International Aero Engines

SERVICE BULLETIN

ENGINE - INCORPORATE ROOT SEALING STRIPS ON STAGE 1.5, 2.0 AND 2.5 LPC BLADES - CATEGORY CODE 6 - MOD.ENG-72-0017

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500-A1 Engine, Serial No.0014 through V0019

B. Reason

(1) Condition

Existing Stages 1.5, 2.0 and 2.5 Blades have inadequate sealing features.

(2) Background

Existing configuraton may cause undesirable air flow circulation.

(3) Objective

To incorporate the improved blades with sealing strips to prevent air flow circulation.

(4) Substantiation

Substantiation is not required.

(5) Effect of Bullletin on the workshop procedure:

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

(6) Supplemental Information

(a) The Cleaning Procedure is different because the Post-Service Bulletin parts have the Sealing Strips.

(b) Inspection/Check procedure is different because the Post-Service Bulletin have the Sealing Strips.

(c) New Repair procedure will be prepared to give replacement repairs for the Sealing Strips.

C. Description

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

(a) An Additional Sealing Strip is bonded to the Stage 1.5, 2.0 and 2.5 Blades LPC to prevent circulation of air flow. Refer to Figure 1.

(2) Existing Blades on Stage 1.5, 2.0 and 2.5 must be replaced or reworked.

(3) The new Blades on Stage 1.5, 2.0 and 2.5 will be available for future replacement purposes.

(4) These changes must be accomplished as a complete set per engine.

D. Approval

The Part Number Change and/or part modification desvribed in Sections 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.

E. Compliance

Category Code 6

Accomplish when the subassembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected parts 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) In shop	TOTAL 10 hours 54 minutes
(a) To gain access	Not applicable (Parts are accessible at overhaul)
(b) To embody	
(i) To prepare the blades for rework..	3 hours 24 minutes
(ii) To rework the blades ..	7 hours 30 minutes

Total 10 hours 54 minutes

(c) To return part to overhaul condition Not applicable

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

I. Weight and Balance

(1) Weight change .. .. .. None

(2) Moment arm .. .. .. No effect

(3) Datum .. .. Engine front mount centerline (Powerplant Station P.P.s 100)

J. Electrical Load Data

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

K. References

(1) Internal Reference No.

EC88VJ144

EC88VJ144A

(2) Other References

(1) V2500 IAE Service Bulletin No.V2500-ENG-72-001 Engine - Remove material from the leading edge of Stage 2.0 Compressor Blades to improve clearance.

(2) V2500 Engine Material, 72-32-80, Disassembly and Assembly.

(3) V2500 Standard Practices/Processes Manual. 70-36-02, Bonding and Moulding, 70-09-00 Marking of Parts.

(4) V2500 Engine Illustrated Parts Catalog.

(5) V2500 Overhaul Processes and Consumable Index.

L. Other Publications Affected

(1) V2500 IAE Service Bulletin NoV2500-ENG-72-0001 Engine - Remove material from the leading edge of Stage 2.0 Compressor Blades to improve clearance.

(2) V2500 Engine Manual, 72-32-80, Disassembly and Assembly.

(3) V2500 Standard Practices/Processes Manual, 70-36-02, Bonding and Moulding, 70-09-00 Marking of Parts.

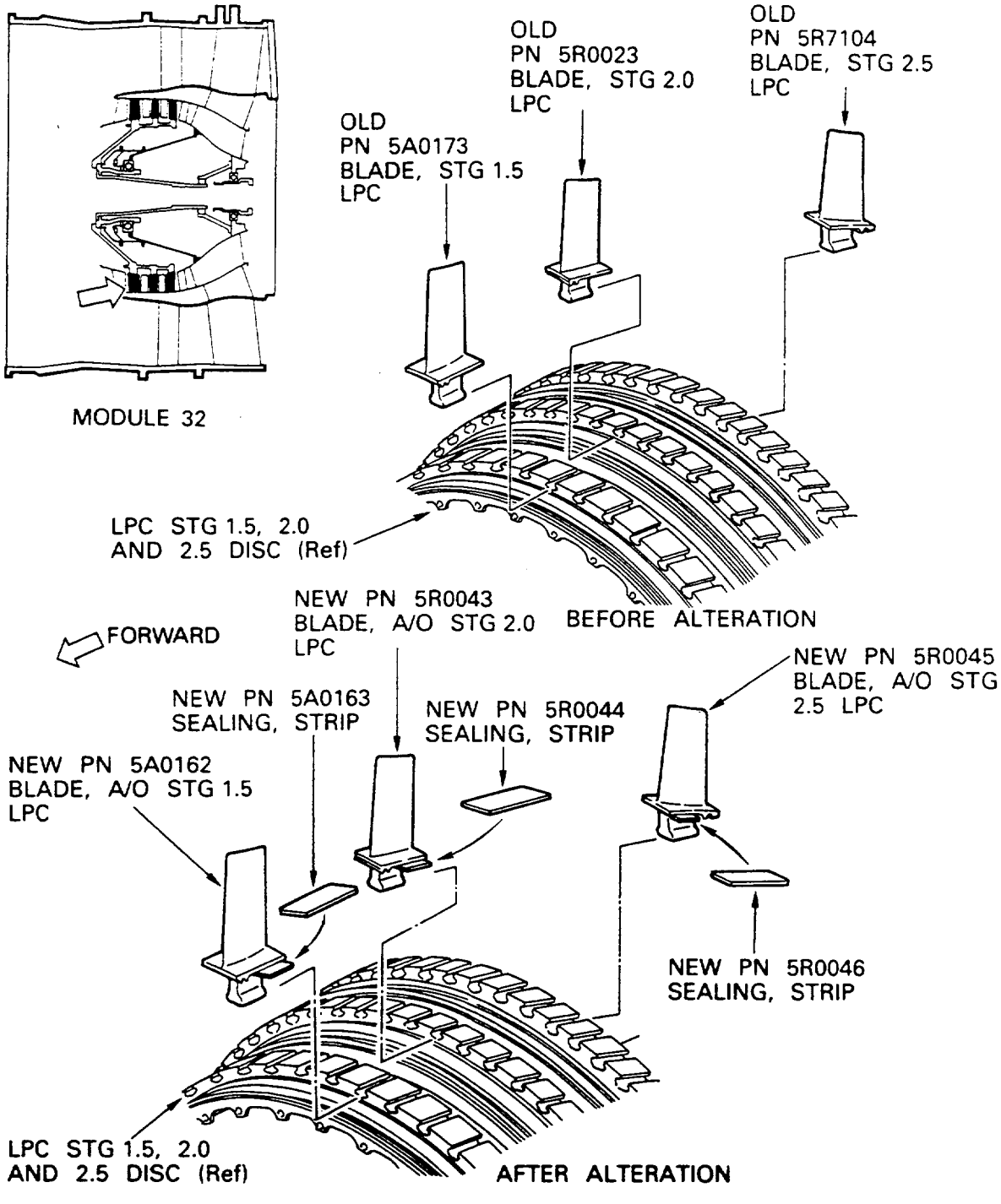
(4) V2500 Engine Illustrated Parts Catalog.

