TO: ALL HOLDERS OF GROUND SERVICE SWING CHECK VALVE ASSEMBLY COMPONENT MAINTENANCE MANUAL 21-23-20

REVISION NO. 3 DATED MAR 01/00

HIGHLIGHTS

Pages which have been added or revised are outlined below together with the highlights of the revision. Remove and insert the affected pages as listed and enter Revision No. and date on the Record of Revision Sheet.

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
TITLE PAGE	Added top assemblies 69-2914-24, -25.
1	
501-502	
REPAIR 1-1	
601	
1002	
1003-1004	Updated the Illustrated Parts List.

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GROUND SERVICE SWING CHECK VALVE ASSEMBLY

PART NUMBERS 69-2914-0,-13,-15,-20,-24,-25

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

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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

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

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

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PAGE	DATE	CODE
21-23-20		
TITLE PAGE		
*1	MAR 01/00	01.1
2	BLANK	
REVISION RECORD		
1	JUL 01/91	01
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TR & SB RECORD		
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LIST OF EFFECTIVE PAGES		
*1	MAR 01/00	01
THRU LAST PAGE		
CONTENTS		
1	JUL 01/91	01
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DESCRIPTION & OPERATION		
1	JUL 01/91	01
2	BLANK	
DISASSEMBLY		
301	JUL 01/91	01
302	BLANK	
CHECK		
*501	MAR 01/00	01.1
*502	MAR 01/00	01.1
REPAIR-GENERAL		
601	JUL 01/91	01
602	BLANK	

PAGE	DATE	CODE
REPAIR 1-1		
*601	MAR 01/00	01.1
602	BLANK	
ASSEMBLY		
701	JUN 01/95	01.1
702	BLANK	
ILLUSTRATED PARTS LIST		
1001	JUL 01/91	01
*1002	MAR 01/00	01.1
*1003	MAR 01/00	01.1
*1004	MAR 01/00	01.1

* = REVISED, ADDED OR DELETED

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*[1] Special instructions are not required. Use standard industry practices and information contained in 20-30-03.

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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 and a list of applicable standard Boeing practices.

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.

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GROUND SERVICE SWING CHECK VALVE ASSEMBLY

DESCRIPTION AND OPERATION

1. The ground service swing check valve assembly is a circular, dome-shaped unit which is installed in the main conditioned air inlet duct. The valve assembly has a flapper, hinges and a spring. The flapper is a riveted assembly of a pressure-retaining dish, a flange to make it rigid, and a ring.

2. Air from the ground service cart pushes the swing check valve open, to let conditioned air into the airplane while the airplane is parked.

3. Leading Particulars (Approximate)

   Diameter -- 9 inches
   Thickness -- 1.5 inches
   Weight -- 1 pound

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DISASSEMBLY

NOTE: Disassemble this component only as necessary to complete fault isolation, determine the serviceability of parts, perform required repairs, and restore the unit to serviceable condition.

1. Standard industry practices are sufficient to disassemble this component.

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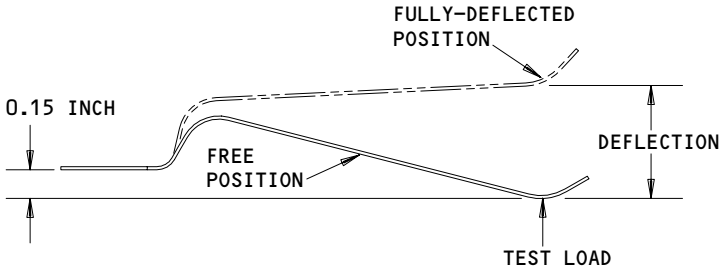
CHECK

1. Examine all parts for obvious defects in accordance with standard industry practices.

2. Do a check of the strength of spring (25, 25A) as shown in Fig. 501.

3. Do a check of the strength of the spring (25B) as shown in Fig. 502.



PART NUMBER	TEST LOAD (POUNDS)	DEFLECTION (INCHES)
66-3157	0.54	0.090-0.110
	3.25	0.590-0.610
66-3157-1	0.54	0.078-0.098
	3.25	0.590-0.610

