TO: ALL HOLDERS OF NO. 3 WINDOW ASSEMBLY COMPONENT MAINTENANCE MANUAL 56-11-06

REVISION NO. 21 DATED JUL 01/05

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 to the Record of Revision Sheet.

CHAPTER/SECTION AND PAGE NO.	DESCRIPTION OF CHANGE
DESCRIPTION & OPERATION 1	Added clarifications and updated callouts.
101	Changed the resistance values for glass and acrylic windows.

BOEING

COMPONENT
MAINTENANCE MANUAL

NO. 3 WINDOW ASSEMBLY

PART NUMBERS 141T4820-1,-2,-13,-14
141T4004-1,-2,-21,-22

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

BOEING
COMPONENT
MAINTENANCE MANUAL

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
767-30-0020R1		PRR 12372 PRR B12642	OCT 01/92 MAR 01/95 JUN 01/95

PAGE	DATE	CODE
56-11-06		
TITLE PAGE		
1	DEC 01/95	01.1
2	BLANK	
REVISION RECORD		
1	JUN 01/95	01.1
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TR & SB RECORD		
1	JUN 01/95	01.1
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LIST OF EFFECTIVE PAGES		
*1	JUL 01/05	01
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CONTENTS		
1	JUN 01/95	01.1
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*1	JUL 01/05	01.1
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TESTING & TROUBLE SHOOTING		
*101	JUL 01/05	01.1
102	NOV 01/00	01.1
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301	JUN 01/95	01.1
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501	JUN 01/95	01.1
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503	JUN 01/95	01.1
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505	SEP 01/97	01.1
506	BLANK	
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601	MAR 01/99	01.1
602	JUN 01/95	01.1
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601	JUN 01/95	01.1
602	JUN 01/95	01.1
603	JUN 01/95	01.1
604	JUN 01/95	01.1
605	JUN 01/95	01.1
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REPAIR 2-1		
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602	DEC 01/95	01.101
603	DEC 01/95	01.1
604	DEC 01/95	01.1
ASSEMBLY		
701	JUN 01/95	01.1
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ILLUSTRATED PARTS LIST		
1001	JUN 01/95	01.1
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1010	JUN 01/95	01.1
1011	DEC 01/95	01.1
1012	DEC 01/95	01.1

* = REVISED, ADDED OR DELETED

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 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.

Verification:

Testing/TS: Jan 10/1986

DESCRIPTION AND OPERATION

1. Description

A. Number 3 window 141T4820: This window has two stretched acrylic plastic inner and outer plies with a thin, plasticized vinyl layer between them, a silicone rubber pressure seal, an aluminum ring, an aluminum retaining ring, three corrosion resistant steel hoisting-inserts, an edge member, two temperature sensors, and other parts and subassemblies. The pressure seal is located on the inner surface of the ring and the moisture seal is located on the inner surface of the retaining ring. Hoisting inserts are installed in the lower corners and the top of the window.

B. Number 3 window 141T4004: This window has three main plies separated by urethane and PVB interlayers. The outer ply (0.12 inch thick), the core ply (0.23-0.25 inch thick) and the inner ply (0.23-0.25 inch thick) are made of tempered glass. The outboard surface of the inner ply is covered with a conductive coating. Bus bars are embedded in the window adjacent to the conductive film. Two sensors are bonded to the inner ply. The window has spacers and phenolic edge fillers located around the window periphery. A pre-molded pressure seal is bonded to the edge reinforcement and a pre-molded moisture seal is bonded to the outer retaining ring.