(5) V2500 Overhaul Processes and Consumables Index.

L. Other Publications Affected

(1) V2500 Engine Illustrated Parts Catalog, Chapter 72-32-82, Figure 01, will be revised to add the new parts.

(2) V2500 Engine Manual, Chapter 72-32-82, Cleaning, Inspection/Check and Repair, will be revised to add the new parts.



LP Compressor Stage 1.5, 2.0 and 2.5 blades - Before and after alteration
Fig.1

2. Accomplishment Instructions

A. Rework Instructions

WARNING: ALWAYS OBEY THE SAFETY PRECAUTIONS GIVEN IN THE STANDARD PRACTICES/PROCESSES MANUAL, 70-36-02.

CAUTION: 1. AFTER PREPARATION THE MATING SURFACES MUST BE CLEANED AND MUST NOT BE TOUCHED BY HAND, TO PREVENT CONTAMINATION.

2. BONDING MUST BE DONE IMMEDIATELY AFTER THE SURFACE PREPARATION. THIS IS VERY IMPORTANT.

(1) Rework each of 5A0173, 5R0023 and 5R7104, Blades, Stage 1.5, 2.0 and 2.5 LPC (72-32-82, Fig/Item No.01-400, 01-250 and 01-100).

Procedure	Supplementary Information
(a) Degrease of the mating surfaces on each of 5A0173, 5R0023 and 5R7104 Blades and each of new 5A0163, new 5R0044 and new 5R0046 Sealing Strips, with CoMat 01-076, methylethyketone CH3COCH5, and CoMat 02-009, lint free cloth	Refer to Figure 2 Sheets 1 and 2, Figure 3 Sheets 1 and 2, and Figure 4 Sheets 1 and 2. Refer to Overhaul Processes and Consumables Index
(b) Hand clean the mating surfaces on each of 5A0173, 5R0023 and 5R7104 blades, and each of new 5A0163, new 5R0044 and new 5R0046, sealing strips, with CoMat 05-016, garnet paper or CoMat 05-017, garnet paper	Refer to Figure 2 Sheets 1 and 2, Figure 3 Sheets 1 and 2 and Figure 4 Sheets 1 and 2. Refer to Overhaul Processes and Consumables Index
(c) Do step (a) again to degrease and remove contaminants	
(d) Let the surfaces dry for 25 minutes at room temperature	
(e) Apply a thin layer of CoMat 08-014, primer for Silcoset 151, 152, 153 to the mating surface on each of 5A0173, 5R0023 and 5R7104, blades with a brush. Dry in air for 30 minutes	Refer to Figure 2 Sheets 1 and 2, Figure 3 Sheets 1 and 2, and Figure 4 Sheets 1 and 2. Refer to Overhaul Processes and Consumable Index

NOTE: 1. Do not apply this step to the mating surface on each of new 5A0163, new 5R0044, and new 5R0046, sealing strips.

2. The primer must be applied immediately, or not longer than 8 hours.

(f) Apply CoMat 08-013, cold curing silicone compound (Silcoset 152), to each mating surface on each of 5A0173, 5R0023 and 5R7104, blades, and each of new 5A0163, new 5R0044 and new 5R0046, sealing strips	Refer to Figure 2 Sheets 1 and 2, Figure 3 Sheets 1 and 2 and Figure 4 Sheets 1 and 2. Refer to Overhaul Processes and Consumable Index
(g) Install each of new 5A0163, new 5R0044 and new 5R0046, sealing strips to each of 5A0173, 5R0023 and 5R7104, blades immediately, or not longer than 3 minutes, after CoMat 08-013, cold curing silicone compound (Silcoset 152) is applied. Make sure that the compound can be seen around the sealed surfaces	Refer to Figure 2 Sheets 1 and 2, Figure 3 Sheets 1 and 2 and Figure 4 Sheets 1 ans 2

NOTE: 1. If necessary, clamp the assembly together.

