033 ALL HOLDERS OF OVERWING ESCAPE HATCH WINDOW SHADE ASSEMBLY
COMPONENT MAINTENANCE MANUAL 52-21-02

REVISION NO. 5 DATED MAR 01/02

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
TR & SB RECORD 1 703,709	Added instructions to examine the 411T1234-2 shade support for bare metal or rough areas during window shade assembly installation (767-SL-25-073).

COMPONENT
MAINTENANCE MANUAL

OVERWING ESCAPE HATCH WINDOW SHADE ASSEMBLY

PART NUMBERS 411T1233-8,-9SP,-16SP

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

143457

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
		PRRB12900-36 767-SL-25-073	SEP 01/96 MAR 01/02

PAGE	DATE	CODE
52-21-02		
TITLE PAGE		
1	JUL 01/00	01.1
2	BLANK	
REVISION RECORD		
1	OCT 10/84	01
2	BLANK	
TR & SB RECORD		
*1	MAR 01/02	01.1
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LIST OF EFFECTIVE PAGES		
*1	MAR 01/02	01
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CONTENTS		
1	OCT 10/84	01
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2	BLANK	
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301	NOV 01/00	01.1
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402	BLANK	
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502	BLANK	

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601	OCT 10/84	01
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701	NOV 01/00	01.1
702	NOV 01/00	01.1
*703	MAR 01/02	01.1
*704	MAR 01/02	01.101
*705	MAR 01/02	01.101
*706	MAR 01/02	01.101
*707	MAR 01/02	01.101
*708	MAR 01/02	01.101
*709	MAR 01/02	01.1
*710	BLANK	
ILLUSTRATED PARTS LIST		
1001	OCT 10/84	01
1002	NOV 01/00	01.1
1003	NOV 01/00	01.1
1004	JUL 01/00	01.1
1005	NOV 01/00	01.1
1006	NOV 01/00	01.1
1007	NOV 01/00	01.1
1008	BLANK	

* = REVISED, ADDED OR DELETED

COMPONENT
MAINTENANCE MANUAL

TABLE OF CONTENTS

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. An asterisked flagnote *[ ] in place of the page number indicates that no special instructions are provided since the function can be performed using standard industry practices.

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.

Verification:

Disassembly
Assembly

OVERWING ESCAPE HATCH WINDOW SHADE ASSEMBLY

DESCRIPTION AND OPERATION

1. Description

   A. The overwing escape hatch window shade assembly 411T1233-8 is composed of a tedlar covered flexible vinyl shade, drum assembly, stiffener assembly, handle assembly, shoes and associated components.

   B. The overwing escape hatch window shade assembly 411T1233-9SP,-16SP is composed of a tedlar covered flexible vinyl shade, shade roller assembly, handle assembly, stiffener and associated components.

2. Operation

   A. The handle mounted on the stiffener assembly operates shade in the vertical direction. On the 411T1233-8 assembly the shoes and springs inserted in the stiffeners exert frictional forces against the panel assembly to maintain shade in the position last operated. On the 411T1233-9SP,-16SP assemblies, shade position is achieved by two velcro pads adhered to either end of the stiffener.

3. Leading Particulars (approximate)

   Width -- 12 inches
   Height -- 20 inches
   Weight -- 0.69 lbs.

DISASSEMBLY

1. Disassembly (IPL Fig. 1)

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.

A. Overwing Escape Hatch Window Shade Assembly (Fig. 1)

(1) Remove shoes (5) and shoe springs (10) from stiffener (45).

(2) Remove drum assembly (50) from window shade support (90) by springing ends of support (95).

(3) Pull out end pin (55) from drum assy (50).

(4) Remove mylar tape and separate shade (40) from drum assy (50).

NOTE: Do not remove the end rollers (60, 85) or the spring assembly (65) from the drum assembly. The rollers and spring assembly are permanently bonded to the drum (90).

B. Overwing Escape Hatch Window Shade Assembly (Fig. 2)

(1) Remove roller assembly (15) from window shade support (10) by springing ends of support (10).

(2) Pull out end pin (20) from roller assembly (15).

(3) Remove mylar tape and separate shade (60) from roller assembly (15).

CLEANING

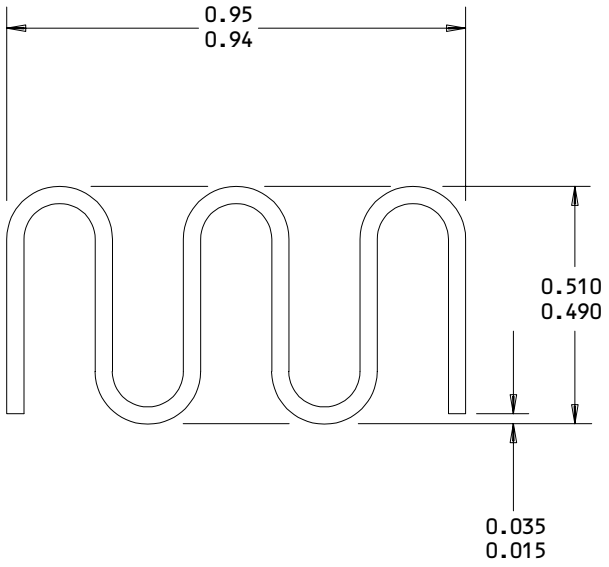
1. Clean all plastic parts per Cleaning of Interior Painted or Plastic Surfaces in General Cleaning Procedures (20-30-03).

2. Use standard industry practices for cleaning aluminum parts of shade assembly.

CHECK

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

2. Check that spring (10, Fig. 1) load is 7.75 pounds minimum at 0.155 to 0.135 inch deflections.



63-1325
Spring Check
Figure 501

143459

REPAIR - GENERAL

1. Contents

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

P/N	NAME	REPAIR
411T1236	SHOE	1-1
63-1082	SPRING	2-1
411T1217	HANDLE	3-1
- - -	MISC. PARTS REFINISH	4-1

2. Standard Practices

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

   20-30-02 Stripping of Protective Finishes
   20-41-01 Decoding Table for Boeing Finish Codes
   20-41-02 Application of Chemical and Solvent Resistant Finishes
   20-41-04 Application and Repair of Interior Decorative Finishes
   20-43-01 Chromic Acid Anodizing
   20-50-12 Application of Adhesives

3. Materials

   NOTE: Equivalent substitutes may be used.

