# P U B L I C A T I O N  T R A N S M I T T A L

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## V2500-A1/A5 SERIES PROPULSION SYSTEMS SERVICE BULLETIN



This document transmits the Revision 3 to Service Bulletin V2500-NAC-71-0280

Document History

Service Bulletin Revision Status

| | |
|---|---|
| Initial Issue | Jun. 1/00 |
| Revision 1 | Jul.17/00 |
| Revision 2 | Nov.13/00 |

Service Bulletin Revision 3

| Remove | Incorporate | Reason for change |
|---|---|---|
| All pages of the Service Bulletin. | Pages 1 to 14 of the Service Bulletin. | To revise the Concurrent Requirement, the Approval Statement and apply changes in Service Bulletin style. |

International Aero Engines

SERVICE BULLETIN

# NACELLE - POWER PLANT - BEARING ASSEMBLY, FORWARD ENGINE MOUNT - REPLACEMENT OF SNOUT BEARING BALL

Printed in Great Britain

## 1. Planning Information

### A. Effectivity

(1) Aircraft

(a) Airbus A319-131, -132 and -133

(b) Airbus A320-231, -232 and -233

(c) Airbus A321-131 and -231.

(2) Engine

(a) V2522-A5

(b) V2524-A5

(c) V2527M-A5

(d) V2500-A1

(e) V2527-A5

(f) V2527E-A5

(g) V2530-A5

(h) V2533-A5

(3) Forward Engine Mount Assembly

(a) Forward engine mount assemblies with serial numbers prior to 7415001.

### B. Concurrent Requirements

(1) For forward engine mounts which will or may be used on A5 engines - Service Bulletins V2500-NAC-71-0135 and V2500-NAC-71-0210 must be done prior to this Service Bulletin.

(2) For forward engine mounts which will only be used on A1 engines - It is
R recommended Service Bulletin V2500-NAC-71-0135 must be done prior to or at the same time as this Service Bulletin.

C. Reason

(1) Condition

Operators have found galling between the forward engine mount snout and the inner surface of the bearing assembly ball.

(2) Background

Galling can occur between the forward engine mount snout and the inner surface of the bearing assembly ball.

(3) Objective

To provide a bearing assembly ball less likely to cause galling on the forward engine mount snout.

(4) Substantiation

This change was substantiated by wear and fatigue tests.

(5) Effect of Bulletin on:

(a) Removal/Installation

Not affected.

(b) Disassembly/Assembly

Not affected.

(c) Cleaning

Not affected.

(d) Inspection/Check

Not affected.

(e) Repair

Affected.

(f) Testing

Not affected.

(6) Supplemental Information

None.

D. Description

The forward engine mount snout is inspected for wear. If wear is within allowable tolerance, the bearing assembly ball is replaced with a new beryllium/copper ball. If wear is not within allowable tolerance but within repair tolerance, the engine mount snout is machined and a new reduced inner diameter beryllium/copper ball is installed. If wear is beyond repair tolerance, a new forward engine mount main beam is required and the new production bearing assembly with beryllium/copper ball is installed.

E. Approval

R The technical content of this Service Bulletin has been approved under the
R authority of the EASA Design Organization Approval No.EASA.21J.031.

R The authorizing IAE document is EC 99VN601A.

F. Compliance

Category Code 6

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

G. Manpower

(1) In Service

Not applicable.

(2) At Overhaul

2.0 M/Hrs.

Total - 2.0 M/Hrs

NOTE: Man-hours estimate is provided for planning purposes only. No labor reimbursement is provided under the terms of this Service Bulletin offering.

H. Material Cost and Availability

The parts to accomplish this Service Bulletin are available from the manufacturer as individual line items.

Operators should send a charge purchase order for the applicable quantity of
R parts. Upon receipt of the purchase order Goodrich Aerospace will provide a delivery schedule.

Transmit purchase order to:

R Goodrich Aerospace

850 Lagoon Drive

Chula Vista, CA. 91910-2098 USA

Attn: Airline Account Manager - MZ 107A (Ref V2500-NAC-71-0280)

I. Tooling - Cost and Availability

None required.