2. The inclusion of air in the bonding surface shall be prevented and the excess compound shall be removed.

(h) Cure the cold curing silicon compound (Silcoset 152) at 68 deg.F. (20 deg.C.) for 48 hours. Do not apply a load during this time

NOTE: The parts can be touched after 2 hours.

(i) Inspect for correct bonding	Refer to Figure 2 Sheet 2, Figure 3 Sheets 2 and 3 and Figure 4 Sheets 2 and 3 requirements

NOTE: Make sure that there are no evidence of foreign inclusion, declamination, soft spot and lack of compound.

(j) Renumber with vibro-peen adjacent to each existing part number of the blades, Stage 1.5, 2.0 and 2.5 LPC as follows:	Refer to Figure 2 Sheet 2, Figure 3 Sheets 2 and 3 Figure 4 Sheets 1, 2 and 3. Refer to Standard Practices/Processes Manual 70-09-00, Marking of Parts:	
Blade, Stage 1.5 LPC	Existing	Renumber
	5A0173	Assy 5A0162
Blade, Stage 2.0 LPC	Existing	Renumber
	5R0023	Assy 5R0043
Blade, Stage 2.5 LPC	Existing	Renumber
	5R7104	Assy 5R0045

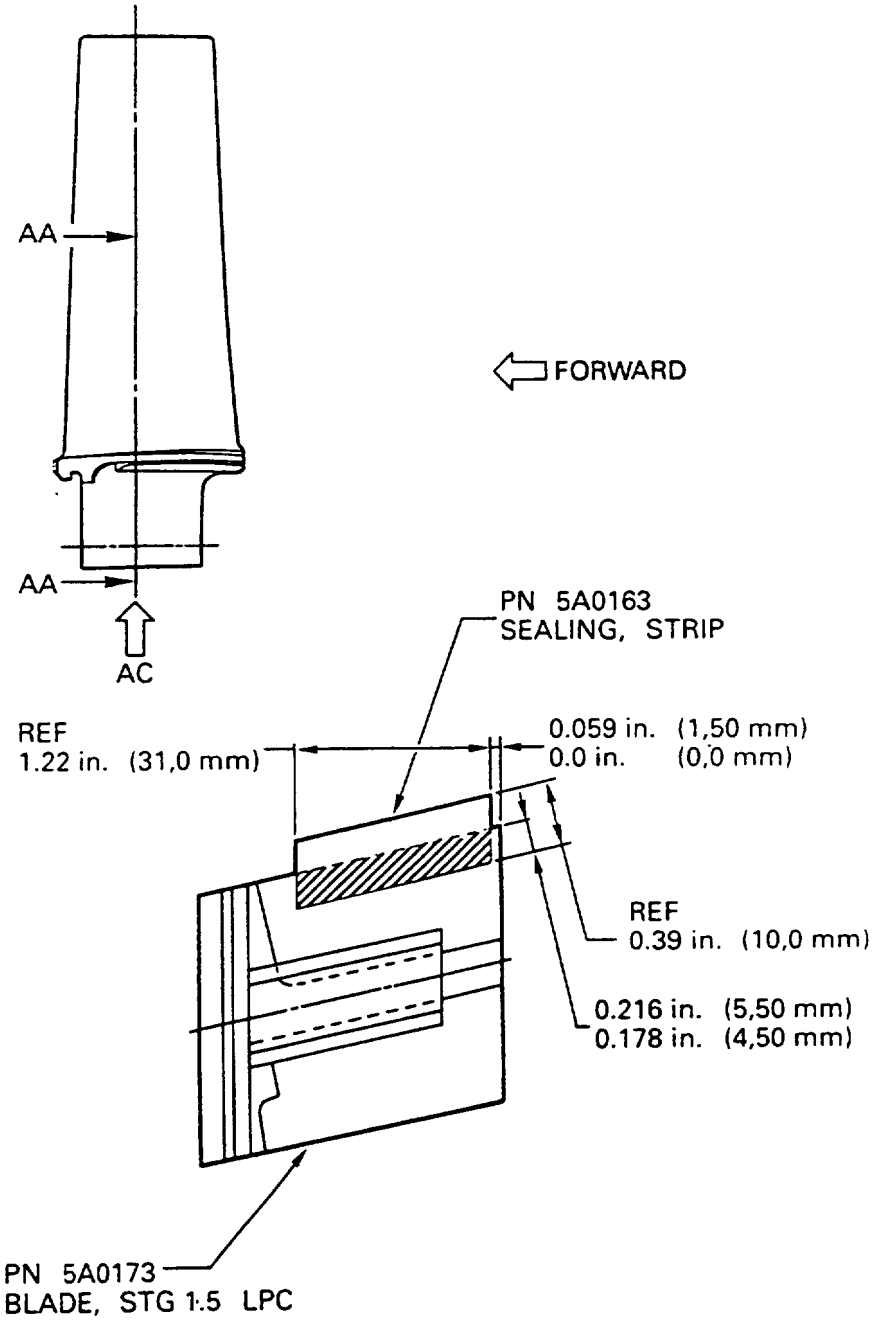
B. Fitment Instructions

(1) New 5A0162, blade, assy Stage 1.5 LPC, new 5R0043, blade, assy Stage 2.0 LPC and new 5R0045, blade, assy Stage 2.5 LPC are interchangeable as a complete set with existing blades, Stage 1.5, 2.0 and 2.5 LPC.