   A. Adhesive -- Types 38 and 51 (Ref 20-50-12)

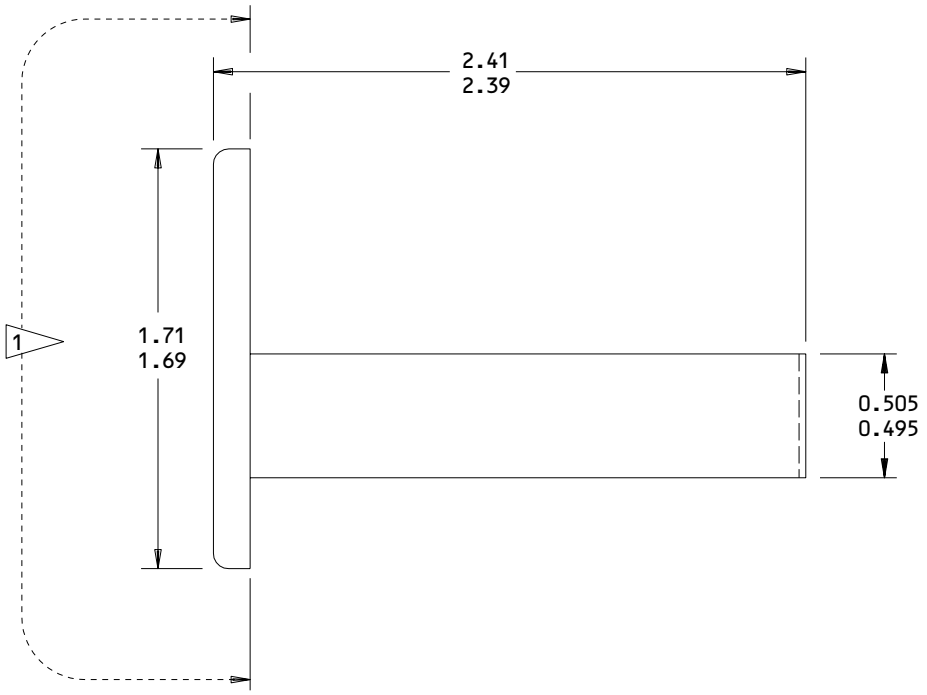
   B. Primer -- BMS 10-11 Type I (Ref 20-60-02)

SHOE - REPAIR 1-1

411T1236-1

1. Plating Repair

NOTE: Repair consists of stripping and restoration of original finish. Refer to refinish instructions, Fig. 601 and to REPAIR-GEN for list of applicable standard practices.



REFINISH

REFINISH PER 1 MATERIAL: AL ALLOY

1 CHROMIC ACID ANODIZE (F-18.13) 8 MICROINCHES

411T1236-1
Shoe Refinish
Figure 601

143548

SPRING REPLACEMENT - REPAIR 2-1

63-1082, -6

1. Replacement instructions for the spring (75, IPL Fig. 1; 55, IPL Fig. 2) were removed during the November 1, 2000 revision. The spring assembly is permanently bonded to the drum, so assembly of the drum assembly (50, IPL Fig. 1) or the shade roller assembly (15, IPL Fig. 2) (to replace the spring) is not possible without damage to the drum (90, IPL Fig. 1; 30, IPL Fig. 2). It is recommended that the drum assembly (50, IPL Fig. 1) or the shade roller assembly (15, IPL Fig. 2) be replaced if a spring (75, IPL Fig. 1; 55, IPL Fig. 2) does not operate correctly.

HANDLE REPLACEMENT - REPAIR 3-1

411T1217-4, -9

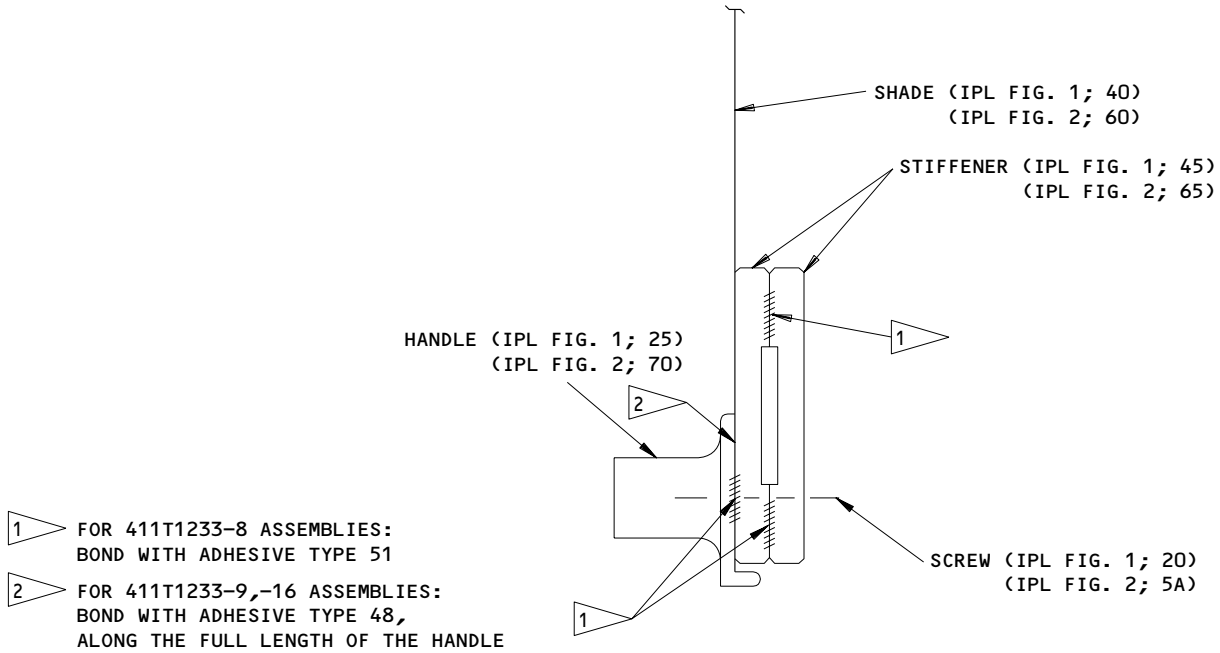
NOTE: Refer to REPAIR-GEN for list of applicable standard practices.