J. Weight and Balance

(1) Weight Change

None.

(2) Moment arm

No effect.

(3) Datum

Engine Front Mount Centreline (Powerplant Station (PPS) 100).

K. Electrical Load Data

Not affected.

L. References

(1) IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA), Chapter/Sections 70-09-00 and 70-12-00.

(2) IAE Overhaul Processes and Consumable Index (PCI-V2500-1IA).

(3) IAE V2500-A1/A5 Forward Engine Mount Component Maintenance Manual (CMM-FM-V2500-1IA).

(4) IAE V2500 Engine Manual (E-V2500-1IA), Chapter/Sections 71-00-32.

(5) Airbus Aircraft Modifications 30414.

R (6) Internal Reference No.:

R Engineering Change No. 99VN601A.

M. Other Publications Affected

(1) IAE V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA, S-V2500-2IA), Chapter/Section 71-21-12.

(2) IAE V2500 Power Plant Illustrated Parts Catalog (PIP-V2500-1IA, PIP-V2500-2IA), Chapter/Section 71-21-12.

2. Material Information

A. Kits associated with this Service Bulletin:

None.

B. Parts affected by this Service Bulletin:

Applicability: For each V2500-A1/A5 engine mount to incorporate this Service Bulletin

The following parts are affected in the V2500-A1/A5 Power Plant Illustrated Parts Catalog (PIPC).

| FIG ITEM NO. | NEW PART NO. | PART TITLE | MAT | OLD PART NO. | INSTR DISP |
|---|---|---|---|---|---|
| 71-21-12 | | | | | |
| 01-010 | 740M0006 -501 | Fwd Engine Mount Assembly | - | 740-2010 -517 | (1E)(S1) |
| 01-010 | 740M0006 -503 | Fwd Engine Mount Assembly | - | 745-2010 -517 | (1E)(S2) |
| 01-010 | 745-2010 -503 | Fwd Engine Mount Assembly | - | 745-2010-501 | (A)(B) (1D)(S1) |
| 01-010 | 745M0006 -501 | Fwd Engine Mount Assembly | - | 745-2010-501 | (1D)(S2) (S3) |
| 01-140 | P24500-3 | Bearing Assy | - | P24500-1 | (A)(B) (1D)(S1) |
| 01-150 | P24501-3 | Ball | - | P24501-1 | (A)(B) (S1) |
| 01-140 | P24500-4 | Bearing Assy | - | P24500-1 | (A)(B) (1D)(S2) (S3) |

| FIG ITEM NO. | NEW PART NO. | PART TITLE | MAT | OLD PART NO. | INSTR DISP |
|---|---|---|---|---|---|
| 01-150 | P24501-4 | Ball | - | P24501-1 | (A)(B) (S2)(S3) |

Applicability: For each V2500-A1/A5 engine mount to incorporate this Service Bulletin

The following parts are affected in the V2500-A1/A5 Component Maintenance Manual:

| FIG ITEM NO. | NEW PART NO. | PART TITLE | MAT | OLD PART NO. | INSTR DISP |
|---|---|---|---|---|---|
| 71-21-12 | | | | | |
| 01-0160 | 740M0006 -501 | Fwd Engine Mount Assembly | - | 740-2010 -517 | (1E)(S1) |
| 01-160 | 740M0006 -503 | Fwd Engine Mount Assembly | - | 745-2010 -517 | (1E)(S2) |
| 01-160 | 745-2010 -503 | Fwd Engine Mount Assembly | - | 745-2010 -501 | (A)(B) (1D)(S1) |
| 01-160 | 745M0006 -501 | Fwd Engine Mount Assembly | - | 745-2010 -501 | (1D)(S2) (S3) |
| 01-500 | 745M0006-1 | Mount Beam Assy | - | 740-2011 -505 | (1D)(S2) (S3) |
| 01-260 | P24500-3 | Bearing Assy | - | P24500-1 | (A)(B) (1D)(S1) |
| 01-270 | P24501-3 | Ball | - | P24501-1 | (A)(B) (S1) |
| 01-260 | P24500-4 | Bearing Assy | - | P24500-1 | (A)(B) (1D)(S2) (S3) |
| 01-270 | P24501-4 | Ball | - | P24501-1 | (A)(B) (S2)(S3) |

C. Instruction/Disposition Code Statements

(A) New part is available.