Install new 5A0162, new 5R0043 and new 5R0045 by the approved procedures in the Engine Manual , 72-32-80, Assembly (Refer to 1.K.(2).

C. Recording Instructions

(1) A record of accomplishment is necessary.



VIEW ON AC

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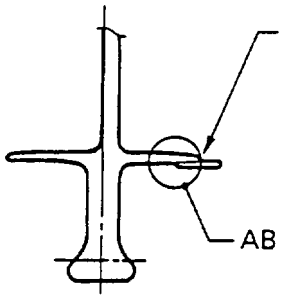
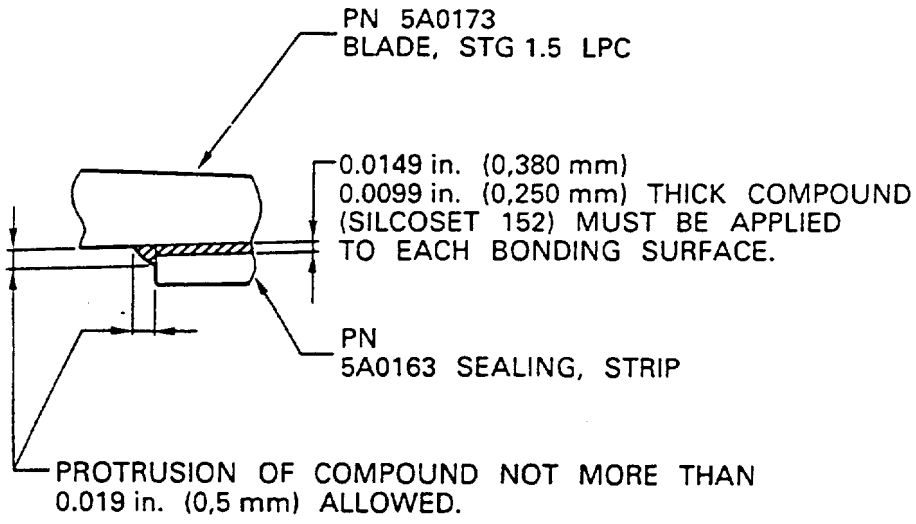
Rework of the blades, Stage 1.5 LPC
Fig.2 (Sheet 1 of 3)

