COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

RAM AIR INLET PANEL ASSEMBLY

PART NUMBER 213A3170–5

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COMPONENT MAINTENANCE MANUAL

Revision No. 8
Jul 01/2009

To: All holders of RAM AIR INLET PANEL ASSEMBLY 21-53-03.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

The COMPONENT MAINTENANCE MANUAL is furnished either as a printed manual, on microfilm, or digital products, or any combination of the three. This revision replaces all previous microfilm cartridges or digital products. All microfilm and digital products are reissued with all obsolete data deleted and all updated pages added.

For printed manuals, changes are indicated on the List of Effective Pages (LEP). The pages which are revised will be identified on the LEP by an R (Revised), A (Added), O (Overflow, i.e. changes to the document structure and/or page layout), or D (Deleted). Each page in the LEP is identified by Chapter-Section-Subject number, page number and page date.

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Location of Change	Description of Change
	NO HIGHLIGHTS

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A = Added, R = Revised, D = Deleted, O = Overflow

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COMPONENT MAINTENANCE MANUAL

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR 38167	MAR 01/98

All revisions to this manual will be accompanied by transmittal sheet bearing the revision number. Enter the revision number in numerical order, together with the revision date, the date filed and the initials of the person filing.

Revision		Filed		Revision		Filed	
Number	Date	Date	Initials	Number	Date	Date	Initials

Revision		Filed		Revision		Filed	
Number	Date	Date	Initials	Number	Date	Date	Initials

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All temporary revisions to this manual will be accompanied by a cover sheet bearing the temporary revision number. Enter the temporary revision number in numerical order, together with the temporary revision date, the date the temporary revision is inserted and the initials of the person filing.
When the temporary revision is incorporated or cancelled, and the pages are removed, enter the date the pages are removed and the initials of the person who removed the temporary revision.

Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

INTRODUCTION

1. General

A. The instructions in this manual supply the data necessary to do the maintenance functions together with the test, fault isolation, repair, and replacement of the defective parts.

B. This manual is divided into different parts:

(1) Title Page

(2) Transmittal Letter

(3) Highlights

(4) List of Effective Pages

(5) Table of Contents

(6) Temporary Revision & Service Bulletin Record

(7) Record of Revisions

(8) Record of Temporary Revisions

(9) Introduction

(10) Procedures & IPL Sections

C. Components that can be repaired have a different repair number for each specified repair. To find the repair number location of a component, look in the Repair-General procedure at the beginning of the REPAIR section. The Repair-General procedure also has an explanation of the True Position Dimension symbols used.

D. All dimensions, measures, quantities and weights included are in English units. When metric equivalents are given they will be in the parentheses that follow the English units.

E. The introduction to the Illustrated Parts List (IPL) shows how the IPL data is used.

F. Design changes, optional parts, configuration differences and Service Bulletin modifications may cause different part numbers. These part numbers are identified in the IPL with an alphabetical letter which is added to the end of the basic item number. This new item number is referred to as an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless shown differently.

G. The tool reference numbers found in the individual procedures and in the Special Tools, Fixtures, and Equipment section are used to identify if a tool is a standard tool (STD-XXXX), a commercial tool (COM-XXXX), or a Special Tool (SPL-XXXX). This reference number is also used to distinguish between tools with similar names in the same procedure. These reference numbers are for use in the documentation only. They are not to be used for ordering tools.

RAM AIR INLET PANEL ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

A. The ram air inlet panel assembly is made of an aluminum panel, on which are mounted two clevis assemblies and a hinge assembly.

2. Operation

A. The ram air inlet is in the wing-to-body fairing, forward of the air-conditioning compartments. The panel assembly attaches to airplane structure near the entrance to the ram air inlet.

B. The panel assembly is mechanically linked to a set of air flow modulation panels. An actuator moves the linkage to adjust the position of the panels.

C. When the airplane is on the ground, the panel extends to make sure that unwanted material does not go into the inlet. When the airplane is in the air, the panel retracts to permit free air flow.

