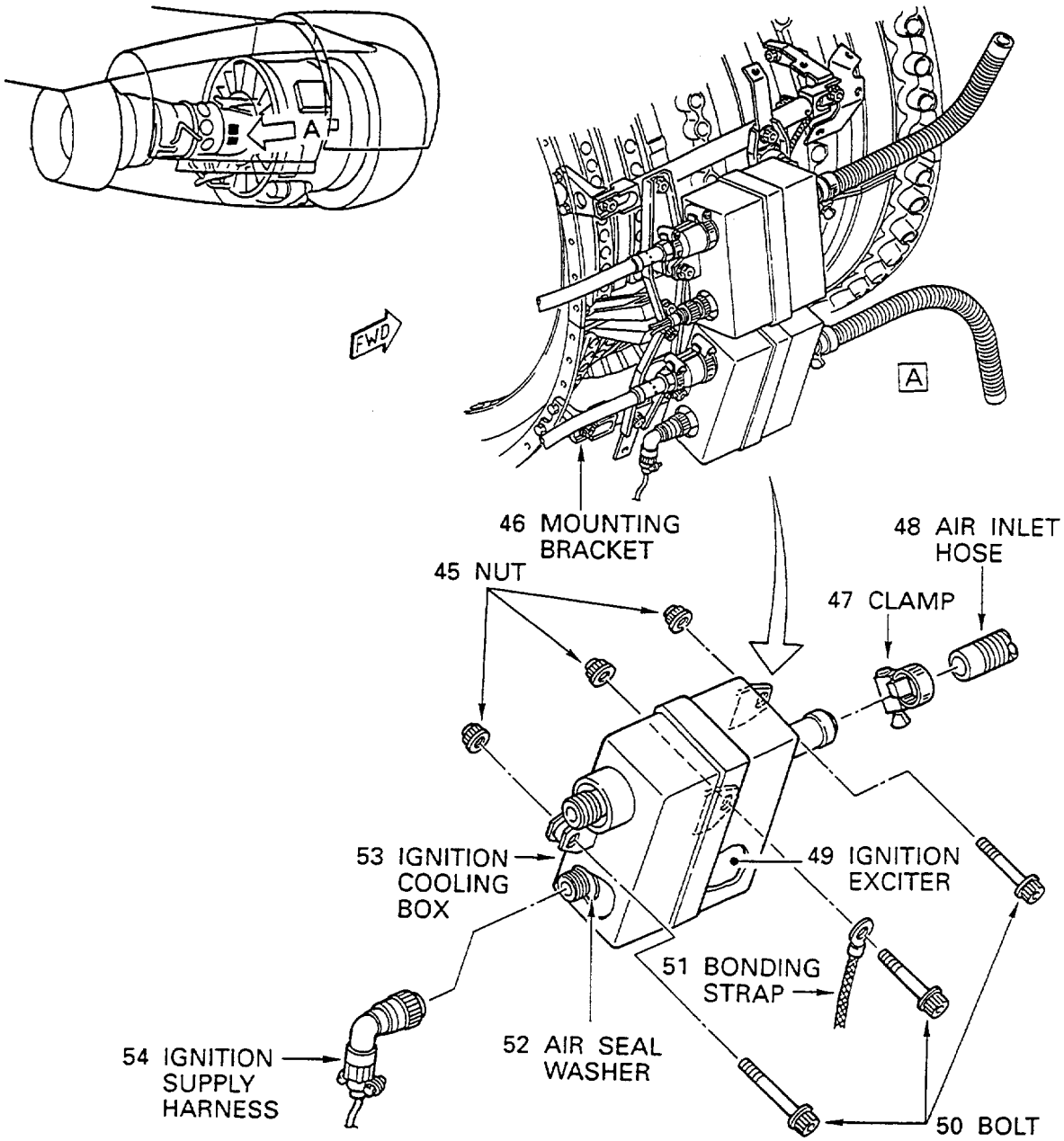

Removal/Installation of the Ignition Cooling Box (V2500-A1 and -A5)
Fig.4

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