Spring Check Details
Figure 501

871627

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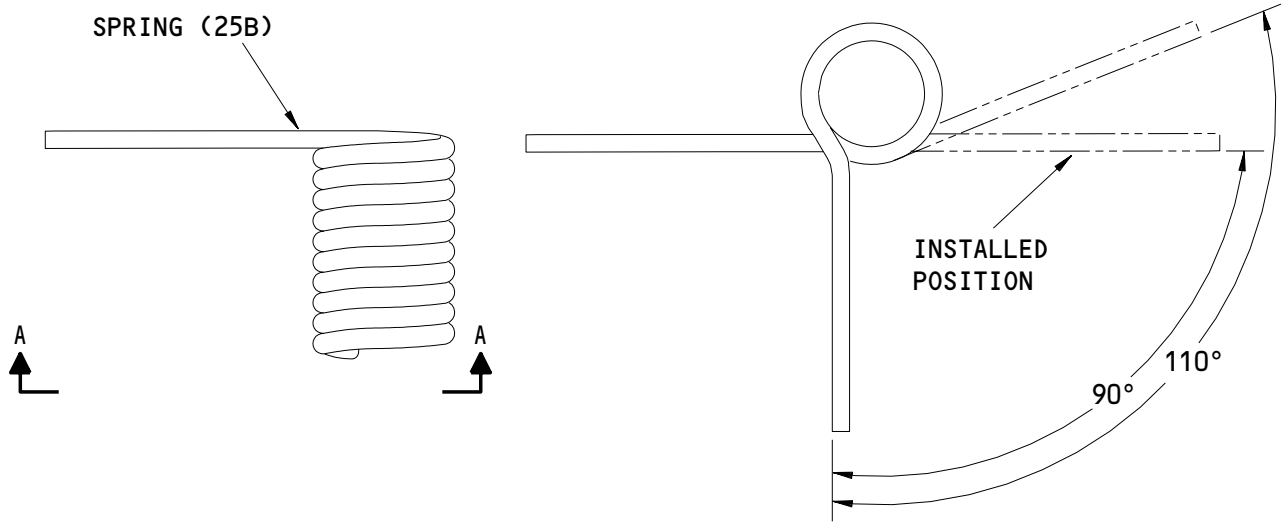

A–A

TEST DEFLECTION (DEGREES) (FROM FREE POSITION)	ROTATIONAL MOMENT LIMITS (POUND-INCHES)
90.0°	0.62–0.76
110.0°	0.77–0.94
270°	1

1 MAXIMUM ANGULAR ROTATION WITHOUT A PERMANENT SET

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

66-3157-2
Spring Check
Figure 502

L05686

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REPAIR - GENERAL

1. Content

   A. Repair, refinish and replacement procedures are included in separate sections as follows:

P/N	NAME	REPAIR
---	MISCELLANEOUS PARTS REFINISH	1-1

2. Standard Practices

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

   20-30-02 Stripping of Protective Finishes
   20-30-03 General Cleaning Procedures
   20-41-01 Decoding Table for Boeing Finish Codes
   20-43-01 Chromic Acid Anodizing
   20-43-03 Alodizing
   20-50-08 Application of Bonded Solid Film Lubricant

3. Materials

   NOTE: Equivalent substitutes may be used.

   A. Primer -- BMS 10-11, type 1 (Ref 20-60-02)

   B. Lubricant -- BMS 3-8 (Replaces BMS 3-3) (Ref 20-60-03)

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MISCELLANEOUS PARTS REFINISH - REPAIR 1-1

1. Repair of parts listed in Fig. 601 consists of restoration of the original finish. Refer to REPAIR-GEN for list of applicable standard practices.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Hinge pin (5)	AN250-4-200	Passivate (F-17.09). Apply BMS 3-8 solid film lubricant (F-19.10).
Hinge pin (30)	AN250-3-200	Passivate (F-17.09). Apply BMS 3-8 solid film lubricant (F-19.10).
Hinge half (10,10A, 10C,20,20B)	MS20257YC5-300	Cadmium plate (F-16.01) per QQ-P-416, type 2, class 2 and apply one coat of BMS 10-11, type 1 per 20-41-02.
Hinge half (35,35A, 35B,38,39,45,45A,45B)	MS20257XC4-300	Cadmium plate (F-16.01) per QQ-P-416, type 2, class 2 and apply one coat of BMS 10-11, type 1 per 20-41-02.
Hinge half (20A)	MS20257XC5-300	Passivate (F-17.09) and apply one layer of BMS 10-11, type 1 primer (F-20.02).
Spring (25,25A,25B)	AISI 301 CRES	No finish.
Ring (55)	CLAD 2024-T3 QQ-A-362 T3-Temper	Chemical treat or chromic acid anodize and apply primer, BMS 10-11, type 1 (SRF-2.115).
Dish (60)	CLAD 2024-T3 QQ-A-250/5 T3-Temper OPT: CLAD 2024-0 QQ-A-250/5 HT TR-T42	Chemical treat or chromic acid anodize and apply primer, BMS 10-11, type 1 (F-18.06).
Flange (65)	CLAD 2024-0 QQ-A-362 0 Temper HT TR 42	Chemical treat and apply primer, BMS 10-11, type 1 (F-18.06) per 20-41-02.