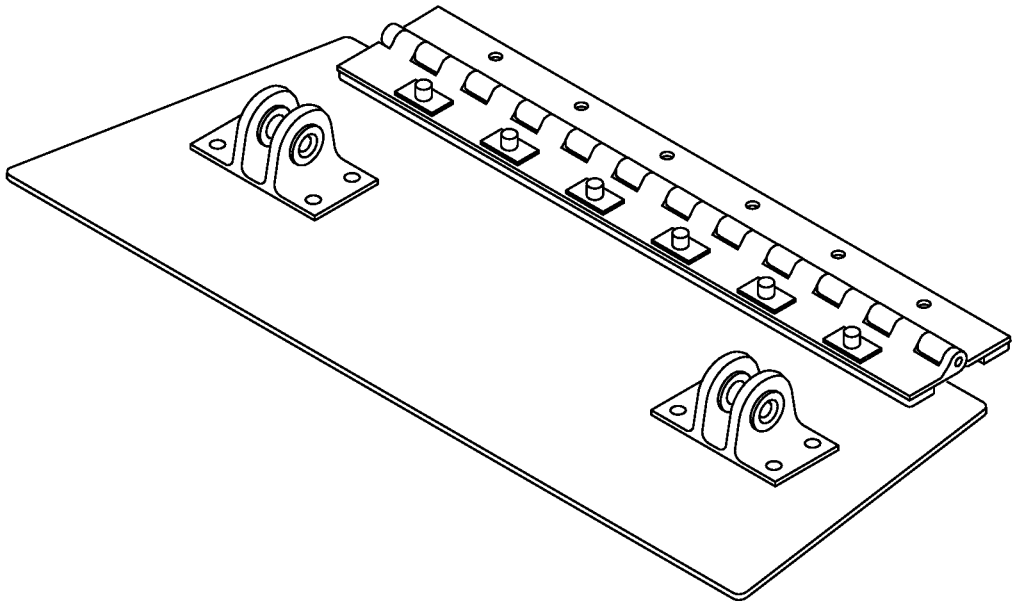
3. Leading Particulars (Approximate)

A. Length – 7 inches

B. Width – 15 inches

C. Height – 1 inch

D. Weight – 1 pound



Ram Air Inlet Panel Assembly
Figure 1

(NOT APPLICABLE)

DISASSEMBLY

1. **General**
   A. This procedure has the data necessary to disassemble the ram air inlet panel assembly (1B).
   B. Disassemble this component sufficiently to isolate the defects, do the necessary repairs, and put the component back to a serviceable condition.
   C. Refer to IPL Figure 1 for item numbers.
2. **Disassembly**
   A. Procedure
      (1) Use standard industry procedures to disassemble this component.

      NOTE: Do not remove the clevis assembly (60) or dissassemble the hinge assembly (15A) unless necessary for repair or replacement.

CLEANING

1. General

A. This procedure has the data necessary to clean the ram air inlet panel assembly (1B).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

2. Cleaning

A. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES

B. Procedure

(1) Clean all parts by standard industry procedures and the instructions in SOPM 20-30-03.

CHECK

1. General

A. This procedure has the data to find defects in the specified parts.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Check

A. References

Reference	Title
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION

B. Procedure

(1) Use standard industry procedures to do a visual check of all the parts for defects. Do the penetrant check if the visual check shows possible damage on the parts listed below:

(2) Do a penetrant check (SOPM 20-20-02) of these parts:

(a) Clevis (75)

REPAIR

1. General

A. Instructions for repair, refinish, and replacement of the specified subassembly parts are included in each REPAIR when applicable:

Table 601:

PART NUMBER	NAME	REPAIR
—	REFINISH OF OTHER PARTS	1-1
213A3120	CLEVIS ASSEMBLY	2-1

2. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in the applicable repair procedures are shown in REPAIR-GENERAL, Figure 601.