1. Remove screws (20, IPL Fig. 1; 5A, IPL Fig. 2) and separate the handle (25, IPL Fig. 1; 80, IPL Fig. 2) from the stiffener assembly (35, IPL Fig. 1; 65, IPL Fig. 2).

2. For the 411T1233-8 Shade Assembly: Bond the new handle (25, IPL Fig. 1) to the shade (40, IPL Fig. 1) with SOPM 20-50-12, Type 51 adhesive as shown in Fig. 601.

3. For the 411T1233-9, -16 Shade Assemblies: Bond the new handle assembly (70, IPL Fig. 2) to the shade (60, IPL Fig. 2) with SOPM 20-50-12, Type 48 adhesive. Make sure to bond the full length of the handle assembly as shown in Fig. 601.

4. Insert screw (20, IPL Fig. 1; 5A IPL Fig. 2) through stiffener assembly (35, IPL Fig. 1; 65 IPL Fig. 2) and handle (25, IPL Fig. 1, 70, IPL Fig. 2).



Handle Replacement
Figure 601

143552

MISCELLANEOUS PARTS REFINISH - REPAIR 4-1

1. Repair of parts listed in Fig. 601 consists of restoration of original finish.

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Stiffener (45)	Al alloy	Etch and sulfuric acid anodize (F-14.2992).
End pin (55)	PHOSPHOR Bronze Rod	Cad plate to meet the requirements of QQ-P-416 type 2 (F-15.06).
Shade support (95)	Al alloy	Chromic acid anodize and apply one coat BMS 10-11, type 1 primer (F-18.13).
Fig. 2		
Shade support (10)	Al alloy	Chromic acid anodize and apply one coat BMS 10-11, type 1 primer (F-18.13).
End pin (20)	PHOSPHOR Bronze Rod	Cad plate to meet the requirements of QQ-P-416 type 2 (F-15.06).
Stiffener (65)	Al alloy	Etch and sulfuric acid anodize (F-14.2992).

Refinish Details
Figure 601

ASSEMBLY

1. Standard Practices

   A. Refer to the following standard practices, as applicable for details in individual assemblies.

      (1) 20-50-12 - Application of Adhesives

      (2) 20-60-04-Miscellaneous Materials

2. Materials

   A. Adhesive -- BAC5010 Type 48 (20-50-12)

   B. Looptape -- Velcro nylon loop - LP1000 with pressure sensitive adhesive #8222-V11153

   C. VHB Tape -- Scotch brand VHB adhesive transfer tape 10 mil transparent UPC 0-21200-15876-6

   D. Marker Tape -- 3M brand #255 adhesive tape, 3 mil equivalent material acceptable

   E. Adhesive Tape -- 3M brand #850 adhesive tape, 1 mil equivalent material acceptable

3. Assemble the overwing escape hatch window shade assembly (IPL Fig. 1)

   A. Attach the shade (40) to the drum assembly (65) as shown in Fig. 701.

   B. Insert the end pin (55) into the drum assembly (50).

   C. Fully wind shade (40) onto drum assembly (50). Insert the flat end of the spring shaft (80) into the slotted hole of the support (95). Turn the shade (40) and drum assembly (50) 2-1/2 to 3 turns to pre-load the torsion spring (75). Insert end pin into the support (95) by springing open the end of the support (95).

   D. Insert the shoe springs (10) and shoes (5) in the stiffener (45). Make sure that the longer legs of the shoes (5) point toward the drum assembly (50).

4. Assemble the overwing escape hatch window shade assembly (IPL Fig. 2)

A. Bond the handle assembly (70) to the shade (60), along full length of handle with SOPM 20-50-12, type 48 adhesive as shown in Fig. 702.

B. Attach the shade (60) to the stiffener (65) as follows:

(1) Apply a 0.010 x 2.00 x 10.42 strip of VHB tape (411T1233-13) to the flat surface of the stiffener (65) as specified in BAC5801 and as shown in Fig. 702 (see Section E-E).

NOTE: The VHB tape must not be on the radius area of the stiffener to prevent the occurrence of creases in the shade during assembly with the shade. Also, it is not necessary that the VHB tape have radius corners as shown in Fig. 702.

(2) Remove the release liner from the VHB tape and attach the shade (60) as shown in Fig. 702.

(3) Apply pressure to the shade (60) at all points that touch the stiffener (65) to make sure that there is a good bond.

C. Attach a 0.003 x 0.25 wide strip of marker tape (411T1233-14) to the full length of the drum (30) on the roller assembly (15) as shown in Fig. 702.

D. Butt the edge of the shade (60) to the edge of the marker tape (411T1233-14) on the roller assembly (15). Apply a 0.001 x 2.00 wide strip of adhesive tape (411T1233-15) over shade (60) and onto the roller assembly (15) as shown in Fig. 702.

NOTE: The roller assy (15) will not operate correctly if the marker or adhesive extends across the edges of the drum (30).

E. Install the shade roller assembly (15) into the window shade support (10) as follows:

(1) With the shade (60) attached and fully wound onto the shade roller assembly (15), put the spring shaft (45) of the shade roller assembly into the slotted hole of the support (10).

(2) Turn the roller assembly (15) with the shade (60) to pre-load the torsion spring (55) in the roller assembly (15) from 12 to 14 (full 360-degree) turns.

(3) Move the end of the support (10) as necessary to put the pin (20) end of the roller assembly (15) into the hole of the support (10).

F. Attach a 1.50 x 1.00 wide strip of loop tape (411T1233-12) to the stiffener (65) as specified in BAC5801 and as shown in Fig. 702.

(1) The loop tape must overlap and retain the shade (60) as shown in Fig. 702, Section D-D.