Refinish Details
Figure 601

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ASSEMBLY

1. Materials

   NOTE: Equivalent substitutes may be used.

   A. Sealant -- BMS 5-95 (Ref 20-60-04)

2. Assembly (IPL Fig. 1)

   A. Use standard industry practices for assembly of this component, and also the special instructions in step 2.B., 2.C.

   B. Crimp the ends of the hinges (10, 20, 35, 45) to hold the pin (5, 30) in position.

   C. Apply a continuous pressure layer of sealant on the mating surfaces of pressure retaining ring (55) and pressure retaining dish (60) before you install rivets (50).

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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.

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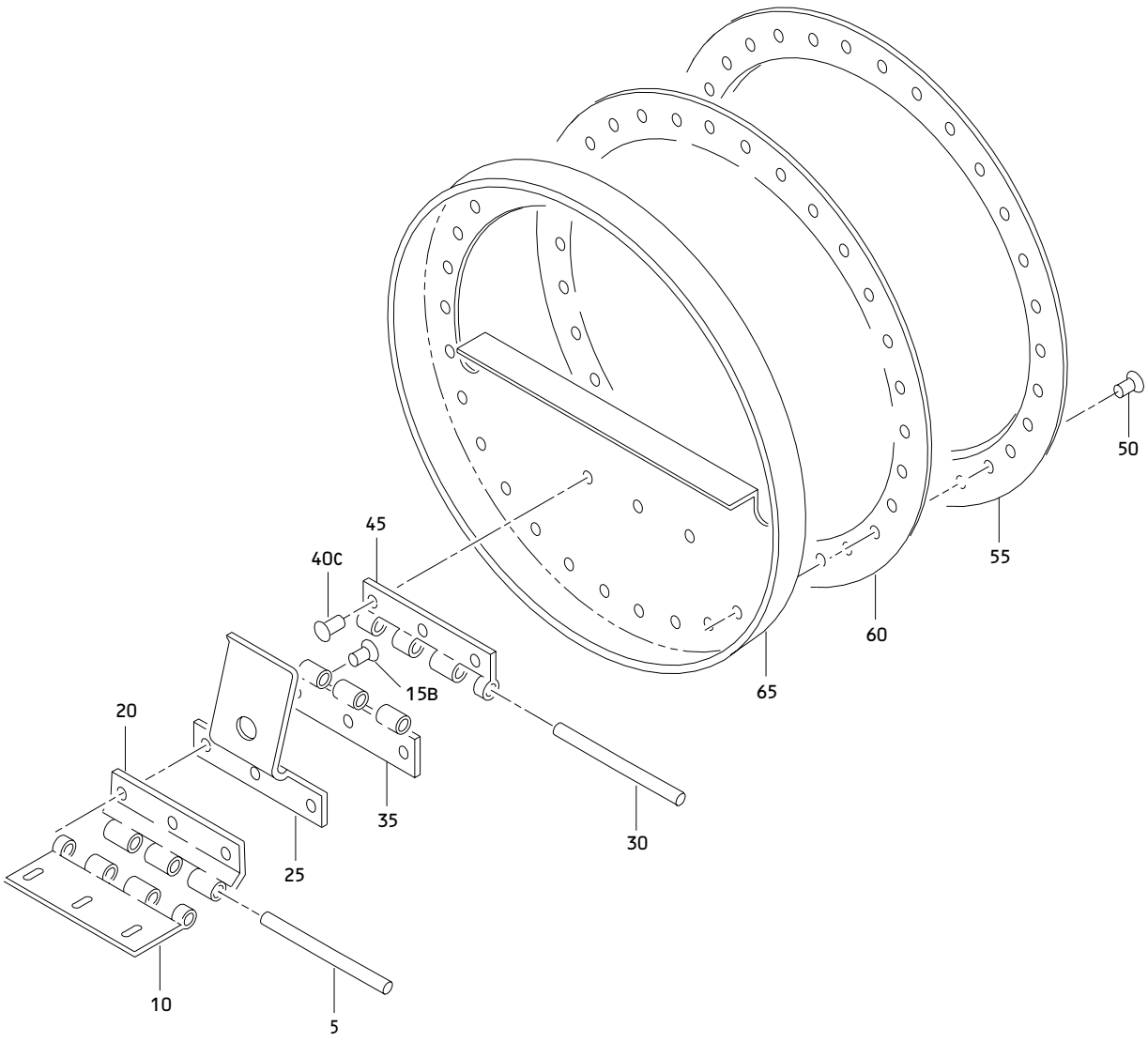