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
⌯	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
↗↗	TOTAL RUNOUT
⌴	COUNTERBORE OR SPOTFACE
∨	COUNTERSINK
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
Ø	DIAMETER
S Ø	SPHERICAL DIAMETER
R	RADIUS
SR	SPHERICAL RADIUS
()	REFERENCE
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE. FROM THIS FEATURE PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
(M)	MAXIMUM MATERIAL CONDITION (MMC)
(L)	LEAST MATERIAL CONDITION (LMC)
(S)	REGARDLESS OF FEATURE SIZE (RFS)
(P)	PROJECTED TOLERANCE ZONE
FIM	FULL INDICATOR MOVEMENT

EXAMPLES

— | 0.002	STRAIGHT WITHIN 0.002
⊥ | 0.002 | B	PERPENDICULAR TO DATUM B WITHIN 0.002
// | 0.002 | A	PARALLEL TO DATUM A WITHIN 0.002
○ | 0.002	ROUND WITHIN 0.002
⌭ | 0.010	CYLINDRICAL SURFACE MUST LIE BETWEEN TWO CONCENTRIC CYLINDERS, ONE OF WHICH HAS A RADIUS 0.010 INCH GREATER THAN THE OTHER
⌒ | 0.006 | A	EACH LINE ELEMENT OF THE SURFACE AT ANY CROSS SECTION MUST LIE BETWEEN TWO PROFILE BOUNDARIES 0.006 INCH APART RELATIVE TO DATUM A
⌓ | 0.020 | A	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.020 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE
◎ | Ø 0.0005 | C	CONCENTRIC TO DATUM C WITHIN 0.0005 DIAMETER
⌯ | 0.010 | A	SYMMETRICAL WITH DATUM A WITHIN 0.010
∠ | 0.005 | A	ANGULAR TOLERANCE 0.005 WITH DATUM A
⌖ | Ø 0.002 (S) | B	LOCATED AT TRUE POSITION WITHIN 0.002 DIA RELATIVE TO DATUM B, REGARDLESS OF FEATURE SIZE
⊥ | Ø 0.010 (M) | A 0.510 (P)	AXIS IS TOTALLY WITHIN A CYLINDER OF 0.010 INCH DIAMETER, PERPENDICULAR TO DATUM A, AND EXTENDING 0.510 INCH ABOVE DATUM A, MAXIMUM MATERIAL CONDITION
[2.000] OR 2.000 BSC	THEORETICALLY EXACT DIMENSION IS 2.000

True Position Dimensioning Symbols
Figure 601

REFINISH OF OTHER PARTS - REPAIR 1-1

1. General

A. This procedure has the data necessary to refinish the parts which are not given in the specified repairs.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Refinish of Other Parts

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00175	Primer - Urethane Compatible, Corrosion Resistant (Less Than 1% Aromatic Amines)	BMS10-79, Type III
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

B. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. General

(1) Instructions for the repair of the parts listed in REPAIR 1-1, Table 601 are for repair of the initial finish.

D. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Refer to REPAIR 1-1, Table 601 for refinish details:

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Spacer (35A)	Aluminum alloy	Anodize (F-17.31) and apply primer, C00259 (F-20.03).
Hinge half (53,54)	Aluminum alloy	Anodize (F-17.03) and apply primer, C00175 (F-19.47).
Clevis (75)	Aluminum alloy	Anodize (F-17.31) and apply primer, C00259 (F-20.03), but do not apply primer in the bushing bores.
Panel (80A)	Aluminum alloy	Anodize (F-17.31) and apply primer, C00175 (F-19.47).

CLEVIS ASSEMBLY - REPAIR 2-1

213A3120–1

1. General

A. This procedure has the data necessary to repair the clevis assembly (60).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Bushing Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95

B. References

Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the bushings (65, 70) from the clevis assembly (60).

(2) Install replacement bushings (65) with sealant, A00247. Use the shrink-fit procedure (SOPM 20-50-03).

(3) Machine the bushing (65) ID to the dimensions and finish shown in REPAIR 2-1, Figure 601.