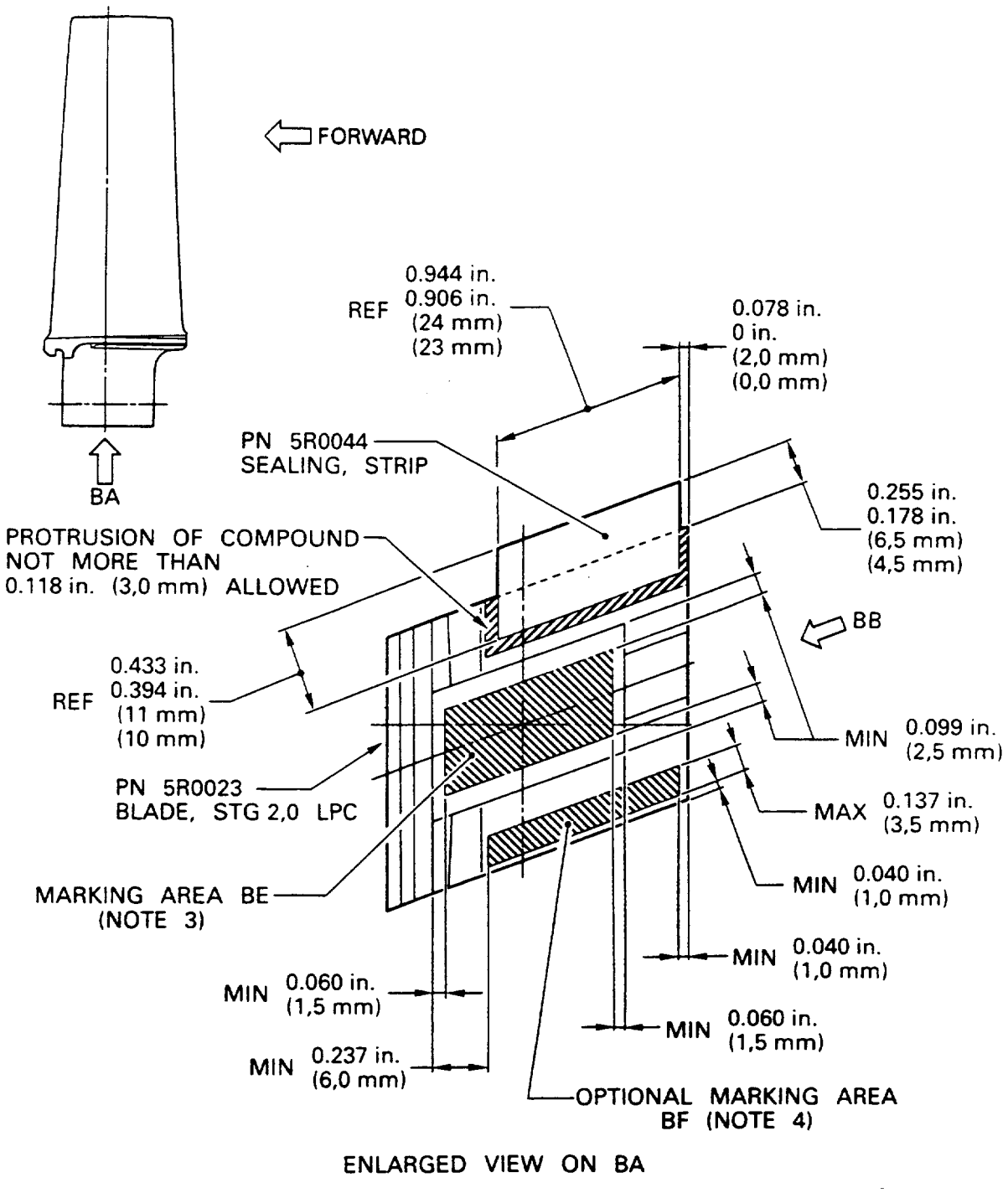


SECTION AA



DETAIL AB

Rework of the blades, Stage 1.5 LPC
FIG.2 (Sheet 2 of 3)



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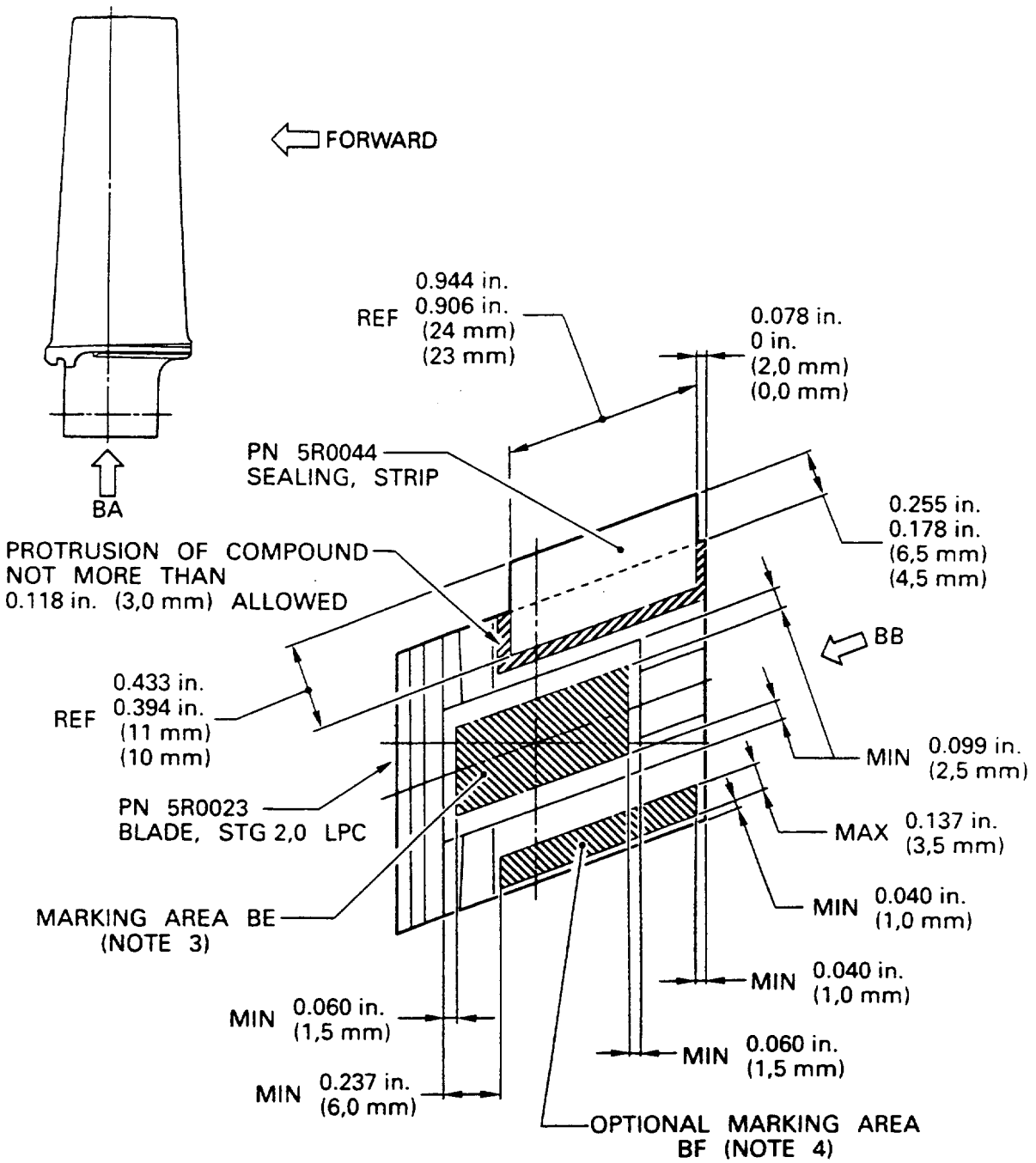
Rework of the blades, Stage 1.5 LPC
Fig.2 (Sheet 3 of 3)



