RADIATION SHIELD ASSEMBLY - PW 4000

PART NUMBER 332T4521-2,-48,-53,-54

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

REVISION RECORD

- Retain this record in front of manual. On receipt of revision, insert revised pages in the manual, and enter revision number, date inserted and initial.

REVISION NUMBER	REVISION DATE	DATE FILED	BY	REVISION NUMBER	REVISION DATE	DATE FILED	BY

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL

PAGE	DATE	CODE
71-04-28		
TITLE PAGE		
1	JUN 01/95	01
2	BLANK	
REVISION RECORD		
1	JUN 01/95	01
2	BLANK	
TR & SB RECORD		
1	JUN 01/95	01
2	BLANK	
LIST OF EFFECTIVE PAGES		
1	JUN 01/95	01
THRU LAST PAGE		
CONTENTS		
1	JUN 01/95	01
2	BLANK	
INTRODUCTION		
1	JUN 01/95	01
2	BLANK	
DESCRIPTION & OPERATION		
1	JUN 01/95	01
2	BLANK	
DISASSEMBLY		
301	JUN 01/95	01
302	BLANK	
CLEANING		
401	JUN 01/95	01
402	BLANK	
CHECK		
501	JUN 01/95	01
502	BLANK	

PAGE	DATE	CODE
REPAIR-GENERAL		
601	JUN 01/95	01
602	JUN 01/95	01
REPAIR 1-1		
601	JUN 01/95	01
602	JUN 01/95	01
ASSEMBLY		
701	JUN 01/95	01
702	BLANK	
ILLUSTRATED PARTS LIST		
1001	JUN 01/95	01
1002	JUN 01/95	01
1003	JUN 01/95	01
1004	BLANK	

* = REVISED, ADDED OR DELETED

TABLE OF CONTENTS

*[1] Special instructions not required. Use standard industry practices.

INTRODUCTION

The instructions in this manual provide the information necessary to perform maintenance functions ranging from simple checks and replacement to complete shop-type repair.

This manual is divided into separate sections:

1. Title Page
2. Record of Revisions
3. Temporary Revision & Service Bulletin Record
4. List of Effective Pages
5. Table of Contents
6. Introduction
7. Procedures & IPL Sections

Refer to the Table of Contents for the page location of applicable sections.

The beginning of the REPAIR section includes a list of the separate repairs, a list of applicable standard Boeing practices, and an explanation of the True Position Dimensioning symbols used.

An explanation of the use of the Illustrated Parts List is provided in the Introduction to that section.

All weights and measurements used in the manual are in English units, unless otherwise stated. When metric equivalents are given they will be in parentheses following the English units.

Design changes, optional parts, configuration differences and Service Bulletin modifications create alternate part numbers. These are identified in the Illustrated Parts List (IPL) by adding an alphabetical character to the basic item number. The resulting item number is called an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless otherwise indicated.

RADIATION SHIELD ASSEMBLY - PW 4000 - DESCRIPTION AND OPERATION

1. Description and Operation

   A. The lower radiation shield assembly consists of two heat shields that protect engine accessories from thermal radiation. Each heat shield is made up of an insulation blanket covered by a cres sheet cover and pan which are welded together. The shield assemblies are attached to the engine by brackets welded on doublers and bolts that are fitted through swaged spacers in the shield.

2. Leading Particulars (approximate)

   A. P/N 332T4521-2, -53
      Length -- 15 inches
      Height -- 14 inches
      Thickness -- 0.5 inch
      Weight -- 4 pounds

   B. P/N 332T4521-48, -54
      Length -- 19 inches
      Height -- 11 inches
      Thickness -- 0.5 inch
      Weight -- 3 pounds