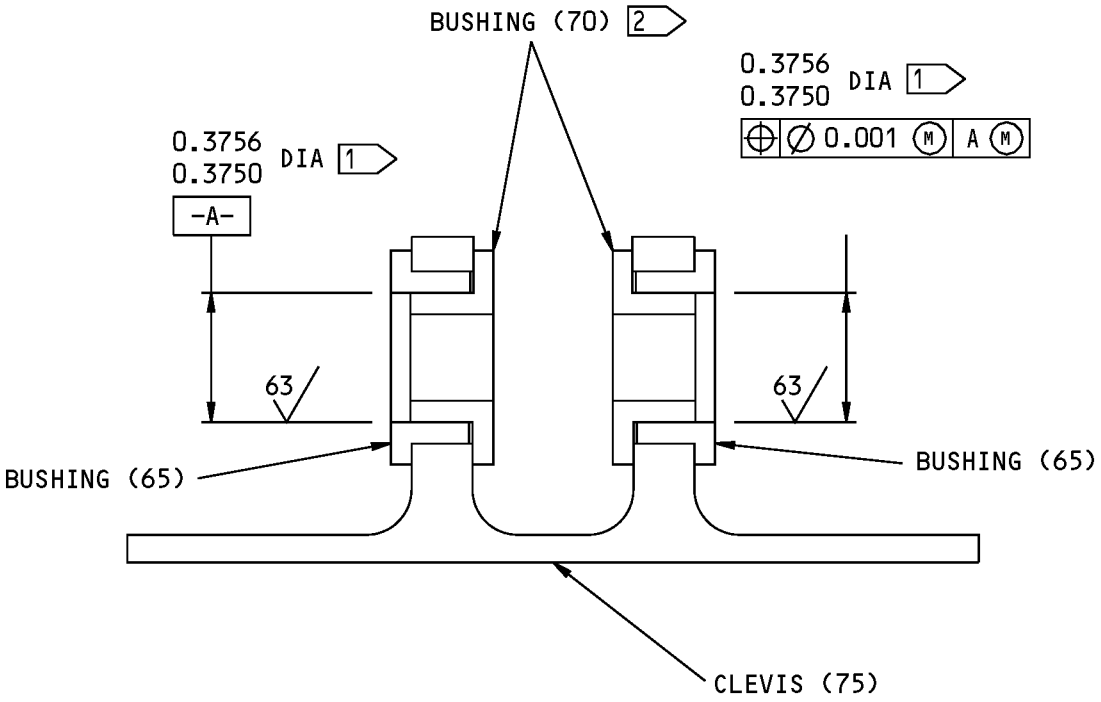
(4) Install replacement bushings (70) with sealant, A00247. Use the shrink-fit procedure (SOPM 20-50-03).

(5) Make sure that the ID of the bushing (70) is not smaller than 0.2500 inch. If necessary, machine the liner in the bushing a maximum of 0.0016 inch diametrically to get the minimum ID.

NOTE: The liner must stay continuous on the bushing ID, without gaps or holes.

3. Clevis Refinish

A. Refer to REPAIR 1-1 for the refinish procedures for the clevis (75).



1 MACHINE 2 COAXIAL HOLES AFTER BUSHING (65) INSTALLATION.

2 MACHINE TO GET 0.2500 MINIMUM I.D. IF NECESSARY.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

213A3120-1 Clevis Assembly - Bushing Replacement
Figure 601

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the ram air inlet panel assembly (1B).

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

2. Assembly

A. References

Reference	Title
SOPM 20-50-01	BOLT AND NUT INSTALLATION

B. Procedure

(1) Use standard industry procedures. Tighten fasteners to standard torques (SOPM 20-50-01).

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FITS AND CLEARANCES

(NOT APPLICABLE)

COMPONENT MAINTENANCE MANUAL

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

(NOT APPLICABLE)

ILLUSTRATED PARTS LIST

1. Introduction

A. The Illustrated Parts List (IPL) contains an illustration and a list of component parts you can repair or replace. The Illustrated Parts Catalog (IPC) shows how to use the Boeing part number system.