(B) Old part will no longer be available.

(1D) For A1 or A5 applications, old part can be reworked to new part configuration.

(1E) For A1 applications only, old part can be reworked to new part configuration.

(S1) Parts coded S1 must be used as a complete set.

(S2) Parts coded S2 must be used as a complete set.

(S3) Parts coded S3 must be used as a complete set.

D. Materials Required to Incorporate this Service Bulletin:

| | |
|---|---|
| CoMat 01-438 | Solvent |
| CoMat 02-099 | Lint free cloth |
| --- | Aluminum oxide abrasive paper - various grits |

NOTE: To identify the consumable materials, refer to the Overhaul Processes and Consumable Index PCI-V2500-1IA.

3. Accomplishment Instructions

A. Pre-requisite Instructions

(1) For engine mounts which are or will be used on A5 engines, do Service Bulletin V2500-NAC-71-0135 and V2500-NAC-71-0210.

(2) For engine mounts which will be used only on A1 engines, do Service Bulletin V2500-NAC-71-0135.

CAUTION: DO NOT SEPARATE THE MAIN BEAM ASSEMBLY HALVES. THE MAIN BEAM ASSEMBLY HALVES ARE MACHINED AFTER THEY ARE ASSEMBLED. THE MAIN BEAM ASSEMBLY HALVES ARE DIFFICULT TO RE-ASSEMBLE PROPERLY. IF YOU SEPARATE THE MAIN BEAM ASSEMBLY HALVES, YOU MAY NOT BE ABLE TO USE THEM AGAIN.

NOTE: The instructions in this Service Bulletin assume the forward engine mount has been disassembled as instructed in the V2500 Forward Engine Mount Component Maintenance Manual, Chapter 71-21-12, page block 301.

B. Part 1 - Examine the Snout of the Main Bean Assembly.

WARNING: SOLVENT (COMAT 01-438) IS CLASSIFIED AS A HAZARDOUS MATERIAL WHICH MAY CAUSE INJURY OR ILLNESS IF NOT PROPERLY USED. THIS PRODUCT SHOULD BE USED ONLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC SAFETY AND HEALTH RECOMMENDATIONS. PRIOR TO USE OF THIS PRODUCT, CAREFULLY READ THE APPLICABLE "MATERIAL SAFETY DATA SHEET" AND FOLLOW ALL LISTED SAFETY AND HEALTH RECOMMENDATIONS.

(1) Clean the snout of the main beam assembly with a lint free cloth (CoMat 02-099) made moist with solvent (CoMat 01-438). Rub the surface dry before the solvent becomes dry.

(2) Remove the dry lube from the snout of the main beam assembly. Use dry non-metallic abrasive blasting method. Use 140 (U.S.A. standard) or finer mesh medium. Refer to the IAE V2500 Standard Practices /Processes Manual (SPP-V2500-1IA), TASK 70-12-02-120-501.

(3) Clean the snout of the main beam assembly with a lint free cloth (CoMat 02-099) made moist with solvent (CoMat 01-438). Rub the surface dry before the solvent becomes dry.

(4) Measure the minimum diameter of the main beam assembly snout. Refer to Figure 1.

(a) If the minimum snout diameter, dimension "X", is 2.119-2.1245 inch (53,82-53,96 mm), go to paragraph 3.B.(5).

(b) If the minimum snout diameter, dimension "X", is less than 2.119 inch (53,82 mm) but greater than 2.0985 inch (53,30 mm), do Parts 2, 3, 4, and 5 of this Service Bulletin.