DISASSEMBLY

1. Use standard industry practices for disassembly of this component.

CLEANING

1. Use standard industry practices to clean all parts (Ref 20-30-03).

CHECK

1. Do a check of all parts for defects. Refer to standard industry practices.

REPAIR - GENERAL

1. Contents

A. Instructions for repair, refinish and replacement are divided into procedures as follows:

P/N	NAME	REPAIR
332T4521	THERMAL SHIELD ASSEMBLY	1-1

2. Standard Practices and References

A. Refer to the following standard practices as applicable, for details of procedures in individual repairs.

20-20-02 Penetrant Methods of Inspection
20-30-03 General Cleaning Procedures
20-41-02 Application of Chemical and Solvent Resistant Finishes
20-44-02 Temporary Protective Coatings
20-60-01 Cleaning Materials
20-60-04 Miscellaneous Materials

B. References
BAC5915 - Boeing Process Specification for Radiographic Inspection
BAC5977 - Boeing Process Specification for Resistance Welding of Metals

3. Materials and Equipment

NOTE: Equivalent substitutes may be used.

A. Metal Patch -- 0.020-inch thick cres sheet, type AISI 321 or 347

B. Insulation -- 3/8-inch thick, Quartz/Glass face, 16 lb/cu ft max density. K factor equals 0.25-0.33 BTU/IN/HR/SQ FT DEGREES F AT 1000 DEGREES OR BETTER

Sources: Johns-Manville Sales Corp.
PO Box 550, 1251 Magnolia Ave
Corona, CA 91720

Arrowhead Products Division
Federal-Mogul Corporation
4411 Katellz
Los Alamitos, CA 90720

Hi-Temp Insulation, Inc.
7404 Fulton Ave
North Hollywood, CA 91605

United Aircraft Products, Inc.
1116 West Steward Street
Dayton, OH 78943

C. Abrasive Cleaner -- 3M Scotchbrite pads (Ref 20-60-04)

D. Gloves -- Thin latex or white cotton

E. Cleaning Solution -- Acetone, Alcohol, or Trichlorethane (Ref 20-60-01)

F. Cotton Pad -- Nonlinting type (Ref 20-60-04)

G. Welding Equipment -- Weldmatic power supply, Model 1-048-02, and hand piece Model 5-014-01

Sources: Weldmatic Division of Unitek Corporation
1820 South Myrtle
Monrovia, CA 91016

THERMAL SHIELD ASSEMBLY REPAIR 1-1

332T4521-2, -48, -53, -54

NOTE: Refer to REPAIR-GENERAL for list of applicable standard practices and materials.

1. Use the following procedures to restore the thermal shields (1, 1A, 5, 5A, IPL Fig. 1) as applicable. See Fig. 601 for typical insulation blanket construction.

   A. Repair of cracks and tears through cres metal pan or cover with damaged or missing insulating material.

      (1) Stop drill cracks and tears, using 0.060-0.090-inch drill at both ends and/or remove jagged edges by trimming.

      (2) Replace sections of insulating material as necessary. Cut pieces of insulating material 0.0625-inch larger than hole to be filled.

      (3) Fabricate patch from 0.02-inch sheet of CRES type AISI 321 or 347. Overlap the damaged area by 0.1875 inch. Patch not to exceed 2x10 inches.

      (4) Clean area around damaged area by scrubbing with Scotchbrite pad until surface is free of foreign material and oxidation. Area to be cleaned must extend 0.25-inch minimum beyond the size of the selected patch.