B. This shows how parts are related: The relation of each item to its next higher assembly (NHA) is shown in the NOMENCLATURE column. Use the indenture system that follows:

1 2 3 4 5 6 7

. Assembly

. Attaching parts for assembly

. . Detail parts for assembly

. . Subassembly

. . Attaching parts for subassembly

. . . Detail parts for subassembly

. . . Sub-subassembly

. . . Attaching parts for subassembly

. . . . . Details parts for sub-subassembly

Detail Installation Parts (Included only if installation parts may be sent to the shop as part of assembly)

C. Each top assembly is given one use code letter (A, B, C, etc.) in the USAGE CODE column. All subsequent component parts in the list can have one or more of the use code letters to show effectivity to top assemblies. A component part without a use code applies to all top assemblies.

D. An alphabetical letter is added after the item number for optional parts, parts changed by a Service Bulletin, configuration differences (except left-handed and right-handed parts), last engineering releases, and parts added between item numbers in a sequence. The alphabetical letter will not be shown on the illustration for equivalent parts of the same part number.

E. Color-coded parts are identified with a single digit alpha following the dash number or with ''SP'' suffix. If the ''SP'' suffix is used, it represents consolidation of all color codes applicable for a given usage which are not separately listed. Orders for color-coded parts should include the registry number of the airplane for which the parts are ordered.

F. If a part number is 15 characters long but will not fit in the part number column, the part number will be displayed with a ''~'' at the end of the line and will be continued on the next line. The ''~'' denotes that the part number continues on the next line.

G. Parts changed by a Service Bulletin are shown by PRE SB XXXX and POST SB XXXX added to the NOMENCLATURE column.

(1) When a new top assembly is added by a Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the top assembly level only. The configuration differences at the detail part level are shown by use code letters.

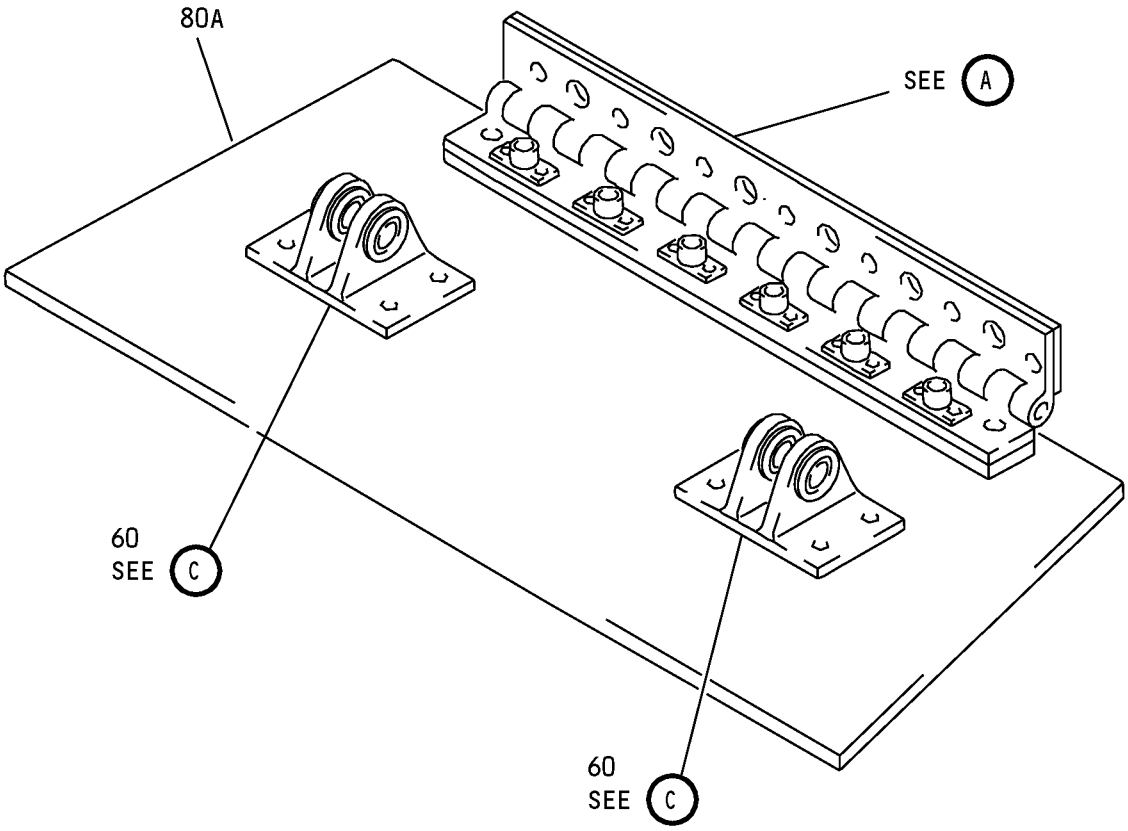
(2) When the top assembly part number is not changed by the Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the detail level.