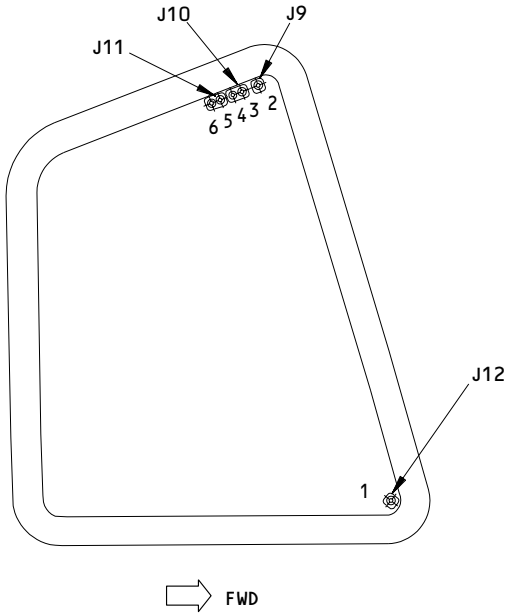
2. Leading Particulars (Approximate)

Length -- 32 inches
Width -- 26 inches
Thickness -- 2 inches
Weight -- 42 pounds (acrylic window 141T4820)
-- 44 pounds (glass window 141T4004)

TESTING AND TROUBLE SHOOTING

1. Resistance Check

A. With a wheatstone bridge, make a check of the bus-to-bus and sensor resistance as shown in Fig. 101.



WINDOW	TERMINAL	TERMINAL LOCATION	RESISTANCE (OHMS)
141T4820 (ACRYLIC)	J9-J12	1-2	19.48 - 26.35
141T4004 (GLASS)	J9-J12	1-2	20.2 - 24.8
ALL	J10	3-4	SEE TABLE B
ALL	J11	5-6	SEE TABLE B

TABLE A

J9,J12: POWER TERMINAL
J10: SENSOR TERMINAL (SPARE)
J11: SENSOR TERMINAL (CONTROL)

No. 3 Window Resistance Values
Figure 101 (Sheet 1)

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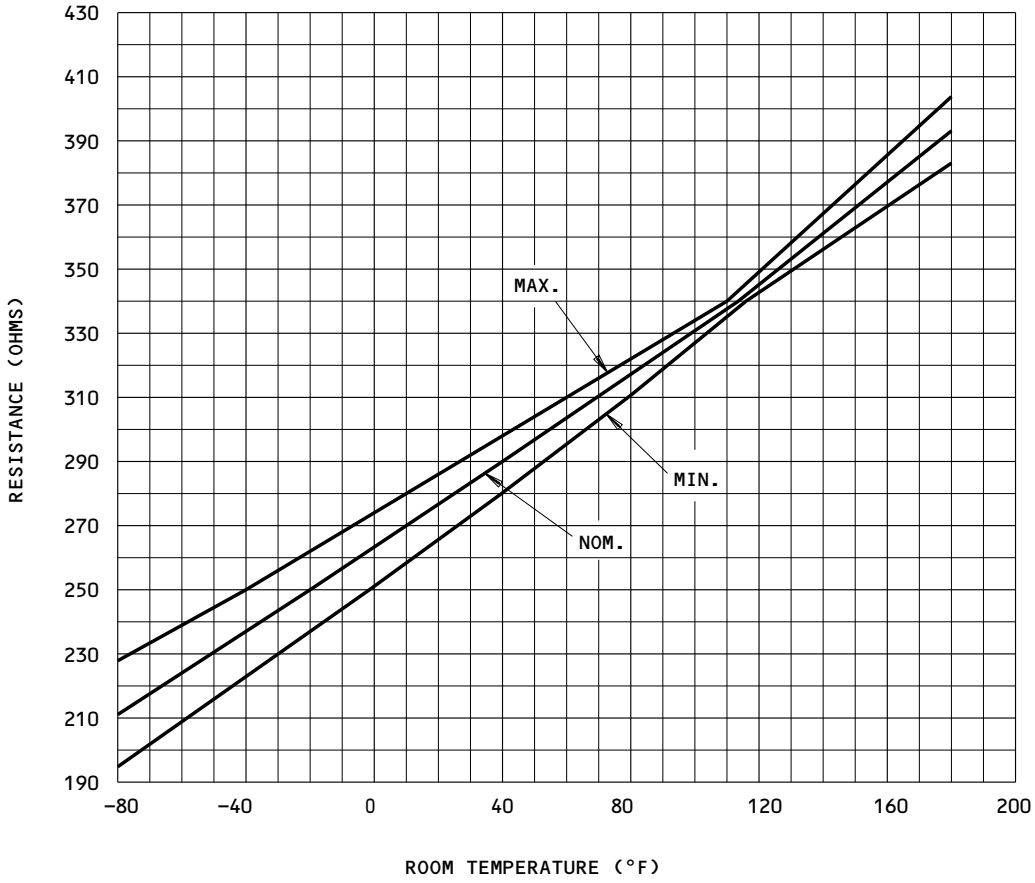