ENLARGED VIEW ON BA

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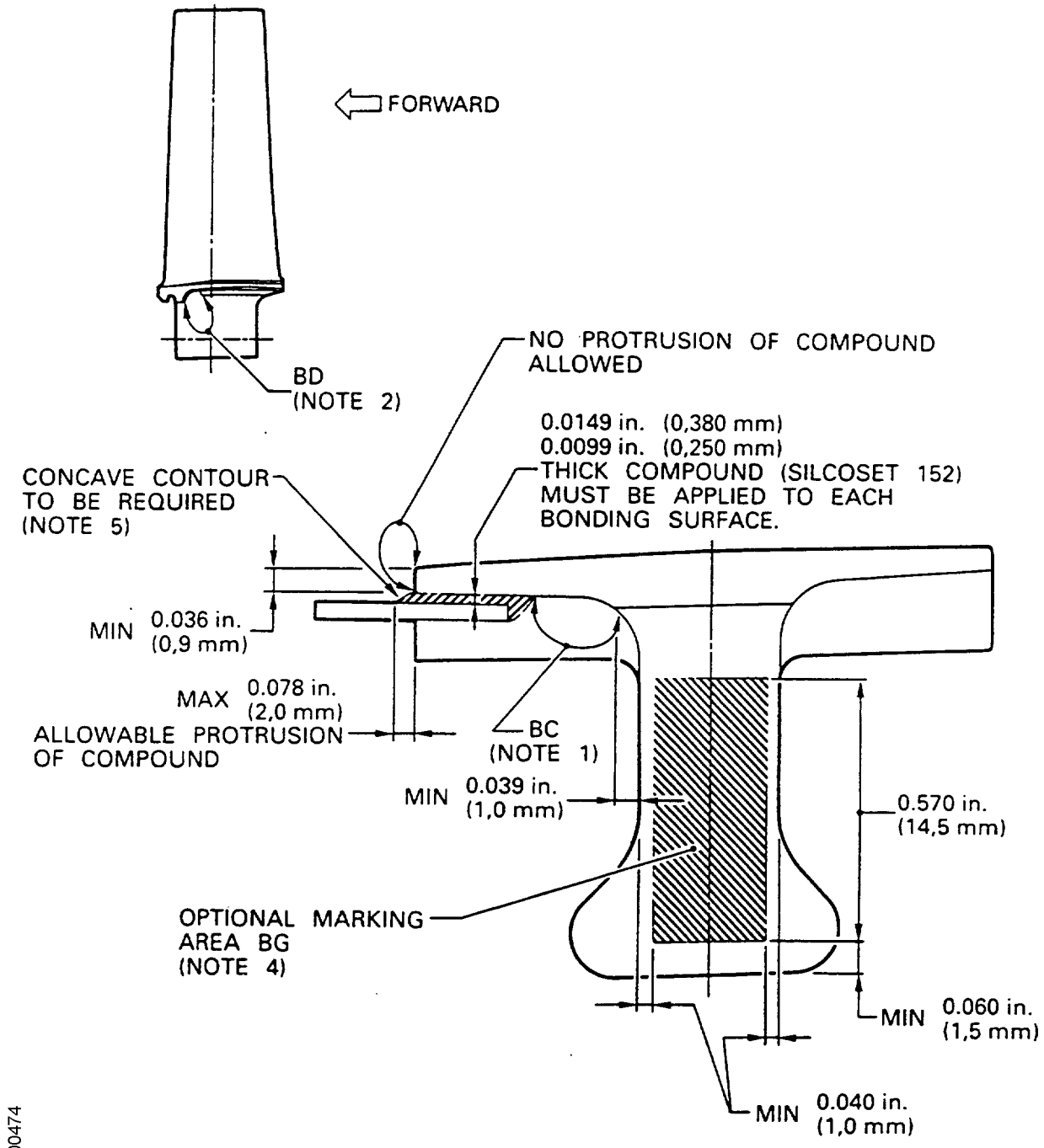
Rework of the blades, Stage 2.0 LPC
Fig.3 (Sheet 1 of 3)



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ENLARGED VIEW ON BB (ROTATIONAL)

Rework of the blades, Stage 2.0 LPC
Fig.3 (Sheet 2 of 3)

NOTE: 1 MAX 0.0098 in. (0,25 mm) PROTRUSION OF COMPOUND IS ALLOWABLE ON ALL SURFACES OF SEALING, STRIP AND AT BC.