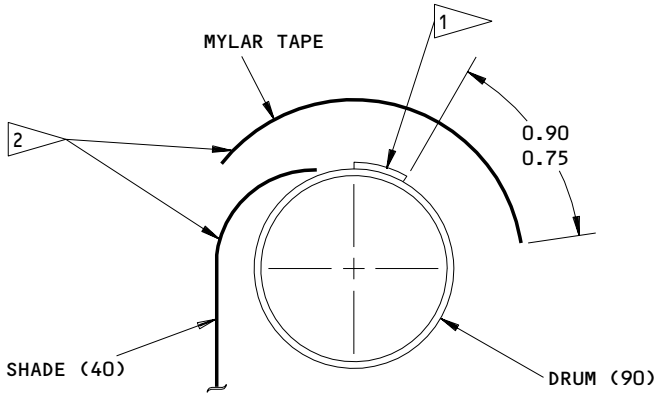
(2) The edge location for the loop tape on the opposite side of the stiffener (65) is free to change within ± 0.30 inch to keep the necessary overlap on the shade side.

(3) The loop tape can be trimmed to get the correct fit with the stiffener (65). The gap between the loop tape and the stiffener (65) must not be more than 0.015 inch total (on each end of the loop tape).

G. Make sure the shade (60) rolls up straight on the roller assembly (15) within ±0.03.

H. Attach a copy of Fig. 703 to the shade assembly.

NOTE: Fig. 703 specifies instructions to prevent damage to the Window Shade Assembly during installation into the Overwing Escape Hatch Panel Assembly.



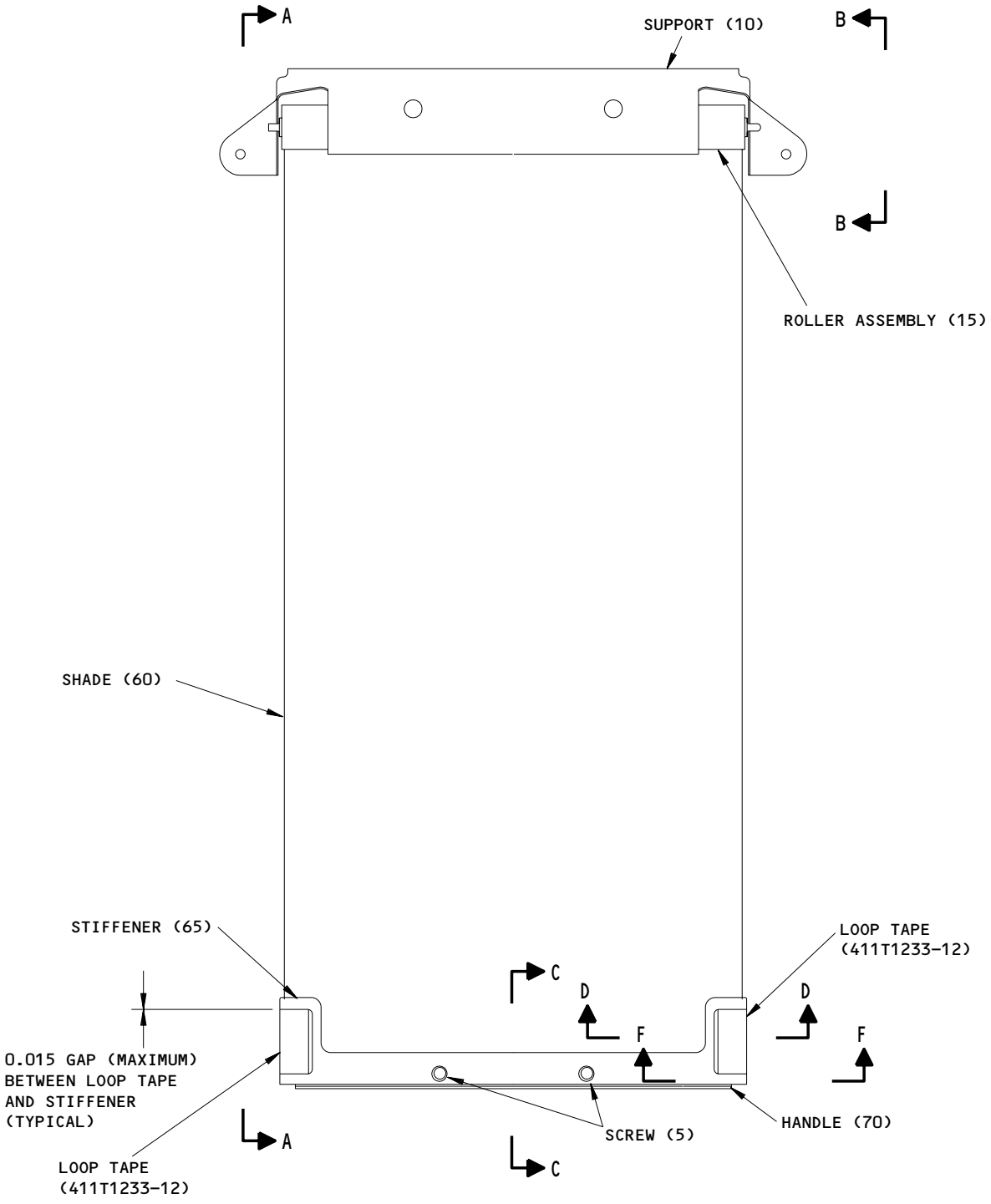
1 ATTACH 0.003 X 0.25 WIDE STRIP OF MYLAR TAPE FULL LENGTH OF DRUM (90), BUTT EDGE OF SHADE (40) TO EDGE OF MYLAR TAPE

2 ATTACH SHADE (40) TO DRUM (90) WITH 0.001 X 2.00 WIDE X 10.58 LONG MYLAR TAPE. SHADE MUST ROLL UP STRAIGHT ON SHADE ROLLER WITHIN ± 0.050