(c) If the minimum snout diameter, dimension "X", is not greater than 2.0985 inch (53,30 mm), you must replace the main beam assembly with a new 740-2011-505 main beam assembly and then do Parts 3, 4, and 5 of this Service Bulletin.

(5) Blend out any worn areas on the snout to a 10:1 ratio with aluminum oxide abrasive paper. Do not make the wear deeper. Finish with 400 grit or finer aluminum oxide abrasive paper.

(6) Clean the snout of the main beam assembly with a lint free cloth (CoMat 02-099) made moist with solvent (CoMat 01-438). Rub the surface dry before the solvent becomes dry.

(7) Measure the minimum diameter of the main beam assembly snout. Refer to Figure 1.

(a) If the minimum snout diameter, dimension "X", is 2.119-2.1245 inch (53,82-53,96 mm) do Parts 3, 4, and 5 of this Service Bulletin.

(b) If the minimum snout diameter, dimension "X", is less than 2.119 inch (53,82 mm) but greater than 2.0985 inch (53,30 mm), do Parts 2, 3, 4, and 5 of this Service Bulletin.

(c) If the minimum snout diameter, dimension "X", is not greater than 2.0985 inch (53,30 mm), you must replace the main beam assembly with a new 740-2011-505 main beam assembly and then do Parts 3, 4, and 5 of this Service Bulletin.

C. Part 2 - Machine the Snout of the Main Beam

CAUTION: DO NOT SEPARATE THE MAIN BEAM HALVES. THE MAIN BEAM HALVES ARE MACHINED AFTER THEY ARE ASSEMBLED. THE MAIN BEAM HALVES ARE DIFFICULT TO RE-ASSEMBLE PROPERLY. IF YOU SEPARATE THE MAIN BEAM HALVES, YOU MAI NOT BE ABLE TO USE THEM AGAIN.

NOTE: To grind the main beam assembly snout the rework shop must have a standard grinder which can support the main beam, an angle plate attached to a magnetic plate on the grinder, and a comparator. The comparator must be used with a beam setup to obtain and check concentricity.

(1) Install the angle and magnetic plate on the standard grinder.

(2) Attach the main beam assembly on the angle plate through the main beam assembly-to-pylon attachment holes.

(3) Machine the main beam assembly snout to a diameter, dimension "X", of 2.0985-2.0995 inch (53,30-53,33 mm). Refer to Figure 1.

(4) Blend mismatch of machine cuts to a 10:1 ratio without making the cuts deeper. - Finish the surface to 32/RMS.

(5) Measure the minimum diameter of the main beam assembly snout. The diameter, dimension "X", must be 2.0985-2.0995 inch (53,30-53,33 mm). If the minimum diameter is less than 2.0985 inch (53,30 mm), you must replace the main beam assembly with a new 740-2011-505 main beam assembly.

CAUTION: DO NOT USE METAL STAMP OR VIBROETCH METHOD TO MAKE A MARK ON THE MAIN BEAM ASSEMBLY.

(6) Reidentify the main beam assembly as follows:

| For Main Beam Assemblies to be used with A1 or A5 Engines | |
|---|---|
| | |
| New Part Number | Old Part Number |
| | |
| 745M0006-1 | 740-2011-505 |

Use the electroetch method as instructed in the IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA), Chapter 70-09-00. Make the electoetch marks 0.002-0.003 inch (0,051-0,076 mm) deep. Do not use metal stamp or vibroetch methods to make a mark on the main beam assembly.

D. Part 3 - Modify the Bearing Assembly

(1) Remove the ball from the race. Discard the ball.