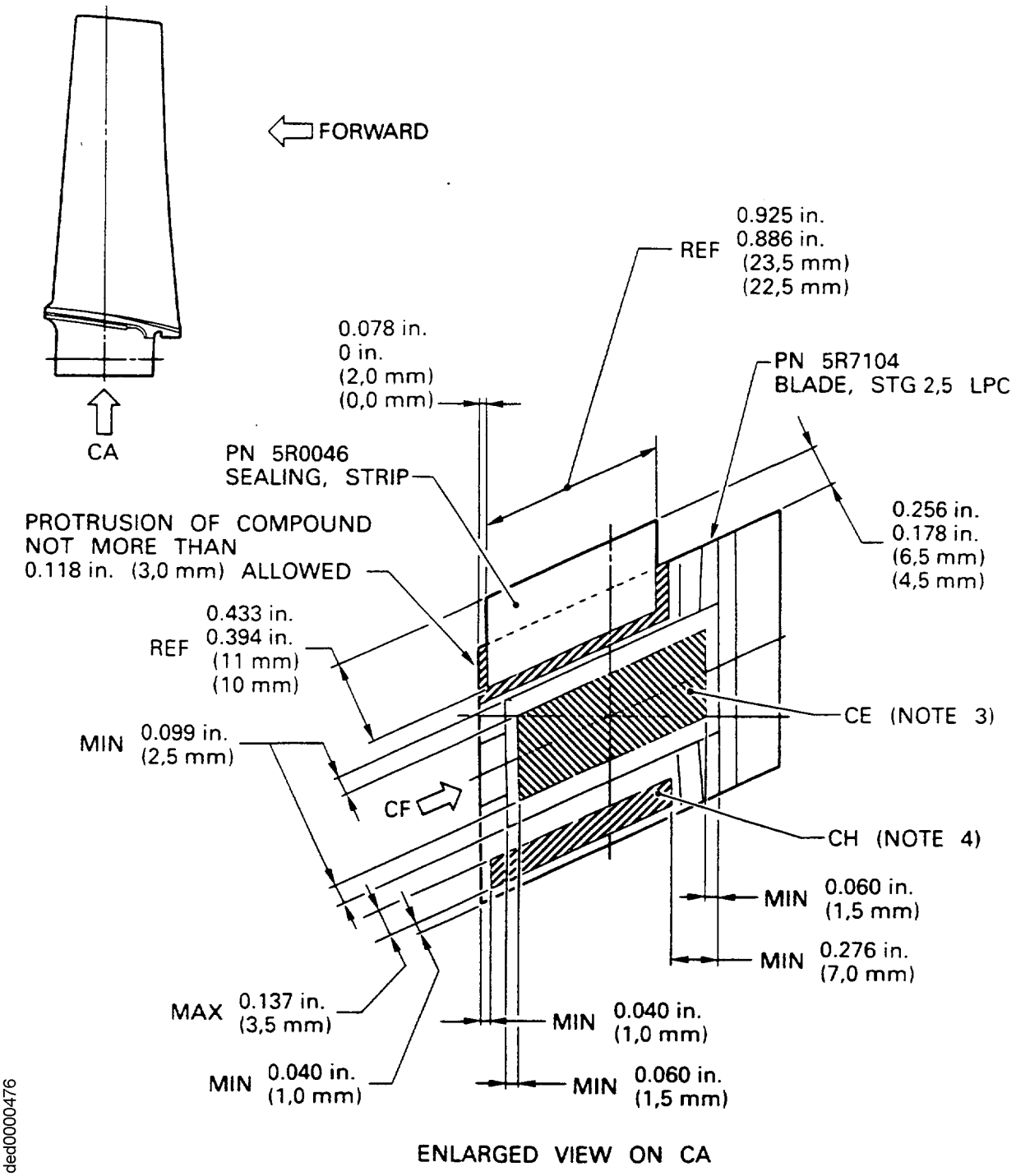
2 MAX 0.0098 in. (0,25 mm) PROTRUDED COMPOUND THICKNESS IS ALLOWABLE AT BD.

3 MARK NEW PN 5R0045 FOLLOWED BY 'ASSY' AT BE BY VIBRO-PEEN ADJACENT TO EXISTING PART NUMBER.

4 IF MARKING AREA BE DOES NOT HAVE SUFFICIENT SPACE TO MARK, AREAS BF AND BG CAN BE USED.

5 VISUALLY INSPECT FOR CORRECT BONDING BETWEEN BLADE AND SEALING STRIP WITH BEND OF SEALING STRIP BY APPROX. 45 DEGREE.

Rework of the blades, Stage 2.0 LPC
Fig.3 (Sheet 3 of 3)