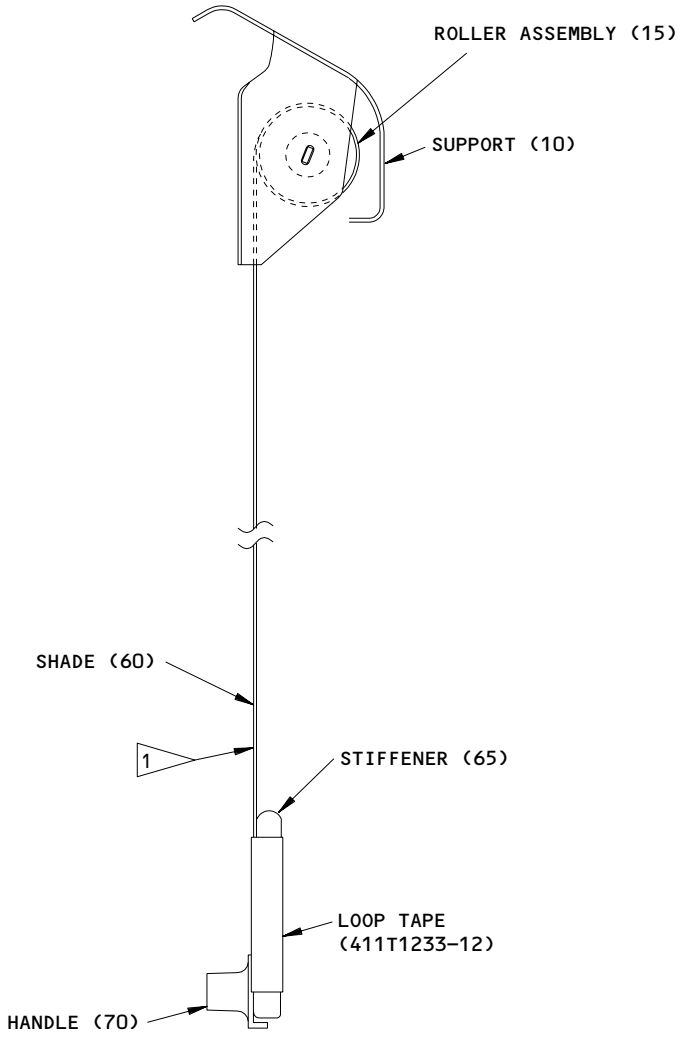
ITEM NUMBERS REFER TO IPL FIG. 1

Shade Attachment for Figure 1 Window Shade Assembly
Figure 701

143550



Shade and Handle Attachment for Figure 2 Window Shade Assemblies
Figure 702 (Sheet 1)

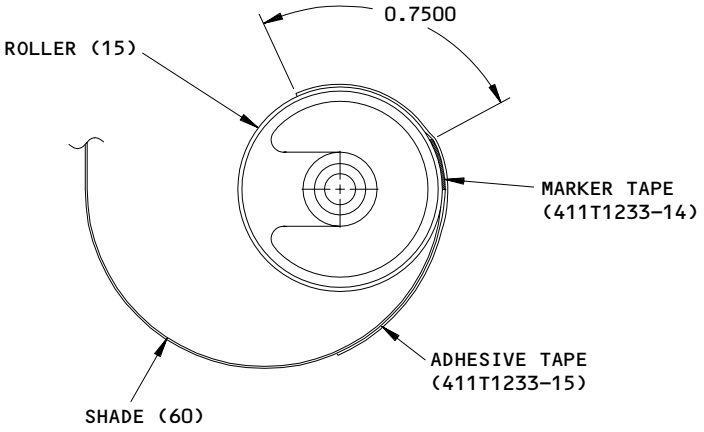


A-A

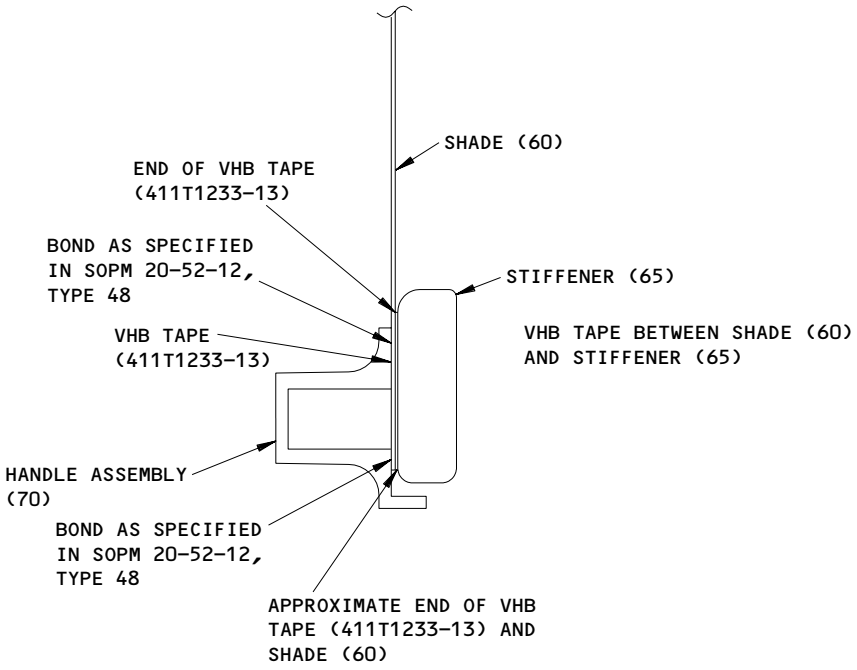
1 DECORATIVE SURFACE

ITEM NUMBERS REFER TO IPL FIG. 2

Shade and Handle Attachment for Figure 2 Window Shade Assemblies
Figure 702 (Sheet 2)