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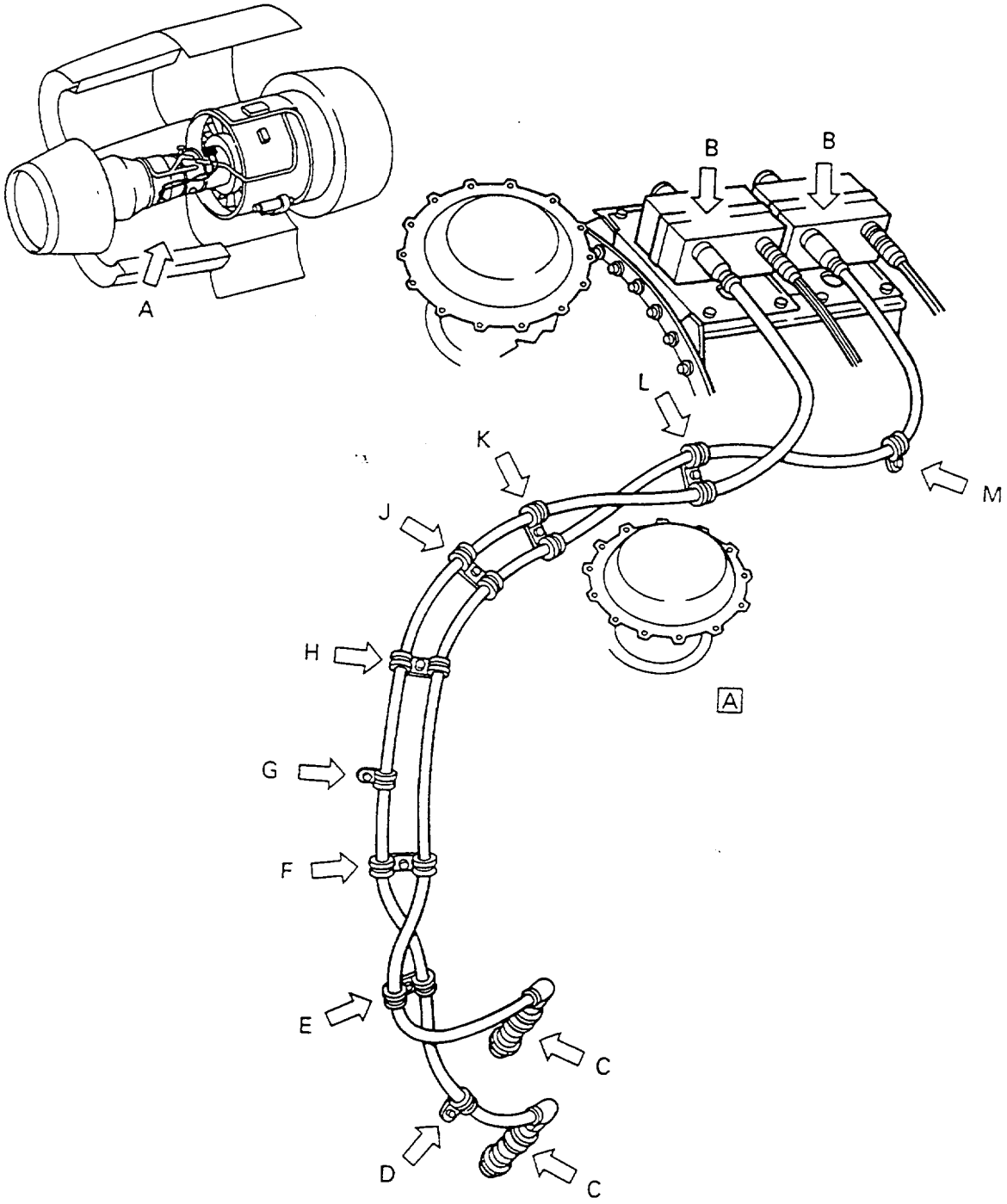

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Removal/Installation of the Ignition Lead (V2500-D5)
Fig.5