TABLE B

NOTE: CHARACTERISTICS SHOWN EQUIVALENT TO
WESTINGHOUSE AVK 1160

No. 3 Window Resistance Values
Figure 101 (Sheet 2)

DISASSEMBLY

1. The No. 3 window assembly is composed of laminated assemblies bonded together in an autoclave with heat and pressure, therefore disassembly procedures of window should be performed only by manufacturer.

CLEANING

1. Materials

   A. Solvent -- TT-N-95, Aliphatic Naphtha

2. Cleaning

   A. Clean all parts in accordance with standard industry practices with the exception of the following.

   CAUTION: DO NOT RUB DRY PLASTIC WITH DRY CLOTH. THIS CAN CAUSE SCRATCHES AND AN ELECTROSTATIC CHARGE WHICH ATTRACTS DUST PARTICLES.

   B. Clean windowpanes with lukewarm water or castile soap. Use soft, clean cloth for transfer of soap solution to pane, but go over surface with bare hand only to detect and remove dirt that could scratch surface. Wipe dry with clean, damp chamois.

   C. Clean seals (35, 40, 120, 125, IPL Fig. 1; 35, 40, 155, 160, IPL Fig. 2) and retaining rings (25, 30, 110, 115, IPL Fig. 1; 25, 30, IPL Fig. 2) with aliphatic naphtha applied with clean, oil-free, absorbent materials. Wipe off solvent before it evaporates, using clean, oil-free and lint-free cloth. Repeat applications of clean solvent as necessary.

CHECK

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

2. Check pressure seals (120, 125, IPL Fig. 1; 155, 160, IPL Fig. 2) for fraying, gaps, or voids.

3. Check moisture seals (35, 40, IPL Fig. 1, 2) for any lack of adhesion to retaining rings (25, 30, IPL Fig. 1, 2), or any sign of leakage.

4. Window defect definitions are as follows:

   A. Crazing (Acrylic windows only): A series of very fine fissures perpendicular to surface of the pane. Due to extremely narrow width of fissures, crazing is very difficult to detect when viewed normal to the surface. It can be seen by reflection from smooth surfaces of fissures when viewed at varying angles to the incident light.

   B. Crack: A fissure which has visible width when viewed parallel to the faces of the fissure. A crack may propagate at any angle to the surface of a plastic pane depending on direction of the driving force. Cracks in stretched acrylic may have a chevron or clamshell growth lines (Fig. 501). A crack will propagate from a stress riser such as a scratch or craze.

   C. Scratch: The removal or displacement of material from the surface of a pane along a line. The ratio of depth to width is usually quite small.

   D. Chips:

      (1) Spall (shell type) chips have circular or curved periphery with many fine hairlines or ridges that follow the outline of outer edge and degenerate toward the center or deepest point of chip, similar to a clamshell.

(2) Vee shaped chips have sharp narrow "V" shape and appear to propagate toward the interior of plastic.

E. In-plane cracking (also called delamination): A smooth surfaced fissure, or series of fissures, parallel to pane surfaces. In-plane cracking can occur in stretched acrylic and starts at edges of pane or at deep penetrations of the surface. It is most readily detected by the reflection of light from the smooth surfaces of the fissure.