WARNING: THE P24501-3 AND P24501-4 BALLS ARE MADE FROM A COPPER-BERYLLIUM ALLOY. THESE ALLOYS CAN CAUSE A SPECIAL HAZARD DUE TO THE EXTREME TOXICITY OF BERYLLIUM DUST. THESE ALLOYS CONTAIN A SMALL PERCENTAGE OF BERYLLIUM (LESS THAN 2%), WHICH IS A HAZARD ONLY IF THE ALLOY IS HANDLED IN A WAY THAT MIGHT CREATE PARTICLES (DUST) THAT COULD BE BREATHED. EXAMPLES OF DUST GENERATING OPERATIONS INCLUDE POLISHING, SANDING, GRINDING, BRAZING, AND WELDING. THE SAME DUST WARNING APPLIES TO REBUILD OF COMPONENTS CONTAINING BERYLLIUM ALLOYS IF THERE HAS BEEN WEAR AND METAL POWDER WAS CREATED, STOP WORK AND SEAL THE PART WITH PLASTIC OR OTHER DUST PROOF COVERING. THEN CALL YOUR ENVIRONMENTAL SAFETY AND HEALTH DEPARTMENT FOR PROPER HANDLING INFORMATION.

(2) Install a new ball in the race.

(a) For bearing assembly to be used on main beam assembly with part number 740-2011-505, install a P24501-3 ball in the race.

(b) For bearing assembly to be used on main beam assembly with part number 745M0006-1, install a P24501-4 ball in the race.

(c) Make sure the ball can rotate freely in the race.

CAUTION: DO NOT USE METAL STAMP OR VIBROETCH METHODS TO MAKE A MARK ON THE BEARING ASSEMBLY.

(3) Reidentify the bearing assembly as follows:

| If a P24501-3 ball is installed: | |
|---|---|
| | |
| New Part Number | Old Part Number |
| | |
| P24500-3 | P24500-1 |

| If a P24501-4 ball is installed: | |
|---|---|
| | |
| New Part Number | Old Part Number |
| | |
| P24500-4 | P24500-1 |

Use the electroetch method as instructed in the IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA), Chapter 70-09-00. Make the electroetch marks 0.002-0.003 inch (0,051-0,076 mm) deep. Do not use metal stamp or vibroetch methods to make a mark on the bearing assembly.

E. Part 4 - Install the Bearing Assembly on the Main Beam.

(1) For 740-2011-505 main beams, install the P24500-3 bearing assembly. Refer to the V2500 Forward Engine Mount Component Maintenance Manual, Chapter 71-21-12, page block 301.

(2) for 745M0006-1 main beams, install the P24500-4 bearing assembly. Refer to the V2500 Forward Engine Mount Component Maintenance Manual, Chapter 71-21-12, page block 301.

F. Part 5 - Re-identify the Forward Engine Mount Assembly.

CAUTION: DO NOT USE METAL STAMP OR VIBROETCH METHODS TO MAKE A MARK ON THE ENGINE MOUNT:

(1) Change the identification of the forward engine mount assembly. Use the electroetch method. Refer to the IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA). Make the electroetch marks 0.002-0.003 inch (0,051-0,076 mm) deep. Do not use metal stamp or vibroetch methods to make a mark on the engine mount.

(a) Make "XXXX" marks over the old part number.

(b) Re-identify the forward engine mount assembly as follows

| For Engine Mounts to be used with A5 Engines | |
|---|---|
| | |
| For forward engine mount assembly with 740-2011-505 main beam assembly | |
| | |
| New Part Number | Old Part Number |
| | |
| 745-2010-503 | 745-2010-501 |
| | |
| For forward engine mount assembly with 745M0006-1 main beam assembly | |
| | |
| New Part Number | Old Part Number |
| | |
| 745M0006-501 | 745-2010-501 |