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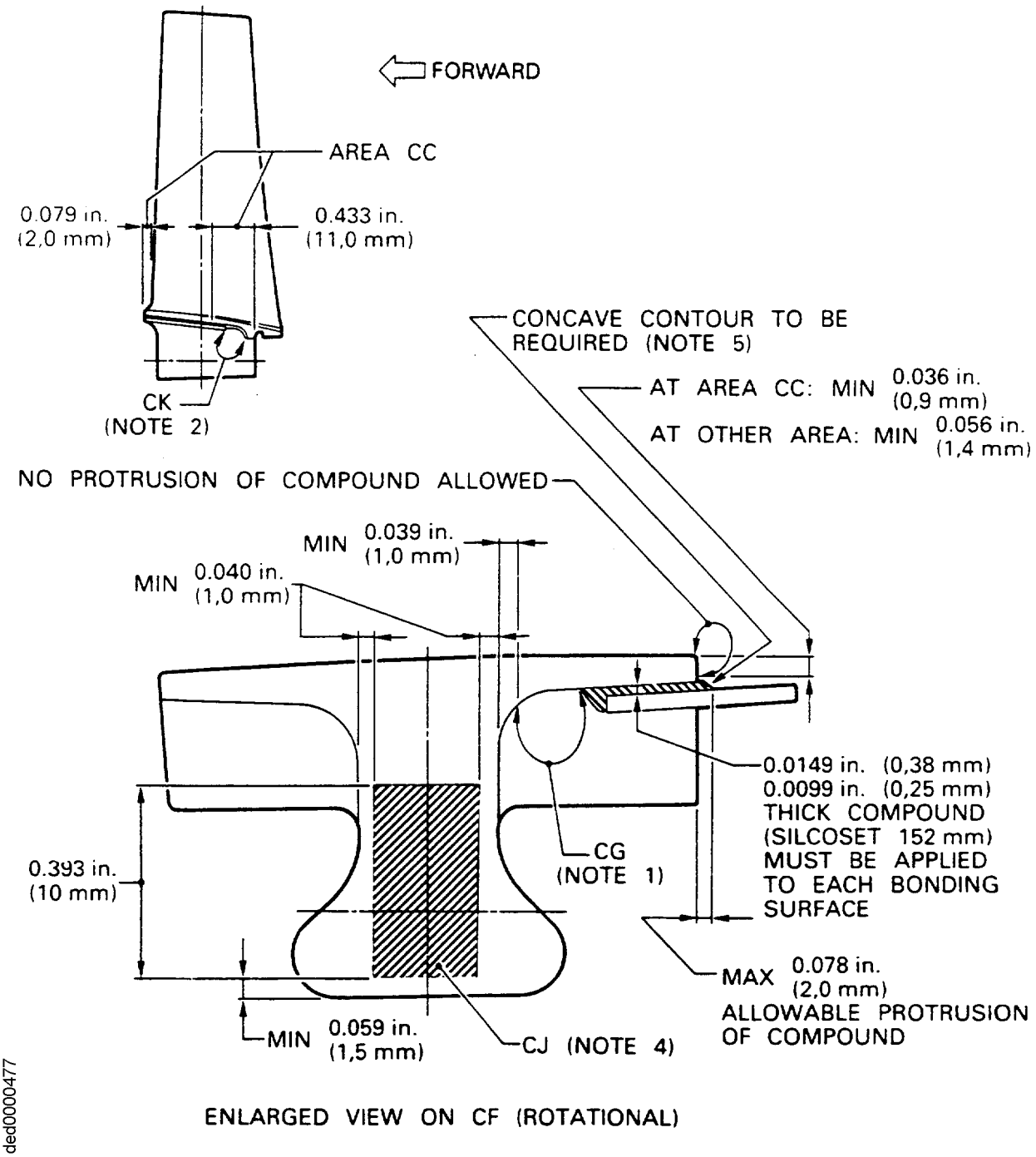
Rework of the blades, Stage 2.5 LPC
Fig.4 (Sheet 1 of 3)



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Rework of the blades, Stage 2.5 LPC
Fig.4 (Sheet 2 of 3)

NOTE: 1 MAX 0.0098 in. (0,25 mm) PROTRUSION OF COMPOUND IS ALLOWABLE ON ALL SURFACES OF SEALING, STRIP AND AT CG.

2 MAX 0.0098 in. (0,25 mm) PROTRUDED COMPOUND THICKNESS IS ALLOWABLE AT CK.

3 MARK NEW PN 5R0045 FOLLOWED BY 'ASSY' AT CE BY VIBRO-PEEN ADJACENT TO EXISTING PART NUMBER.

4 IF MARKING AREA CE DOES NOT HAVE SUFFICIENT SPACE TO MARK, AREAS CH AND CJ CAN BE USED.

5 VISUALLY INSPECT FOR CORRECT BONDING BETWEEN BLADE AND SEALING STRIP WITH BEND OF SEALING STRIP BY APPROX. 45 DEGREE.

Rewowk of the blades, Stage 2.5 LPC
Fig.4 (Sheet 3 of 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
5A0162 (72-32-82)	52	389.00	Blade, A/O Stage 1.5 LPC	5A0173 (01-400)	(A)(B)(S1) (S2)(1D)
5A0163 (72-32-82)	52	2.00	Sealing strip	- (01-415)	(A)(2D)
5R0043 (72-32-82)	68	316.00	Blade, A/O Stage 2.0 LPC	5R0023 (01-250)	(A)(B)(S1) (S1) (1D)
5R0044 (72-32-82)	68	2.00	Sealing strip	- (01-260)	(A)(2D)
5R0045 (72-32-82)	70	303.00	Blade, A/O Stage 2.5 LPC	5R7104 (01-100)	(A)(B)(S1) (s2)(1D)
5R0046 (72-32-82)	70	2.00	Sealing strip	- (01-110)	(A)(2D)

C. Instruction/Disposition Code Statements:

(A) New parts are currently available for sale.
(B) Old parts will no longer be available.
(S1) New parts must be fitted as a set. Mixing assembly of old and new parts is not permissible.
(S2) New parts may be used in place of old parts but not vice-versa.
(1D) Old parts can be reworked and reidentified to the new parts.
(2D) Additional part. These parts can be supplied as single line items.

NOTE: The estimated 1990 Unit Price shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE,s Price Catalog or contact IAE,s Spare Parts Sales Department for information concerning firm prices.