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

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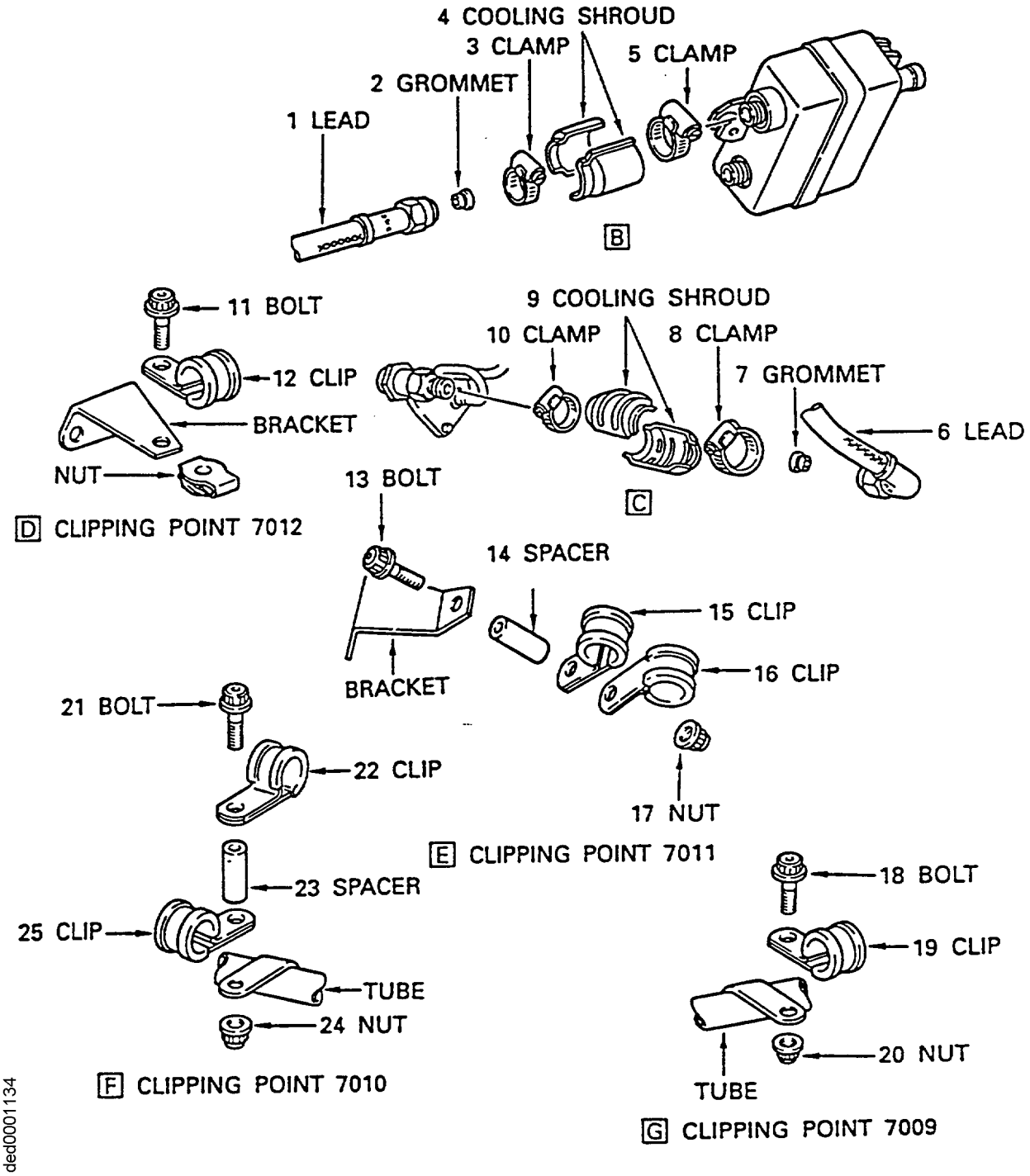
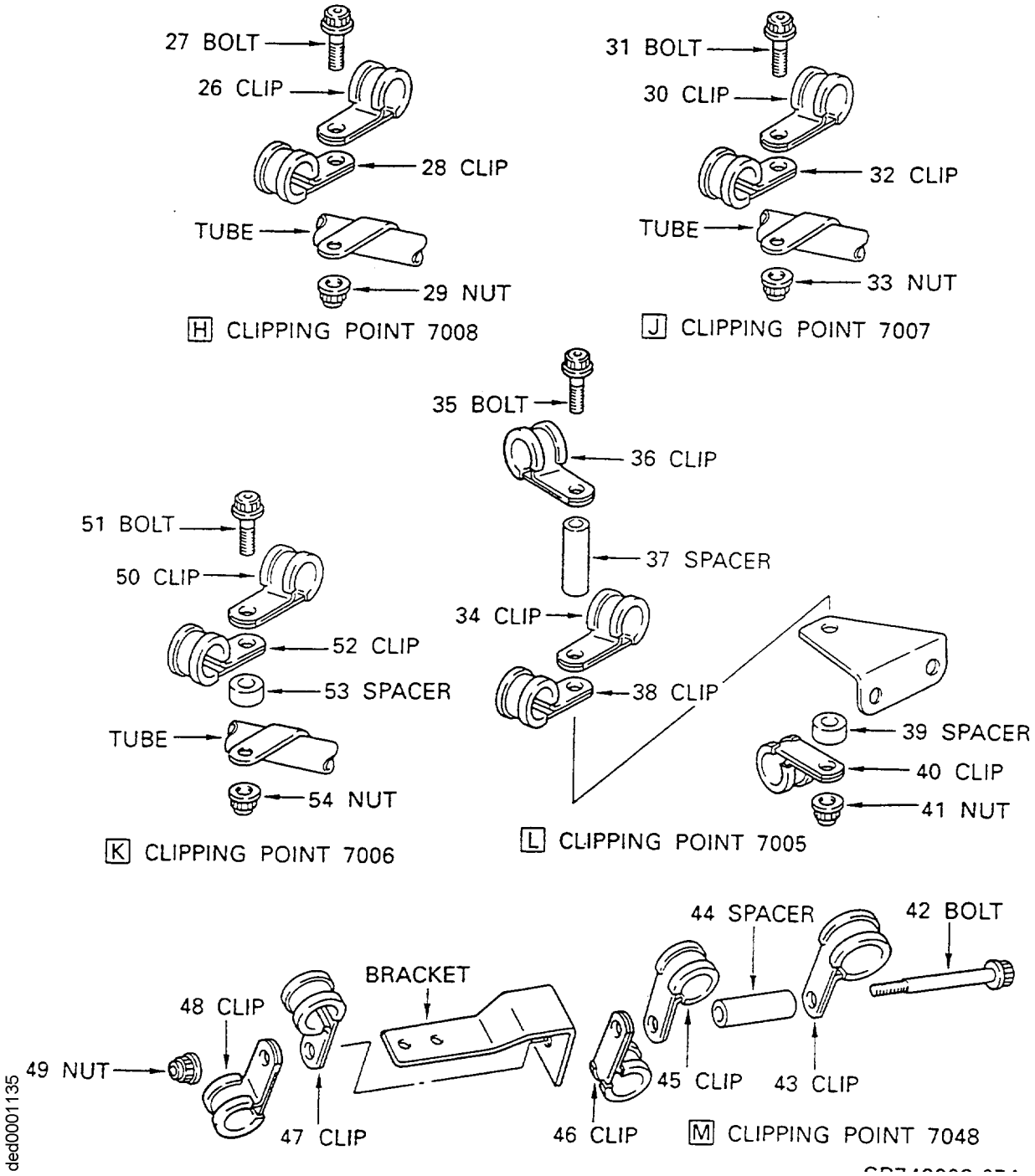


Removal/Installation of the Ignition lead, Ignition Cooling Box and Cooling Shroud (V2500-D5)
Fig.6