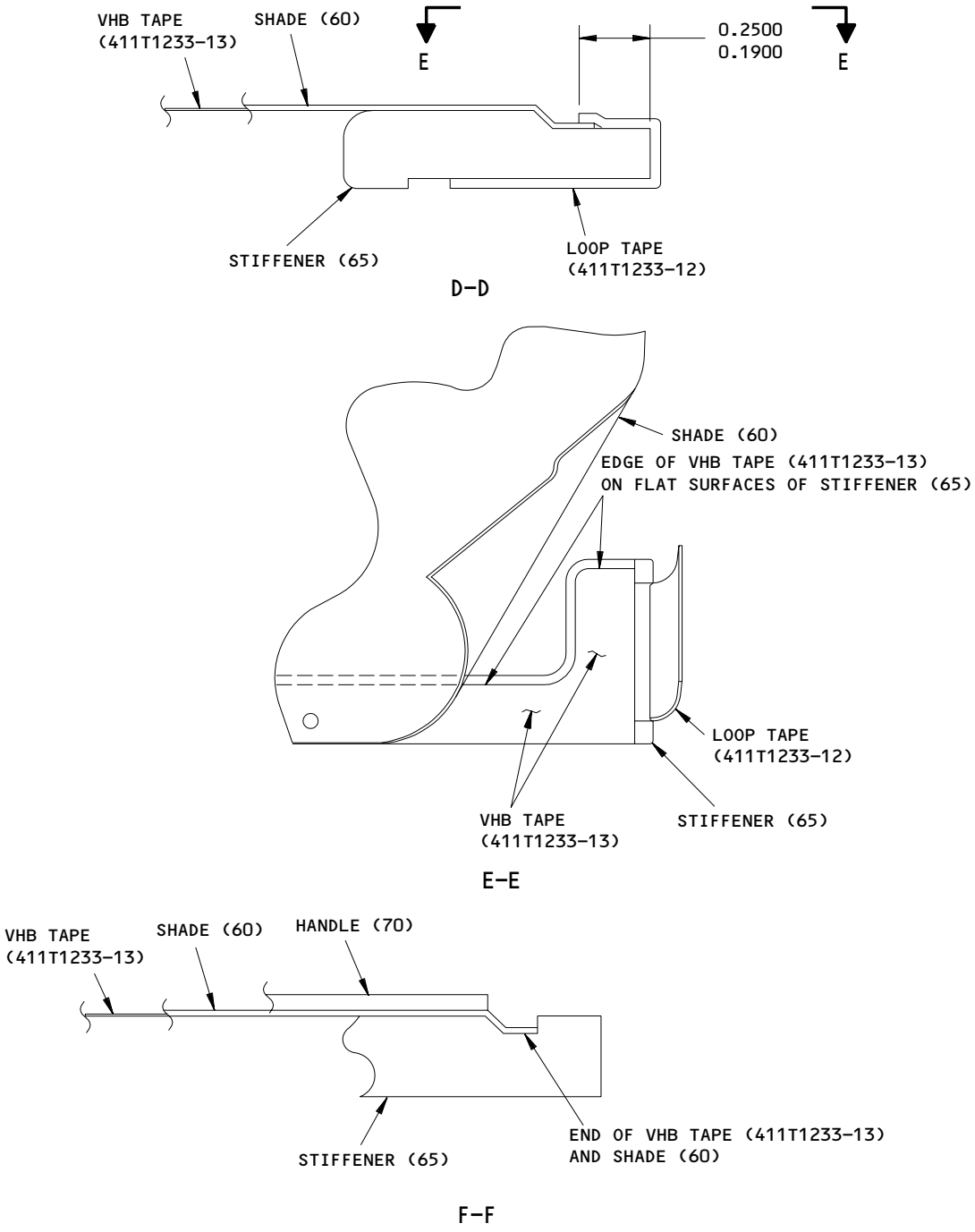
SHADE ATTACHMENT SHOWN
B-B



HANDLE ATTACHMENT SHOWN
C-C

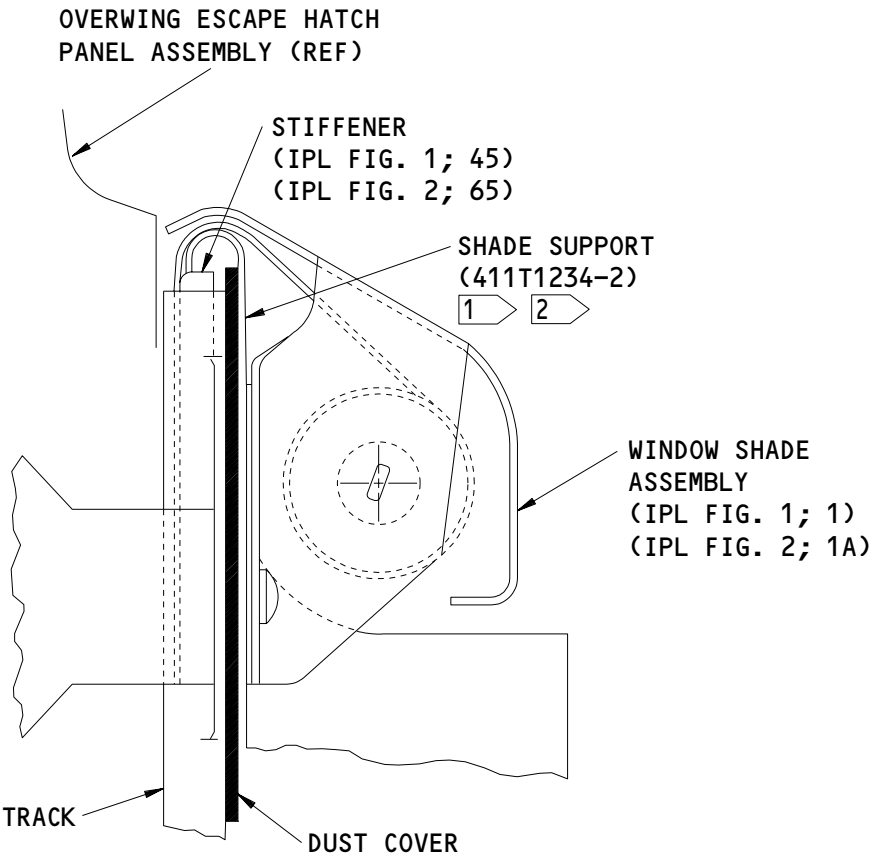
ITEM NUMBERS REFER TO IPL FIG. 2

Shade and Handle Attachment for Figure 2 Window Shade Assemblies
Figure 702 (Sheet 3)



ITEM NUMBERS REFER TO IPL FIG. 2

Shade and Handle Attachment for Figure 2 Window Shade Assemblies
Figure 702 (Sheet 4)



NOTE: THIS FIGURE SPECIFIES INSTALLATION INSTRUCTIONS. ATTACH THIS FIGURE TO THE WINDOW SHADE ASSEMBLY AND REMOVE IT DURING INSTALLATION.

1 EXAMINE THE 411T1234-2 SHADE SUPPORT FOR BARE METAL OR ROUGH AREAS. BARE METAL OR ROUGH AREAS ON THE SHADE SUPPORT CAN CAUSE DAMAGE TO THE SHADE ASSEMBLY. LIGHTLY POLISH THE ROUGH AREA OF A SHADE SUPPORT TO REMOVE THE ROUGHNESS. REPLACE A SHADE SUPPORT THAT HAS BARE METAL

2 MAKE SURE THE END OF THE STIFFENER TOUCHES THE END OF THE SHADE SUPPORT AS SHOWN

Window Shade Assembly Installation Notes - Tag
Figure 703

M44663

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.