Ground Service Swing Check Valve Assembly
Figure 1

871631

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
1	69-2914-0		VALVE ASSY-GROUND SERVICE SWING CHECK	A	RF
-1A	69-2914		DELETED	A	RF
-1B	69-2914-13		VALVE ASSY-GROUND SERVICE SWING CHECK	B	RF
-1C	69-2914-15		VALVE ASSY-GROUND SERVICE SWING CHECK	C	RF
-1D	69-2914-20		VALVE ASSY-GROUND SERVICE SWING CHECK	D	RF
-1E	69-2914-24		VALVE ASSY-GROUND SERVICE SWING CHECK	E	RF
-1F	69-2914-25		VALVE ASSY-GROUND SERVICE SWING CHECK	F	RF
5	69-2914-8		.PIN-HINGE		1
10	69-2914-5		.HINGE HALF	AB	2
-10A	69-2914-17		.HINGE HALF	CD	1
-10B	69-2914-21		DELETED	EF	1
-10C	69-2914-28		.HINGE HALF	EF	1
-15	MS20426D5		DELETED	A	3
-15A	MS20427M4		DELETED	BC	3
15B	MS20470D4		.RIVET	AB	3
-15C	MS206154MP		.RIVET	C-F	3
20	69-2914-4		.HINGE HALF	A	1
-20A	69-2914-14		.HINGE HALF	B	1
-20B	69-2914-16		.HINGE HALF	CD	1
25	66-3157		.SPRING	A	1
-25A	66-3157-1		.SPRING	BCD	1
-25B	66-3157-2		.SPRING	EF	1
30	69-2914-9		.PIN-HINGE		1
35	69-2914-7		.HINGE HALF	AB	1
-35A	69-2914-19		.HINGE HALF	CD	1
-35B	69-2914-22		.HINGE (OPT TO ITEM 36)	EF	1
-36	69-2914-27		.HINGE ASSEMBLY (OPT TO ITEM 35B)	EF	1
-37	MS20427M4		..RIVET	EF	3
-38	69-2914-16		..HINGE HALF	EF	1
-39	69-2914-26		..HINGE HALF	EF	1
-40	MS20470D4		DELETED	AB	3
-40A	MS20470D4		DELETED	CD	3
-40B	MS206154MP		DELETED	CD	3
40C	MS20426D5		.RIVET	A	3
-40D	MS20427M4		.RIVET	B-D	3

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
45	69-2914-6		.HINGE HALF	AB	1
-45A	69-2914-18		.HINGE HALF	CD	1
-45B	69-2914-23		.HINGE HALF	EF	1
50	MS20426D4		.RIVET	A-D	26
-50A	BACR15BA4AD		DELETED	EF	30
-50B	BACR15BA4ADC		.RIVET	EF	26
-52	BACR15BA4ADC		.RIVET	EF	4
-52A	MS20426D4		.RIVET	A-D	4
-52B	NAS1399D4		.RIVET	A-D	4
55	69-2914-3		.RING-PRESSURE RETAINING		1
60	69-2914-2		.DISH-PRESSURE RETAINING		1
65	69-2914-1		.FLANGE-VALVE STIFFENING		1

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