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



Removal/Installation of the Ignition Lead (V2500-D5)
Fig.7

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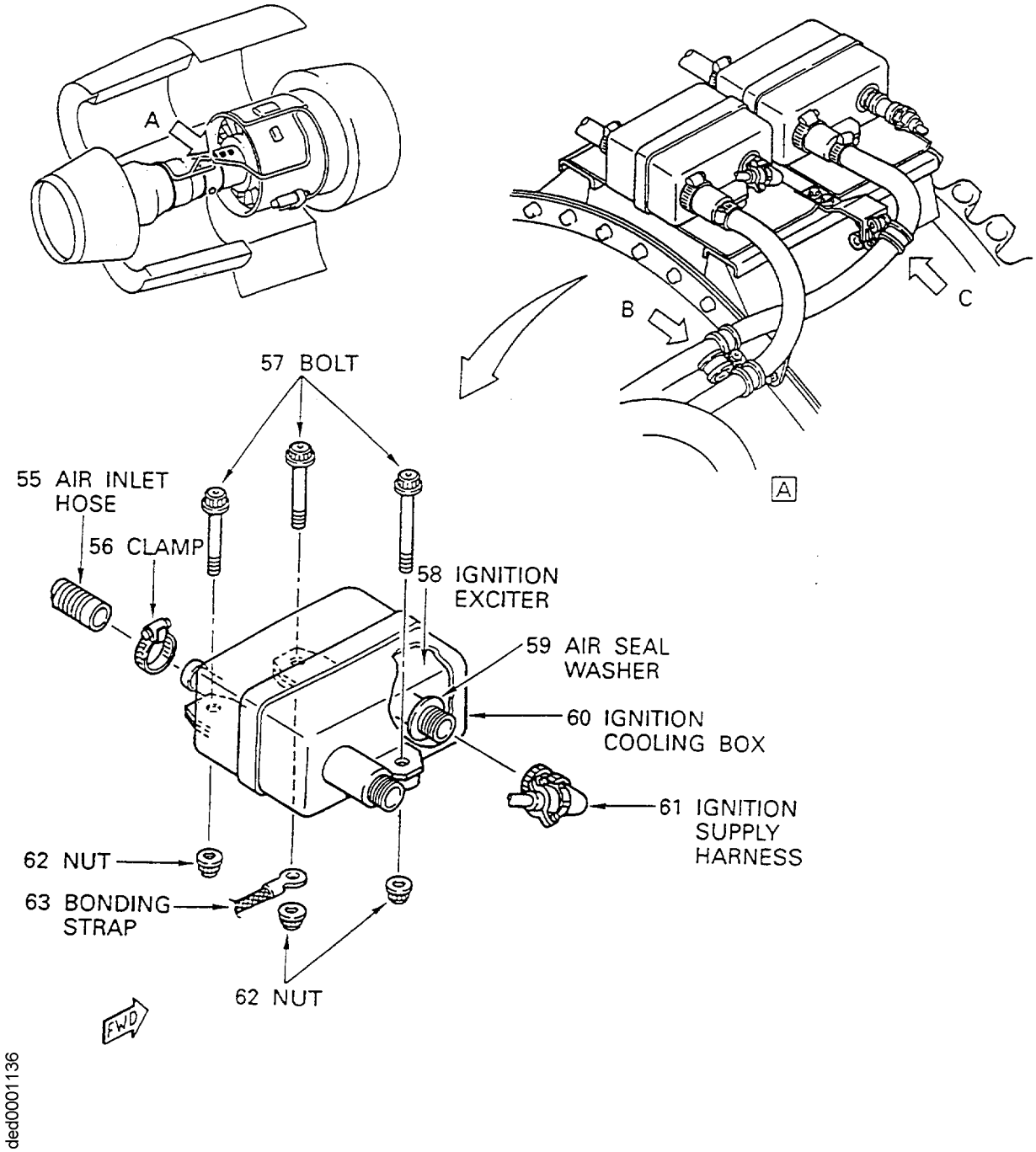
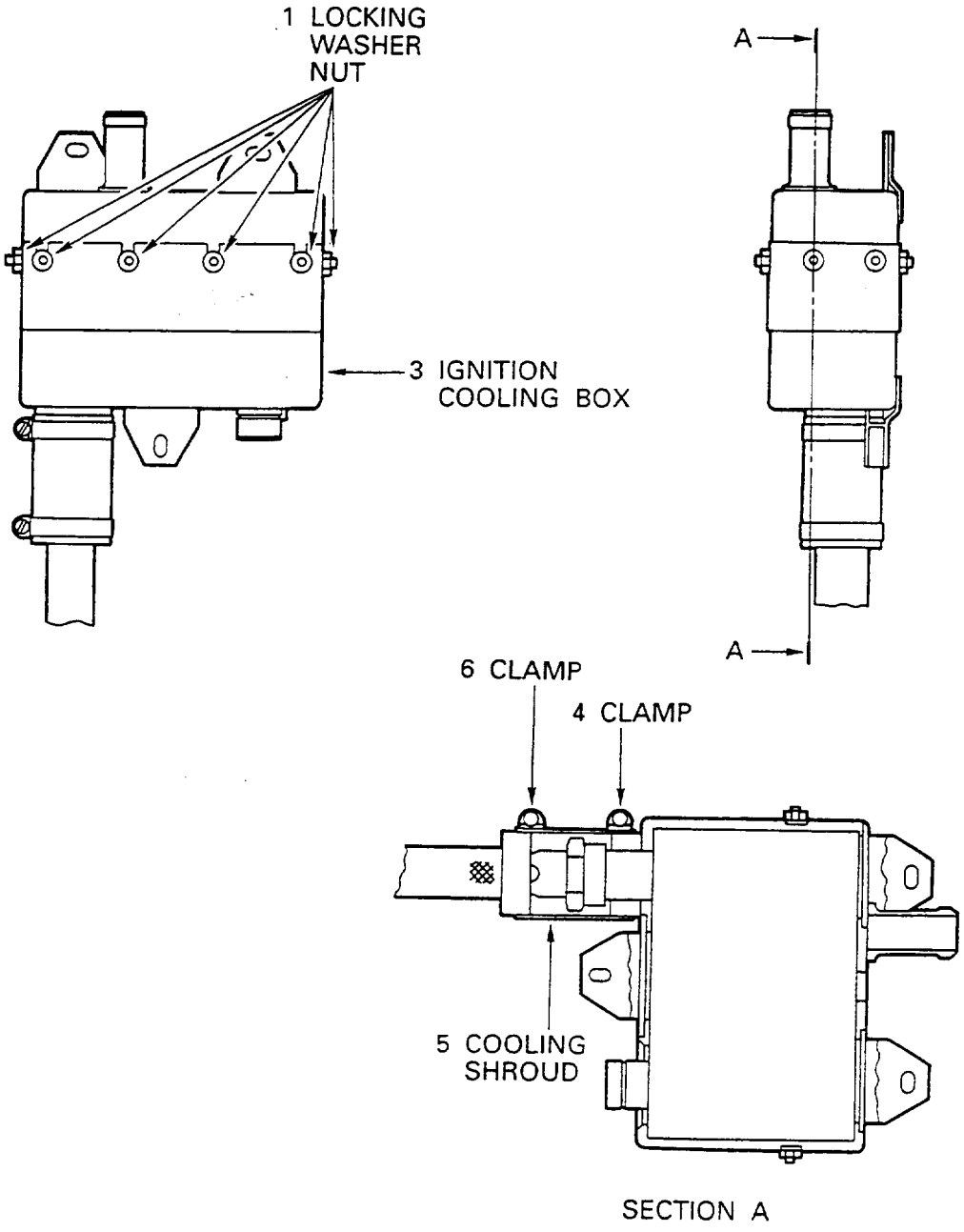
Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