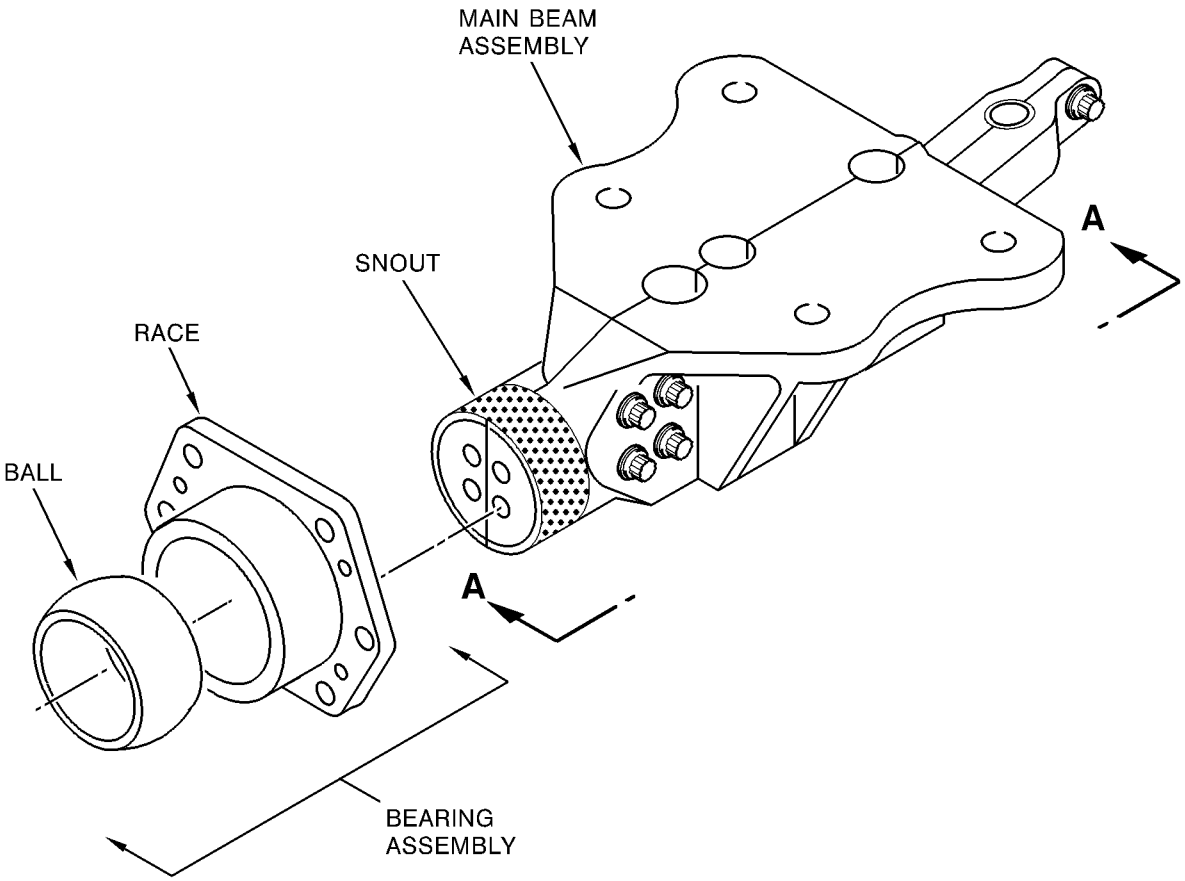
| For Engine Mounts to be used with A1 Engines | |
|---|---|
| | |
| For forward engine mount assembly with 740-2011-505 main beam assembly | |
| | |
| New Part Number | Old Part Number |
| | |
| 740M0006-501 | 740-2010-517 |

| For forward engine mount assembly with 745M0006-1 main beam assembly | |
|---|---|
| | |
| New Part Number | Old Part Number |
| | |
| 740M0006-503 | 740-2010-517 |