H. Interchangeable Parts

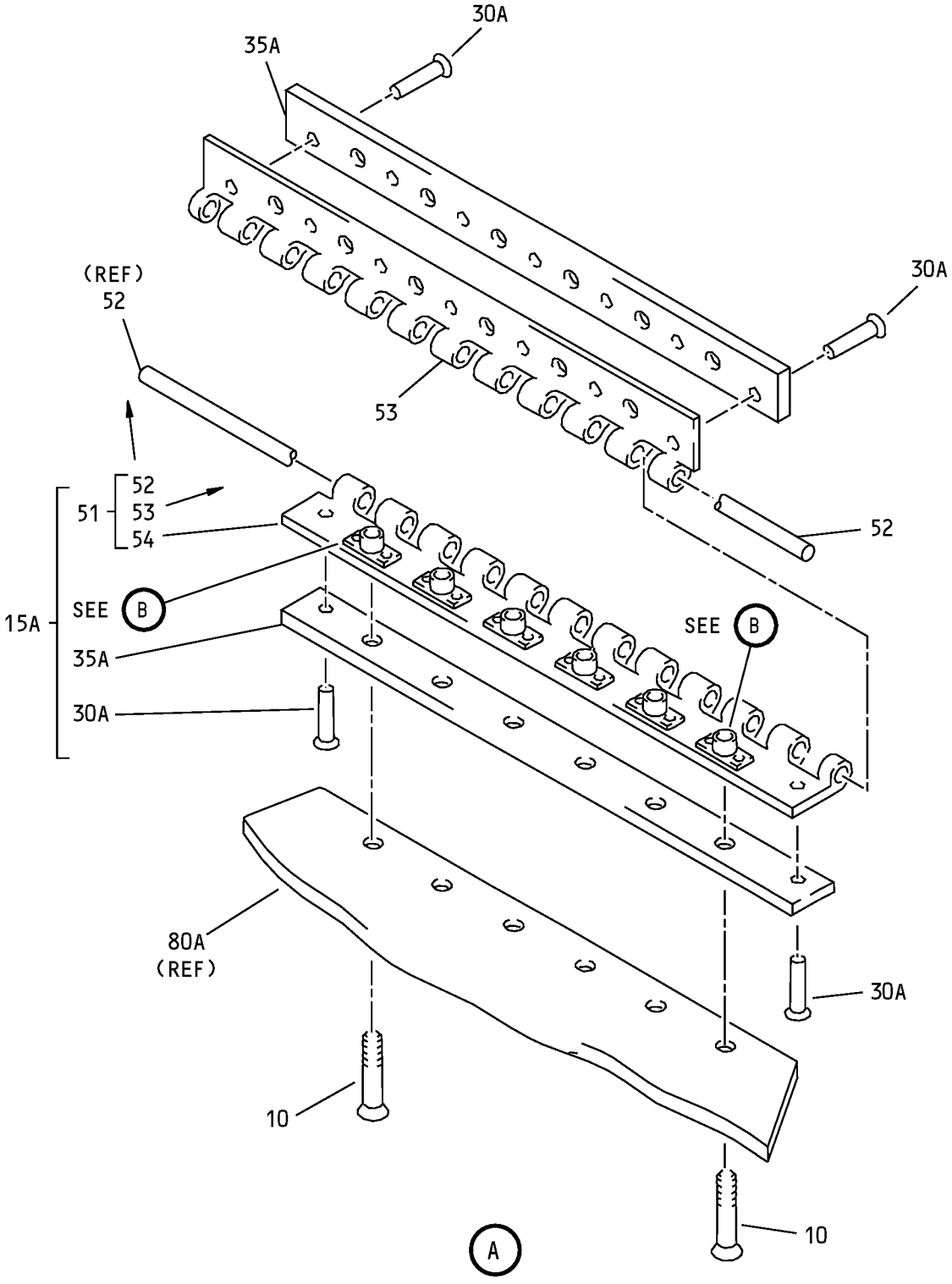
Optional (OPT)	The part is optional to and interchangeable with other parts that have the same item number.
Replaces, Replaced by and not interchangeable with (REPLACES, REPLACED BY AND NOT INTCHG/W)	The part replaces and is not interchangeable with the initial part.
Replaces, Replaced by (REPLACES, REPLACED BY)	The part replaces and is interchangeable with, or is an alternative to, the initial part.