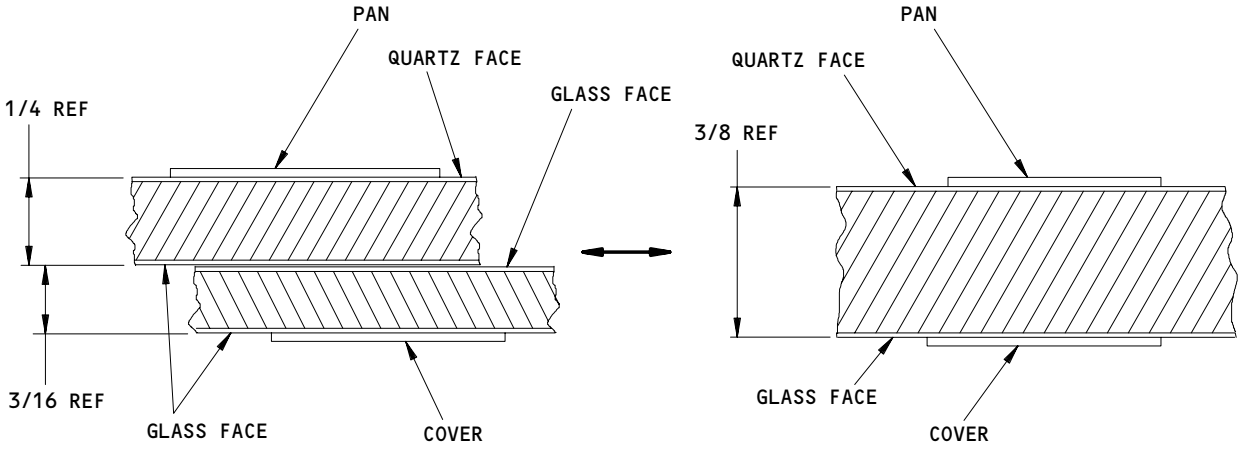
      (5) Further wipe the surface clean with cleaning solution and cotton pad to remove residue. Cleaned area is not to be touched with bare skin, wear rubber or cotton gloves if area requires handling. Wipe both sides of patch with cleaning solution also.

      (6) Hold patch in position required and resistance spotweld one side to prevent movement. Adjust welder to provide strong weld without causing a burn through. Practice on pieces of scrap is strongly recommended.

      (7) Starting with side welded previously, work around the edges of the patch to match the contours of the part surface. Continue to add spot welds until the welds are adjacent to each other; on stressed parts, overlapping is required.

B. Examination of Repair Welds

(1) Visually check affected area with 10-power magnification. If a defect is suspected, use penetrant and radiographic inspection to verify that no cracks exist. Check for no-weld conditions and burn throughs, which must be redone.



TYPICAL RADIATION SHIELD CROSS SECTION

Radiation Shield
Figure 601

E96139

ASSEMBLY

NOTE: Use standard industry practices to assemble this product.

ILLUSTRATED PARTS LIST

1. This section lists and illustrates replaceable or repairable component parts. The Illustrated Parts Catalog contains a complete explanation of the Boeing part numbering system.

2. Indentures show parts relationships as follows:

    Assembly
      Detail Parts for Assembly
      Subassembly
      Attaching Parts for Subassembly
        Detail Parts for Subassembly

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

3. One use code letter (A, B, C, etc.) is assigned in the EFF CODE column for each variation of top assembly. All listed parts are used on all top assemblies except when limitations are shown by use code letter opposite individual part entries.

4. Letter suffixes (alpha-variants) are added to item numbers for optional parts, Service Bulletin modification parts, configuration differences (Except left- and right-hand parts), product improvement parts, and parts added between two sequential item numbers. The alpha-variant is not shown on illustrations when appearance and location of all variants of the part is the same.