5. Check acrylic panes (P/N 141T4820) for crazing, cracks, scratches, chips, and delamination as follows:

A. Crazing, scratches, and chips -- allowed up to 0.050 inch in depth only if visibility is not impaired.

B. Delamination -- allowed only if visibility is not impaired.

C. Cracks -- in boltholes and rabbet radius: not allowed.
-- remainder of window: allowed up to 0.050 inch in depth only if visibility is not impaired.

D. Check acrylic panes for edge damage per Fig. 502.

6. Check terminal caps and terminals for adhesion. Terminal cap (90) and terminal (75) must be able to withstand a 30 pound-inch torque, terminal cap (95) and terminal (80) must be able to withstand a 16 pound-inch torque.

7. Check glass panes (P/N 141T4004) for scratches and chips as follows:

A. Scratches

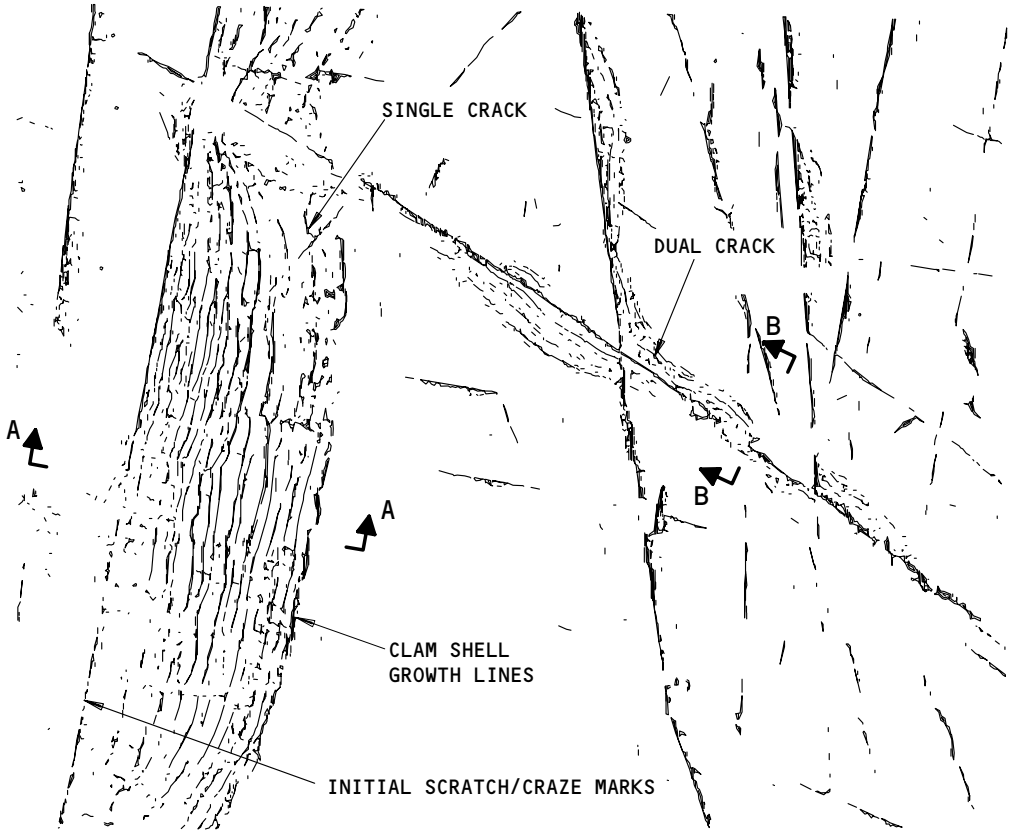
(1) Outer glass ply (45, 50, IPL Fig. 2) -- allowed only if visibility is not impaired.

(2) Inner glass ply (95, 100, IPL Fig. 2) -- scratches may not exceed 0.002 inch in depth.