NUMERICAL INDEX

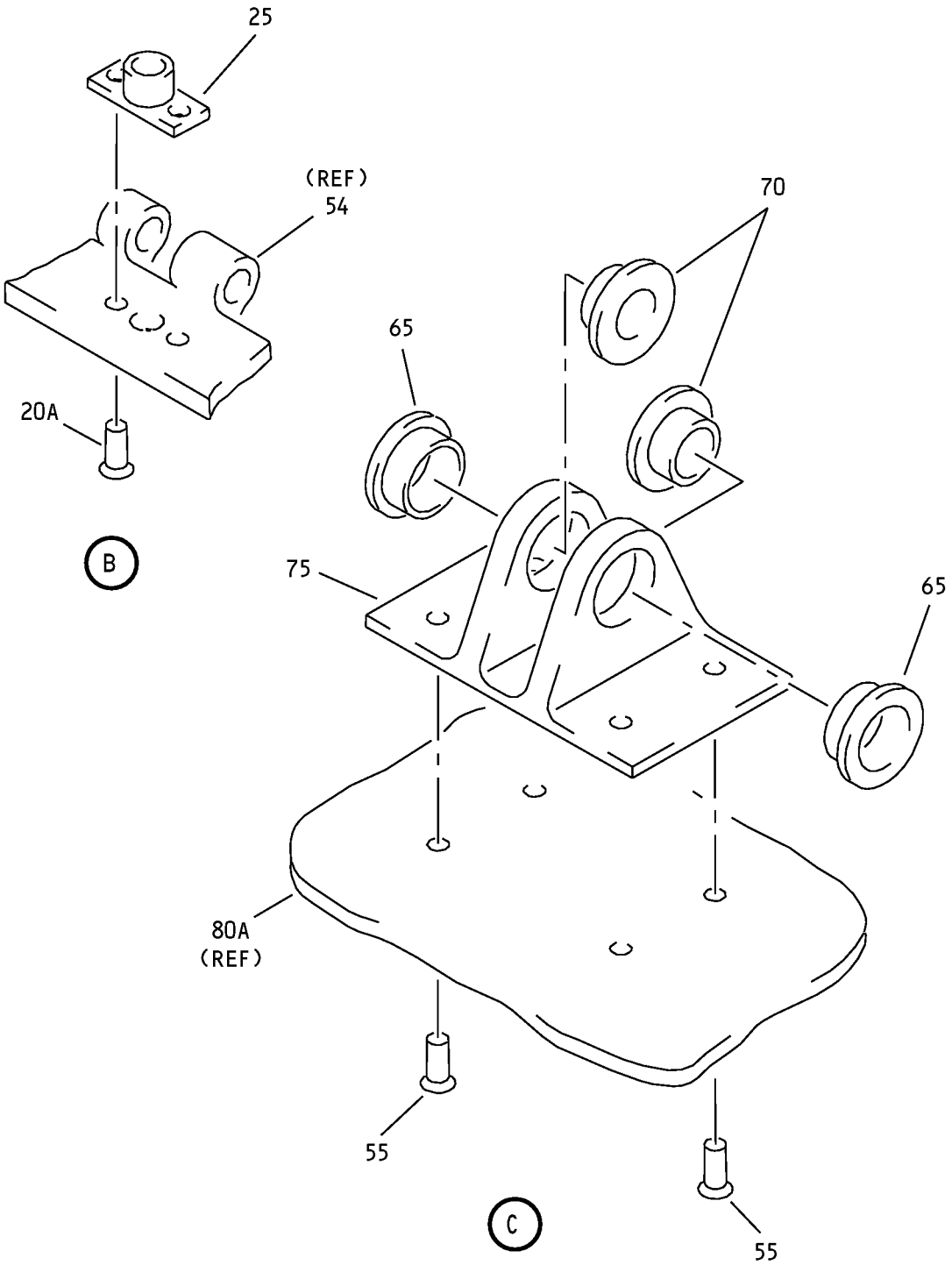
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
213A3120-1		1	60	2
213A3121-1		1	75	1
213A3170-5		1	1B	RF
213A3171-3		1	80A	1
213A3175-5		1	15A	1
213A3177-3		1	35A	2
213A3189-1		1	51	1
213A3189-2		1	53	1
213A3189-3		1	54	1
BACB28AT06D017C		1	65	2
BACB28AV04B018A		1	70	2
BACB30NN3K5		1	10	6
BACN10JN3CD		1	25	6
BACR15BA3AD		1	20A	12
BACR15BA4AD		1	30A	9
BACR15BA5AD		1	55	8
MS20253P4-1115L		1	52	1