7. Boeing Proprietary Color-Coded Parts

A. Color-coded parts are identified with an alpha "SP" suffix. This entry represents consolidation of all color-codes applicable for a given usage. Orders for color-coded parts should include the registry number of the airplane for which the parts are ordered.

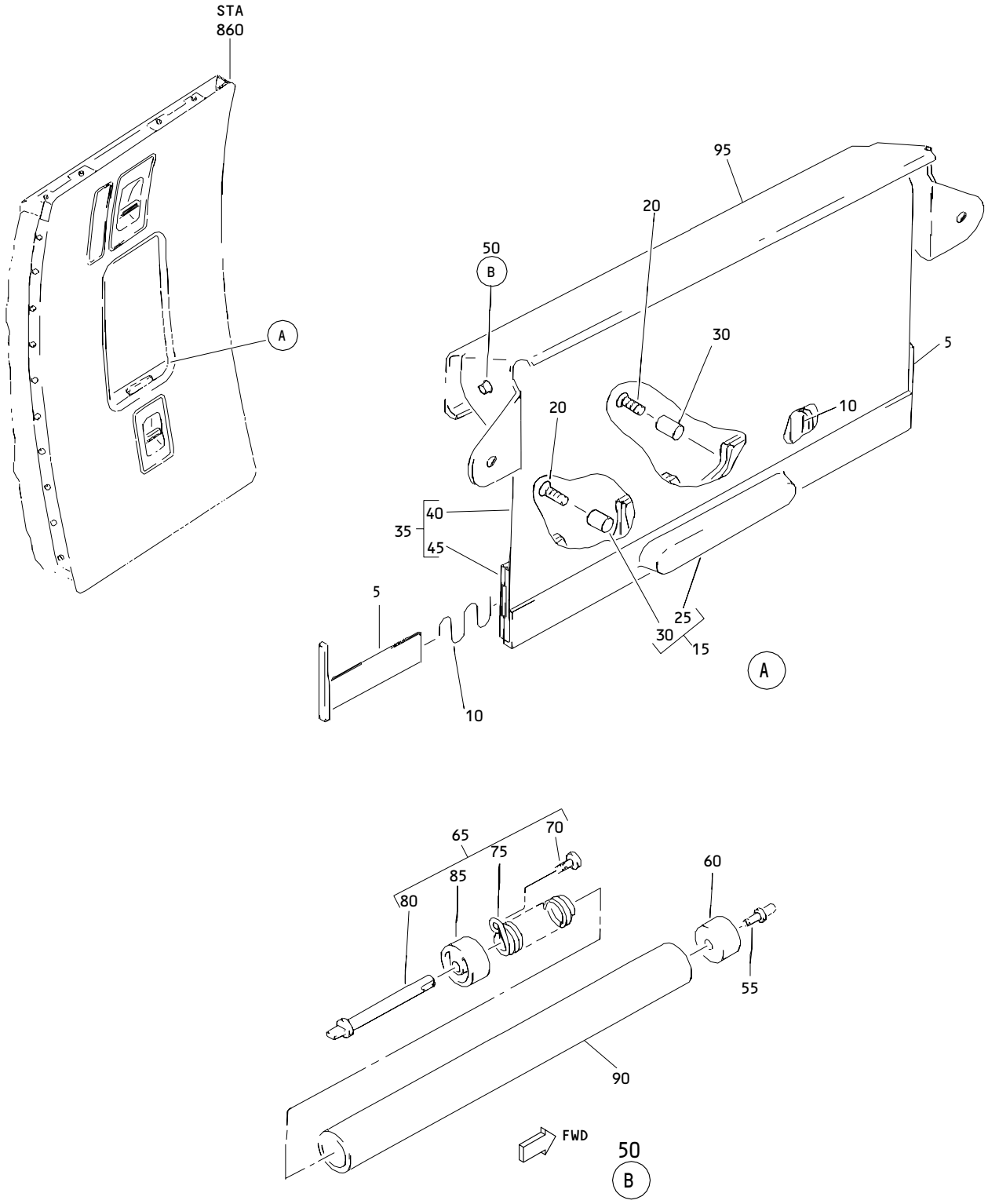
VENDORS

01556 MITE CORP HELI-COIL PRODUCTS DIVISION
SHELTER ROCK LANE
DANBURY, CONNECTICUT 06810

11153 VELCRO USA INCORPORATED
406 BROWN AVE PO BOX 5218
MANCHESTER, NEW HAMPSHIRE 03108

12795 HEATH TECNA PRECISION STRUCTURES INC SUB OF CRITON CORP
19819 84TH SOUTH
KENT, WASHINGTON 98031

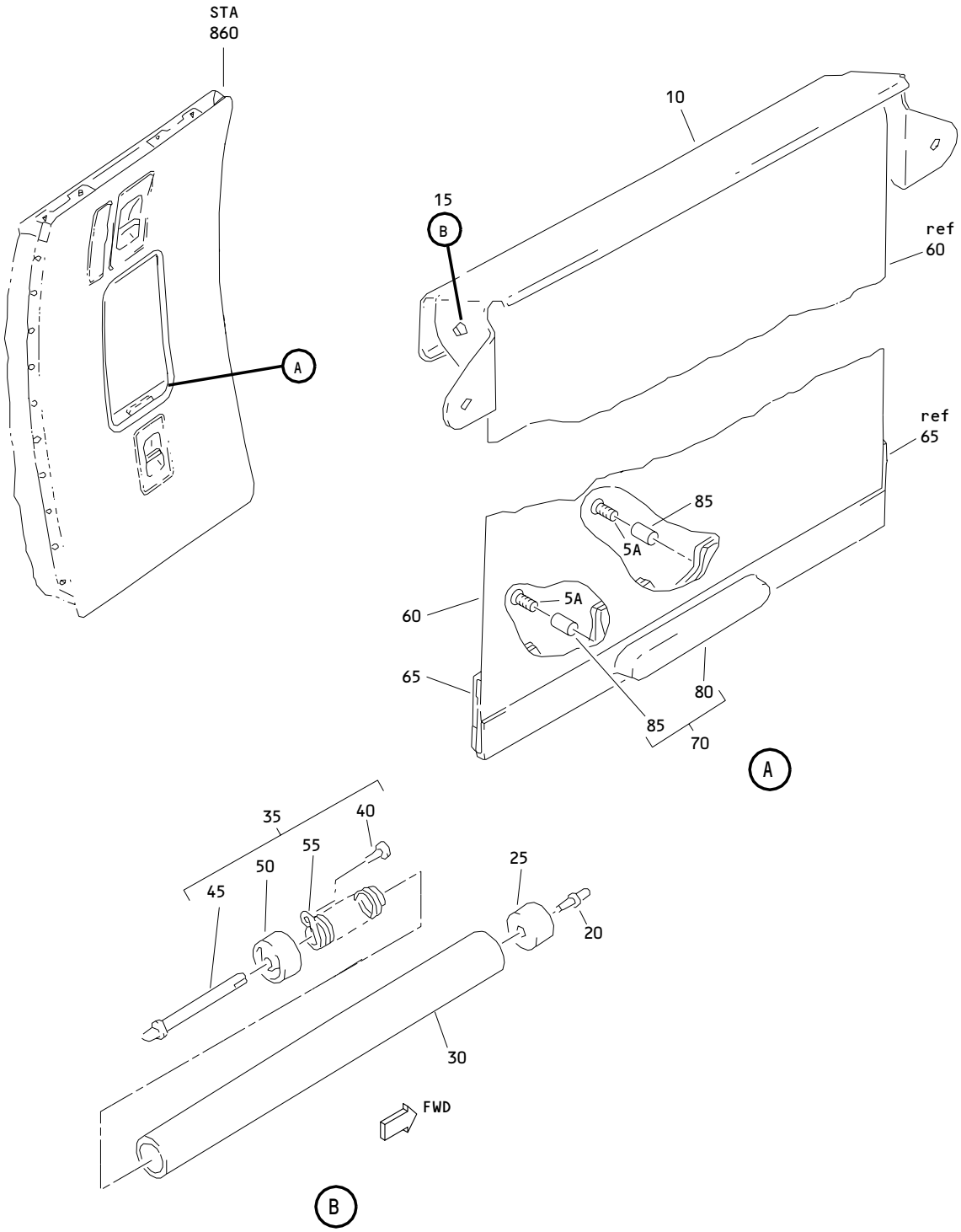
15814 C. R. DANIELS, INC.
3451 ELLICOTT CENTER DRIVE
ELLICOTT CITY, MARYLAND 21043-4112



Overwing Escape Hatch Window Shade Assembly
Figure 1

T93465

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	411T1233-8		SHADE ASSY-OVERWING ESCAPE HATCH WINDOW	A	RF
1A	411T1233-9		DELETED		
1B	411T1233-9SP		SHADE ASSY-OVERWING ESCAPE HATCH WINDOW (FOR DETAILS, SEE FIG 2)	B	RF
1C	411T1233-16SP		SHADE ASSY-OVERWING ESCAPE HATCH WINDOW (FOR DETAILS, SEE FIG 2)	C	RF
5	411T1236-1		.SHOE	A	2
10	63-1325		.SPRING-SHOE	A	2
15	411T1217-4		.HANDLE ASSY- (ALT FROM 411T1217-1) ATTACHING PARTS	A	1
20	NAS514P832-9		.SCREW -------*-------	A	2
25	411T1217-2		..HANDLE	A	1
30	6035-2BRX312		..INSERT- (V01556)	A	1
35	411T1233-4		.STIFFENER ASSY	A	1
40	411T1233-5		..SHADE	A	1