Printed in Great Britain



Removal/Installation of the Ignition Cooling Box (V2500-D5)
Fig.8

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).



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Removal/Installation of the Ignition Cooling Box and the improved Cooling Shroud for Exciter End (V2500-A1, -A5 and -D5)
Fig.9

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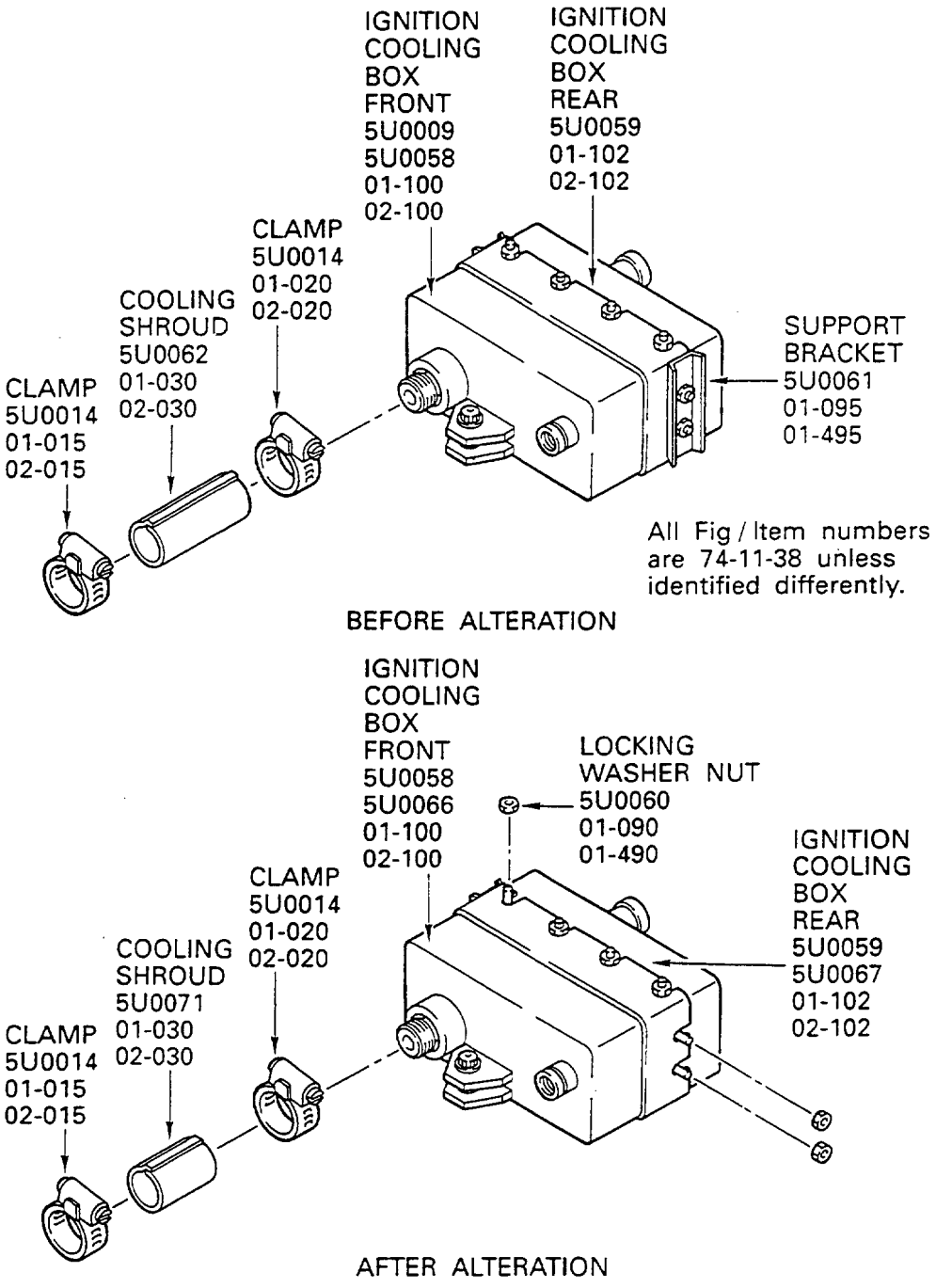

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before and after alteration for the Ignition Cooling System (V2500-A1, -A5 and -D5)
Fig.10