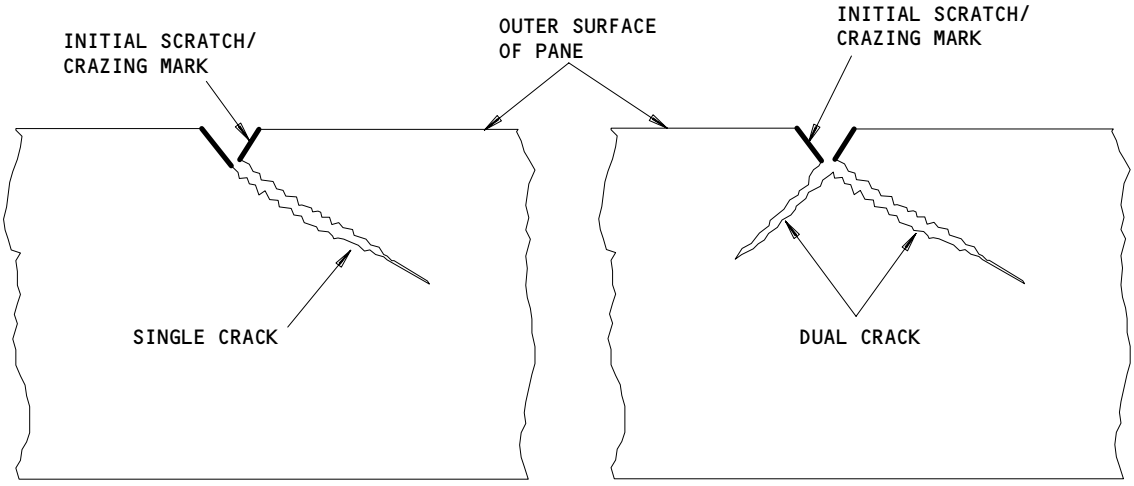
B. Chips

(1) Chips in main glass plies -- not allowed.

(2) Chips in the outer ply (45, 50, IPL Fig. 2) -- allowed only if visibility is not impaired.