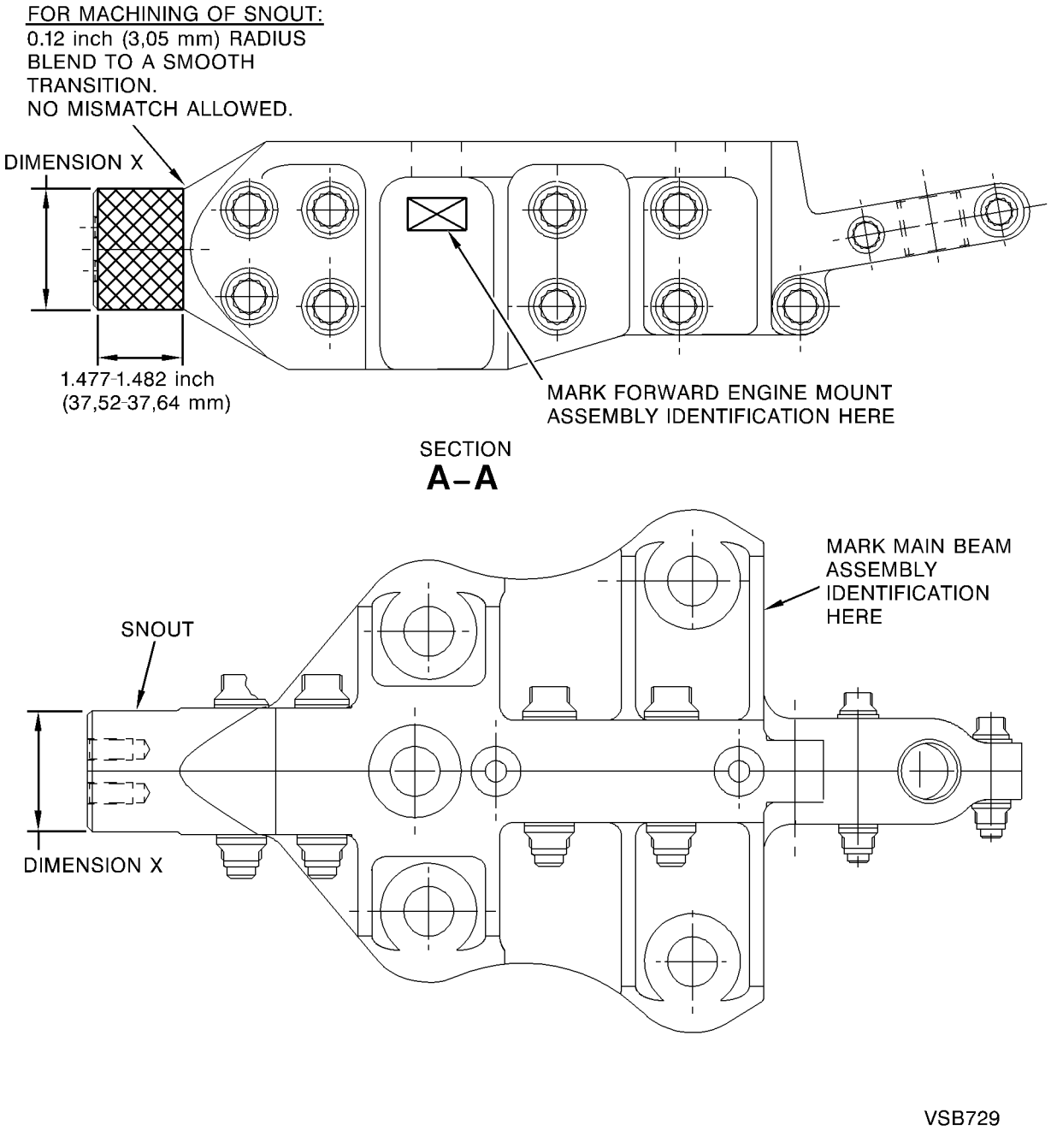
(c) Mark Service Bulletin number V2500-NAC-71-0280 on the mount assembly near the new part number. Use the electroetch method as instructed in the IAE V2500 Standard Practices/Processes Manual (SPP-V2500-1IA) chapter 70-09-00. Make the electroetch marks 0.002-0.003 inch (0,051-0.076 mm) deep. Do not use metal stamp or vibroetch methods to make a mark on the engine mount.

G. Post-Requisite Instructions

None.




Forward Engine Mount Assembly Re-work
Figure 1 (sheet 1)




Forward Engine Mount Assembly Re-work
Figure 1 (sheet 2)