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

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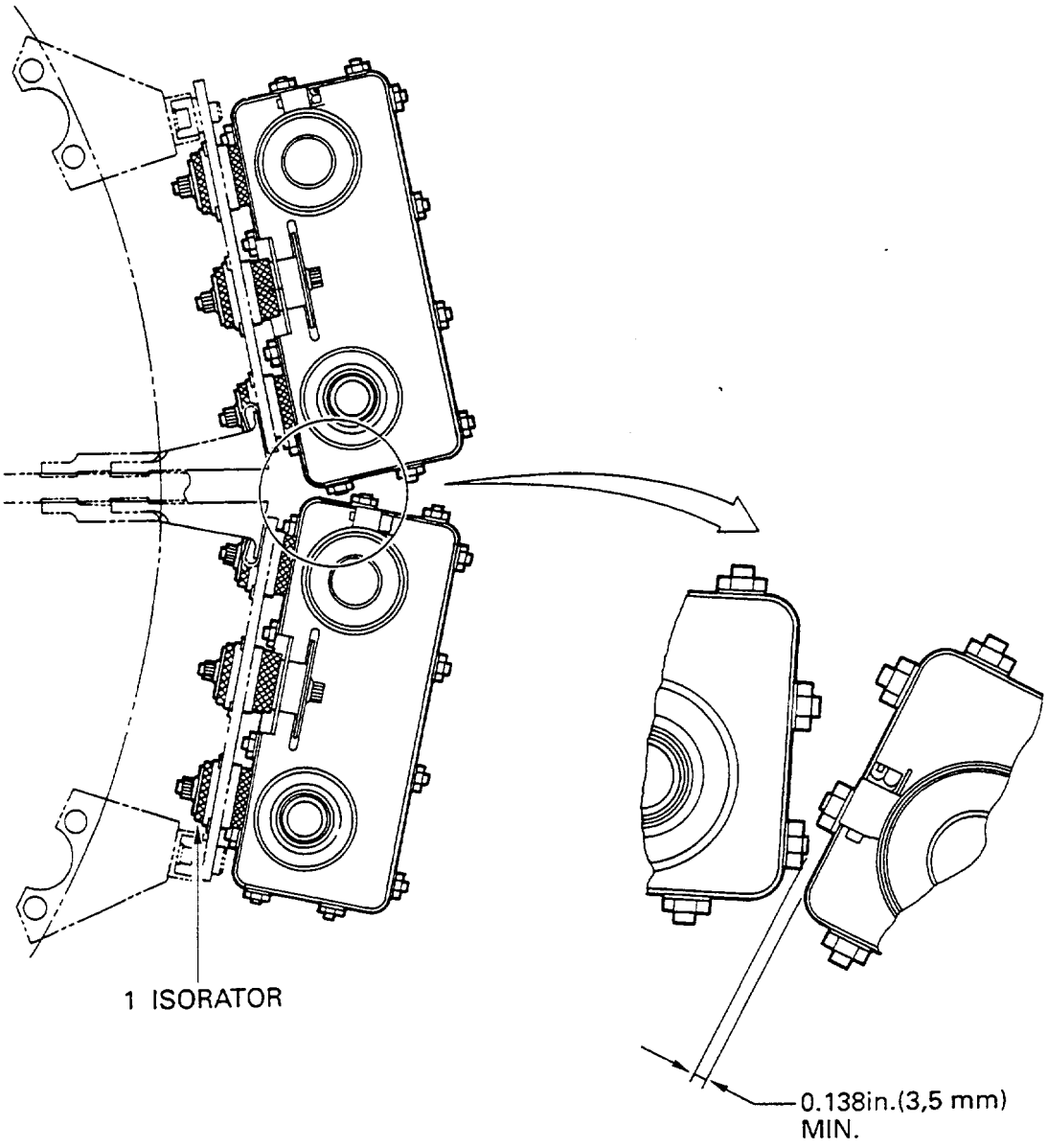

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Installation of the Cooling Box (V2500-A1 and -A5)
Fig.11