Ram Air Inlet Panel Assembly
IPL Figure 1 (Sheet 1 of 3)



Ram Air Inlet Panel Assembly
IPL Figure 1 (Sheet 2 of 3)



Ram Air Inlet Panel Assembly
IPL Figure 1 (Sheet 3 of 3)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
1A	213A3170-3		DELETED		
–1B	213A3170-5		PANEL ASSY-RAM AIR INLET		RF
5	213A3170-4		DELETED		
10	BACB30NN3K5		. BOLT		6
15	213A3175-3		DELETED		
15A	213A3175-5		. HINGE ASSY		1
20	BACR15BA3DD		DELETED		
20A	BACR15BA3AD		. . RIVET (SIZE DETERMINED ON INST)		12
25	BACN10JN3CD		. . NUTPLATE		6
30	BACR15BA4DD		DELETED		
30A	BACR15BA4AD		. . RIVET (SIZE DETERMINED ON INST)		9
35	213A3177-2		DELETED		
35A	213A3177-3		. . SPACER		2
40	213A3175-4		DELETED		
45	213A3176-3		DELETED		
50	213A3176-4		DELETED		
51	213A3189-1		. . HINGE ASSY		1
52	MS20253P4-1115L		. . . PIN		1
53	213A3189-2		. . . HINGE-HALF		1
54	213A3189-3		. . . HINGE-HALF		1
55	BACR15BA5AD		. RIVET (SIZE DETERMINED ON INST)		8
60	213A3120-1		. CLEVIS ASSY		2
65	BACB28AT06D017C		. . BUSHING		2
70	BACB28AV04B018A		. . BUSHING		2
75	213A3121-1		. . CLEVIS		1
80	213A3171-1		DELETED		
80A	213A3171-3		. PANEL		1

–Item not Illustrated