45	411T1235-1		..STIFFENER	A	2
50	411T1233-7		.DRUM ASSY	A	1
55	411T1238-2		..PIN-END	A	1
60	69-26552-3		..END-ROLLER	A	1
65	411T1233-3		..SPRING ASSY	A	1
70	MS24618-44		...SCREW	A	1
75	63-1082		...SPRING	A	1
80	66-19409-1		...SHAFT- (OPT ITEM 80A)	A	1
-80A	HTP3000		...SHAFT- (V12795) (OPT ITEM 80)	A	1
85	69-26552-4		...END-ROLLER	A	1
90	69B50099-2		..DRUM	A	1
95	411T1234-3		.SUPPORT	A	1



Overwing Escape Hatch Window Shade Assembly
Figure 2

F97041

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
1	411T1233-9		DELETED		
1A	411T1233-9SP		SHADE ASSY-OVERWING ESCAPE HATCH WINDOW	B	RF
1B	411T1233-16SP		SHADE ASSY-OVERWING ESCAPE HATCH WINDOW	C	RF
5	NAS601-7P		DELETED		
5A	NAS602-6P		.SCREW	B,C	AR
10	411T1234-3		.SUPPORT-WINDOW SHADE	B,C	1
15	411T1233-10		.SHADE ROLLER ASSY-CABIN WINDOW	B,C	1
20	411T1238-2		..PIN-END	B,C	1
25	69-26552-3		..END ROLLER	B,C	1
30	69B50099-2		..DRUM	B,C	1
35	69-26553-9		..SPRING ASSY	B,C	1
40	MS51861-4C		...SCREW	B,C	1
45	66-19409-3		...SHAFT-SPR (OPT ITEM 45B)	B,C	1
45A	A8141		DELETED		
45B	A8138-20		...SHAFT ASSY-SPRING (OPT ITEM 45) (V15814)	B,C	1
50	69-26552-4		...END ROLLER	B,C	1
55	63-1082-6		...SPRING-ROLLER	B,C	1
60	411N1114-13SP		.SHADE-WINDOW	B	1
60A	411N1114-14SP		.SHADE-WINDOW	C	1
65	411T1235-2		.STIFFENER	B,C	1
70	411T1217-9		.HANDLE ASSY-WINDOW SHADE OVERWING ESCAPE HATCH ATTACHING PARTS	B,C	1
75	NAS602-6P		..SCREW -------*-------		
80	411T1217-2		..HANDLE		
85	6035-2BRX312		..INSERT (V01556)		