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

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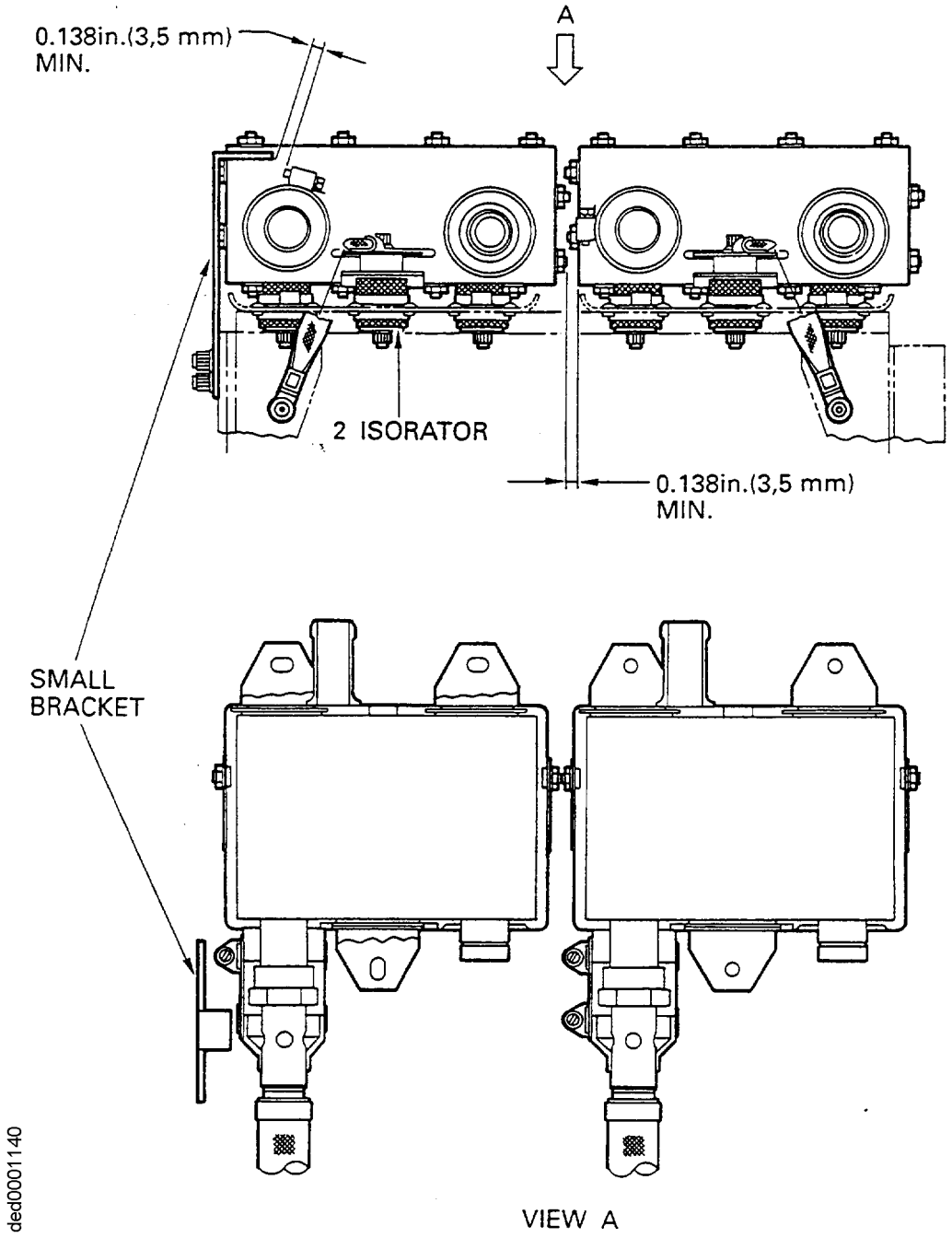

Installation of the Cooling Box (V2500-D5)
Fig.12

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated by this Bulletin:

(1) For V2500-A1 and -A5 Models

Vendor Kit Number is P/N 9043855.

(2) For V2500-D5 Model

Vendor Kit Number is P/N 9043856.

NOTE: For details, refer to Service Bulletin No. 74-48 issued by Unison Industries.

B. Parts affected by this Bulletin:

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
For V2500-A1 and V2500-A5 Models					
- (74-11-38)	-		.Bracket, Support	5U0061 (9048465) (01-095)	(F)(S2)
- (74-11-38)	-		.Bracket, Support	5U0061 (9048465) (01-495)	(F)(S2)
5U--71 (90-59165) (74-21-43)	1		.Shroud, Lead Exciter End	5U0062 (9048431) (01-030)	(A)(B)(C) (S1)
5U0071 (9059165) (74-21-43)	1		.Shroud, Lead Exciter End	5U0062 (9048431) (02-030)	(A)(B)(C) (S1)
5U0072 (9045405-7) (74-21-43)	1		.Lead, Ignition	5U0068 (9045405-5) (01-100)	(A)(B)(C) (S1)
5U0072 (9045405-7) (74-21-43)	1		.Lead, Ignition	5U0068 (9045405-5) (02-100)	(A)(B)(C) (S1)

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For V2500-D5 Model

-	-	.Bracket, Support	5U0061 (9048465) (01-095)	(F)(S2)
(74-11-38)				
-	-	.Bracket, Support	5U0061 (9048465) (01-495)	(F)(S2)
(74-11-38)				
5U0071 (9059165) (74-21-43)	1	.Shroud, Lead Exciter End	5U0062 (9048431) (01-030)	(A)(B)(C) (S1)
5U0071 (9059165 (74-21-43)	1	.Shroud, Lead Exciter End	5U0062 (9048431) (02-030)	(A)(B)(C) (S1)
5U0073 (9045405-6) (74-21-43)	1	.Lead, Ignition	5U0069 (9045405-4) (01-100)	(A)(B)(C) (S1)
5U0073 (9045405-6) (74-21-43)	1	.Lead, Ignition	5U0069 (9045405-4) (02-100)	(A)(B)(C) (S1)

C. Instruction/Disposition Code Statements

(A) New parts are currently available for sale.
(B) Old parts are no longer available fr sale.
(C) Return old parts to vendor (UNISON).
(F) Old part has affected on post-application of the Service Bulletin No. V2500-ENG-74-0002 Revision 1.
(S1) New parts coded (S1) must replace old parts coded (S1) in a COMPLETE SET per engine. Mixing of old and new parts is not permissible.
(S2) Discard the old part.

NOTE: Contact IAE's Spare Parts Sales Department for information concerning firm prices.

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

UNISON
SERVICE BULLETIN

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JP00627-2

Powerplant - Ignition System - Improved cooling.

1. PLANNING INFORMATION.

A. EFFECTIVITY.

This Service Bulletin applies to the following ignition leads, shroud assemblies, and cooling boxes used on IAE V2500-A1, -A5, -D5 engines.

Unison Part Number	IAE Part Number
Ignition Lead Assembly: 9045405-1, -2, -3, -4, -5	5U0006, 5U0043, 5U0052, 5U0069, 5U0068
Shroud Assembly, Plug End: 9045425-2, 9048448-1	Not Applicable
Shroud Assembly, Exciter End: 9045420-2, 9048453	Not Applicable
Exciter Cooling Box, Front: 9045428, 9054840	5U0009, 5U0055
Exciter Cooling Box, Rear: 9045429	5U0010

B. REASON FOR BULLETIN.

There have been cases of the ignition lead having reduced service life. This is mainly due to deterioration of rubber parts exposed to high temperatures at the igniter plug end. To increase cooling and extend service life, Unison has introduced new ignition leads, shroud assemblies, and exciter cooling boxes.