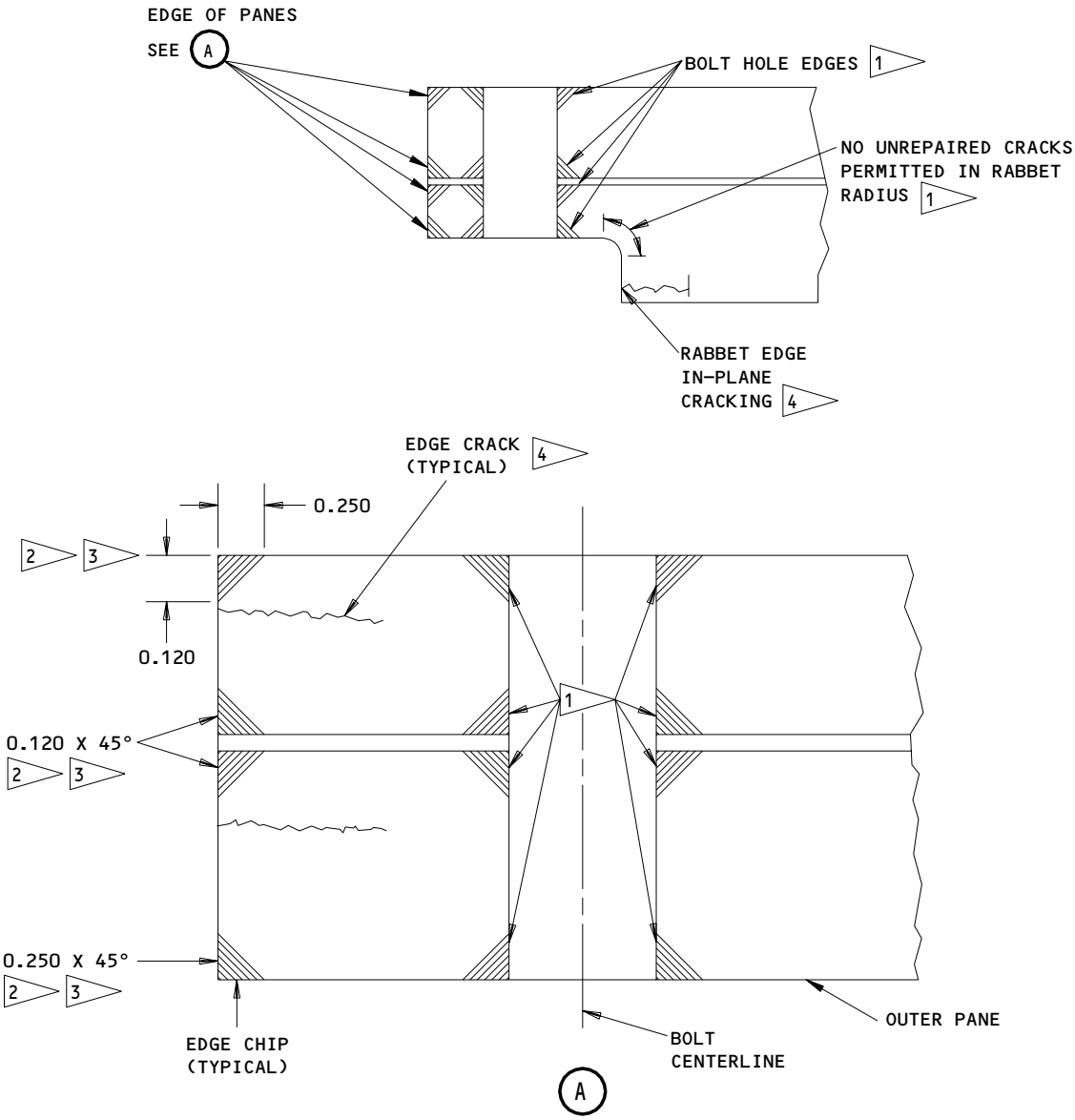


WINDOW SURFACE



A–A B–B

Window Surface Damage
Figure 501



NOTE: ALL DIMENSIONS ARE IN INCHES

1 WINDOW IS NOT SERVICEABLE UNLESS DAMAGE IN THIS AREA IS REPAIRED

2 MAY BE SMOOTHED TO 62RPMS FINISH

3 ONLY ONE DEFECT PERMITTED WITHIN ANY CROSS SECTION OF THE INNER OR OUTER PANE WHEN DEFECT IS WITHIN ONE INCH OF MOUNTING HOLE CENTER LINE. THIS LIMITATION DOES NOT APPLY TO DEFECTS MORE THAN ONE INCH FROM MOUNTING BOLT HOLE CENTER LINE

4 WINDOW IS NOT SERVICEABLE UNLESS EDGE CRACKS (IN-PLANE CRACKS) PARALLEL TO THE PANE FACE ARE REPAIRED

Acrylic Edge Damage
Figure 502

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REPAIR - GENERAL

1. Content

A. Repair procedures are included in separate repair section as follows:

P/N	NAME	REPAIR
141T4820	NO. 3 WINDOW ASSEMBLY (ACRYLIC)	1-1
141T4004	NO. 3 WINDOW ASSEMBLY (GLASS)	2-1

2. Materials

NOTE: Equivalent substitutes may be used.