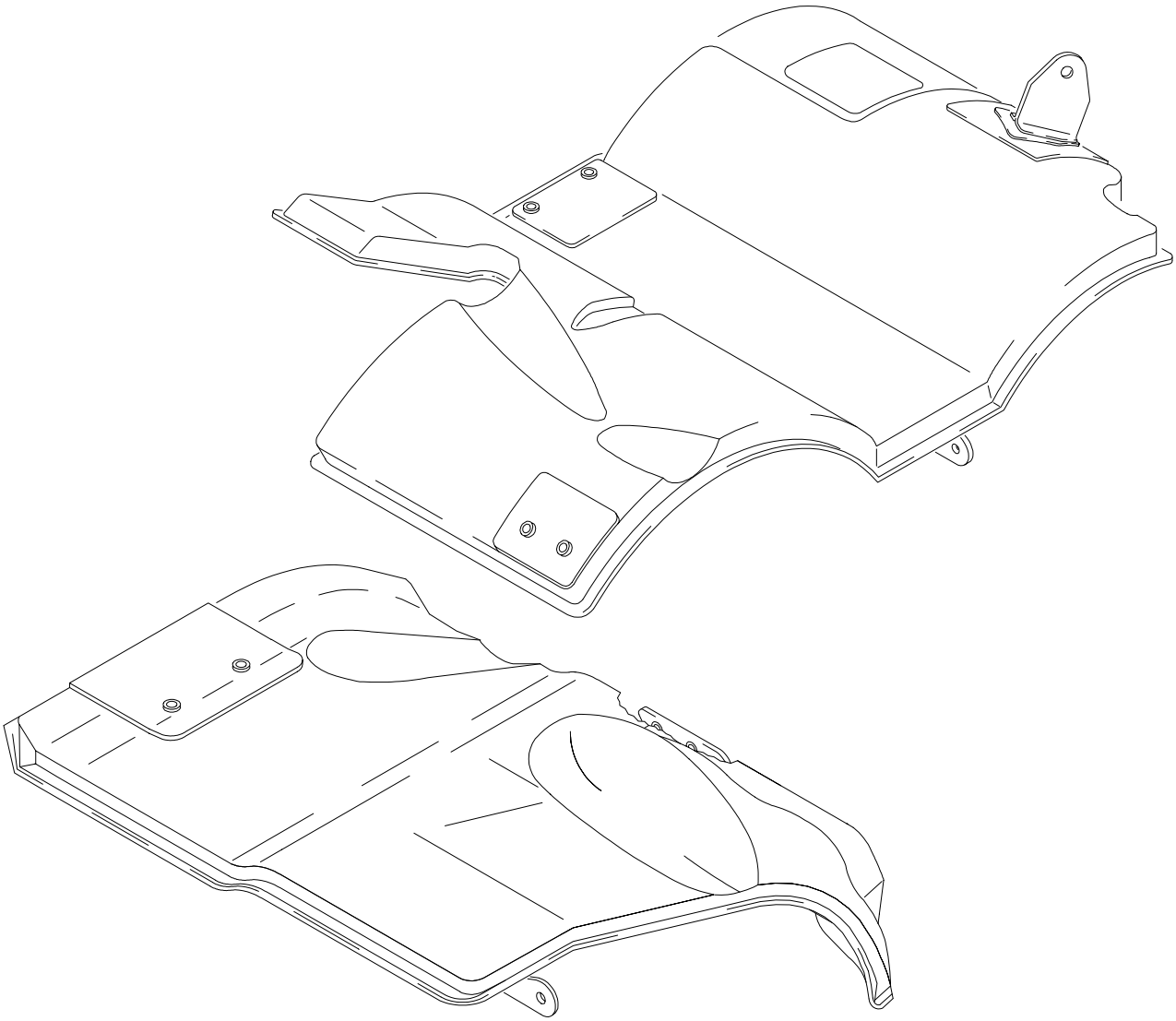
5. Service Bulletin modifications are shown by the notations PRE SB XXXX and POST SB XXXX.

    A. When a new top assembly part number is assigned by Service Bulletin, the notations appear at the top assembly level only. The configuration differences at detail part level are then shown by use code letter.

    B. When the top assembly part number is not changed by the Service Bulletin, the notations appear at the detail part level.

6. Parts Interchangeability

Optional (OPT)	The parts are optional to and interchangeable with other parts having the same item number.
Supersedes, Superseded By (SUPSDS, SUPSD BY)	The part supersedes and is not interchangeable with the original part.
Replaces, Replaced By (REPLS, REPLD BY)	The part replaces and is interchangeable with, or is an alternate to, the original part.



332T4521-2,-48,-53,-54

Radiation Shield Assemblies
Figure 1

E96154

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	332T4521-2		HEAT SHIELD ASSY	A	RF
-1A	332T4521-53		HEAT SHIELD ASSY	B	RF
-5	332T4521-48		HEAT SHIELD ASSY	C	RF
-5A	332T4521-54		HEAT SHIELD ASSY	D	RF