C. DESCRIPTION.

This service bulletin is of a product improvement nature, and provides an exchange program to exchange existing components through Unison's repair facility.

D. COMPLIANCE.

Category 5. Accomplish when the engine is disassembled sufficiently to afford access to the affected subassembly (i.e., modules, accessories, components, build groups) and to all affected spare subassemblies.

E. APPROVAL.

This service bulletin has been technically agreed by IAE.

F. MANPOWER.

After access is gained to the components, approximately 1.0 man-hour is required for removal and replacement of the components covered by this service bulletin.

G. MATERIAL AVAILABILITY.

Part numbers listed in MATERIAL INFORMATION are available from Unison Industries, 7575 Baymeadows Way, Jacksonville, Florida 32256.

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

H. TOOLING. No special tooling is required.

I. WEIGHT AND BALANCE. None.

J. ELECTRICAL LOAD DATA. Not affected.

K. REFERENCES.

IAE Service Bulletins V2500-ENG-74-0002 and V2500-ENG-74-0003
Unison Service Bulletin 74-43.
Unison Service Bulletin 74-46.

L. PUBLICATIONS AFFECTED.

CMM 74-11-38, Ignition Exciter 9045330-2.
CMM 74-21-43, Ignition Lead 9045405-1, -2, -3, -4, -5.

M. FAMILY TREE CHART OF MODIFICATION RELATIONSHIPS. Not applicable.

2. ACCOMPLISHMENT INSTRUCTIONS.

A. The old parts cannot be modified by the operator to obtain the new configuration. The old parts must be exchanged for a Retrofit Kit. Old parts (and Retrofit Kit) must be shipped as a complete set, and will have one ignition lead, one plug-end shroud assembly, one exciter-end shroud assembly, and one each front-and-rear-halves of exciter cooling box. Exchange using one of the two procedures below.

Option 1) Return the old set of parts to Unison with a no-charge purchase order for a replacement retrofit kit. Unison will then ship one retrofit kit for each old set received. Contact Unison, fax 904-739-4444 for specific return instructions.

Option 2) Unison will ship a retrofit kit before you return the old set. Unison must receive a copy of your no-charge purchase order with complete shipping instructions before the retrofit kit is shipped. Orders may be faxed to Unison at 904-739-4444.

Notes: Operators will be charged if all of the old parts are not returned to Unison as part of this exchange program. In addition, Unison will not be responsible for any shipping or handling charges associated with returning parts in any other manner than specified by Unison.

B. IDENTIFICATION.

Not applicable. New parts will have the new part number, and old parts modified to the new configuration will be remarked. All marking will be done by Unison Industries as part of the exchange program.

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

3. MATERIAL INFORMATION.

A. For V2500-A1 and -A5 Engines, the following material is required to accomplish this service bulletin.

NEW P/N	QTY PER ENGINE	EST. UNIT LIST PRICE	KEYWORD	OLD P/N	DISPOSITION
9043855	2	No Cost	Retrofit Kit	(see below)	(see below)
NOTE:	Each 9043855 Retrofit Kit contains one each of the following new parts.				
9045405-7 (IAE 5U0072)	- - -	- - -	Ignition Lead Assembly	9045405-1, -3, -5	Exchange
9048444 (IAE 5U0065)	- - -	- - -	Shroud, Plug End (2 each)	9045458, 9045459	Exchange
9059165 (IAE 5U0071)	- - -	- - -	Shroud , Exciter End	9045453, 9045454, 9048431	Exchange
9048457, (IAE 5U0066) or 9048467 (IAE 5U0058)	- - -	- - -	Exciter Cooling Box, Front	9045428, or 9054840	Exchange
9048462, (IAE 5U0067) or 9048466 (IAE 5U0059)	- - -	- - -	Exciter Cooling Box, Rear	9045429	Exchange
9045456-3 (IAE 5U0014)	- - -	- - -	Clamp (4 each)	9045456-2	Exchange
9048464 (IAE 5U0060)	- - -	- - -	Nut, Lockwasher Assembly (12 each)	9048464	Scrap

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

B. For V2500-D5 Engines, the following material is required to accomplish this service bulletin.

NEW P/N	QTY PER ENGINE	EST. UNIT LIST PRICE	KEYWORD	OLD P/N	DISPOSITION
9043856	2	No Cost	Retrofit Kit	(see below)	(see below)
NOTE:	Each 9043856 Retrofit Kit contains one each of the following new parts.				
9045405-6 (IAE 5U0073)	- - -	- - -	Ignition Lead Assembly	9045405-2, -4	Exchange
9048444 (IAE 5U0065)	- - -	- - -	Shroud, Plug End (2 each)	9045458, 9045459	Exchange
9059165 (IAE 5U0071)	- - -	- - -	Shroud, Exciter End	9045453, 9045454, 9048431	Exchange
9048457, (IAE 5U0066) or 9048467 (IAE 5U0058)	- - -	- - -	Exciter Cooling Box, Front	9045428, or 9054840	Exchange
9048462, (IAE 5U0067) or 9048466 (IAE 5U0059)	- - -	- - -	Exciter Cooling Box, Rear	9045429	Exchange
9045456-3 (IAE 5U0014)	- - -	- - -	Clamp (4 each)	9045456-2	Exchange
9048464 (IAE 5U0060)	- - -	- - -	Nut, Lockwasher Assembly (12 each)	none	Added

Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).