A. Adhesive -- RTV 157 (Ref 20-60-04)

B. Buffing Compound -- Learok 5-30 (Ref 20-60-04)

C. Polish -- Learok 888 (Ref 20-60-04, Buffing Compound)

D. Primer -- DC 1200 (Ref 20-60-04)

E. Protective Coating -- Spraylat 5C-1071 (Ref 20-44-02)

F. Protective Tape -- 3M No. 670 or Y-9017 (Ref 20-60-04)

G. Sandpaper, Aluminum Oxide -- Any source

H. Solvent -- Aliphatic Naphtha, TT-N-95 (Ref 20-30-03)

I. Cement -- PS-30 (Ref 20-60-04)

J. Tape, Masking -- Any source

K. Sandpaper -- Wet-or-dry, 240 grit, any source

L. Wax -- Johnson paste
-- McQuires wax system--MGH #17 Cleaner, MGH #10 Wax
P. O. Box 5414, Pasadena, Calif. 91107

M. Sealant -- PR1425 (Ref 20-60-04)

N. Adhesive -- Dow Corning 732
3901 South Saginaw Rd, Midland, Michigan 48641-2721

3. Standard Practices

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

20-11-03 Repair of Electrical Terminations and Electrical Bonding Areas
20-30-02 Stripping of Protective Finishes
20-30-03 General Cleaning Procedures
20-44-02 Temporary Protective Coatings
20-50-12 Application of Adhesives

NO. 3 WINDOW ASSEMBLY (ACRYLIC) - REPAIR 1-1

141T4820-1, -2, -13, -14

1. Repair chipped or scratched side window (1, 5, IPL Fig. 1).

   A. Clean window on both sides.

   B. Cover undamaged side of window with protective tape or coating.

   C. Remove superficial scratches by applying polish to wet, clean cloth and rubbing window. Use circular motion, starting at pane center, and work outward. Use clean, flannel cloth for each operation.

   CAUTION: AVOID OVERHEATING WINDOW. KEEP BUFFING WHEEL IN CONSTANT MOTION OVER WINDOW SO THAT WINDOW SURFACE TEMPERATURE DOES NOT EXCEED 125° TO 130°F. AT THIS TEMPERATURE, WINDOW WILL NOT FEEL HOT WHEN TOUCHED BY THE BACK OF HAND WITHIN 2 SECONDS OF REMOVING PANE FROM BUFFING WHEEL.

   D. Remove minor scratches and surface crazing by machine polishing or buffing.

      (1) Buff if required with coarse compound (Learock S-30) at wheel surface speed of 3200 feet per minute using stitched muslin wheel.

      (2) Polish to high gloss with Learock 888 using loosely stitched flannel wheel at wheel surface speed of 4200 feet per minute.

   E. Remove chips or buildup material on major scratches by hand sanding.

      (1) Using presoaked (wet-or-dry No. 400-A) sandpaper wrapped around sanding block, sand across buildup at approximately 45 degrees within diameter of approximately 4 inches. Change sandpaper as required.

      (2) Remove sanding abrasions by sanding with No. 600-A wet-or-dry sandpaper.

   F. Polish window with wax as follows:

      (1) Thoroughly agitate wax to ensure homogeneous mixture.

      (2) Apply wax directly to acrylic surface or to flannel polishing cloth and spread thin coat evenly and thoroughly over surface.

      (3) Remove excess wax with flannel cloth.

(4) Polish to high luster by light polishing with clean, flannel cloth.

NOTE: Polishing may be done before or after wax has dried.

(5) Remove any streaks or fingerprints from waxed acrylic by lightly polishing with clean, flannel cloth. If appearance is still unsatisfactory reapply wax in accordance with above procedure.

G. Measure window thickness after rework. Check that individual pane, and total window thickness, are not less than shown below:

(1) Inner pane (65, 70) -- 0.450 inch

(2) Outer pane (45, 50) -- 0.700 inch

(3) Window total -- 1.150 inch

2. Pressure Seal Replacement

A. If outer primary pressure seals (120, 125) require replacement, accomplish as follows:

(1) Removed damaged seals by scraping with plastic tool.

(2) Sand faying surfaces of frame with 600-grit sandpaper.

WARNING: ALIPHATIC NAPHTHA IS FLAMMABLE, INJURY OR DAMAGE COULD OCCUR.

(3) Remove sanding debris with aliphatic naphtha applied with clean cheesecloth. Remove solvent by wiping with clean, dry cloth.

(4) Prime frame with DC 1200 primer per manufacturer's instructions.

(5) Bond new seals on frame with RTV 157 adhesive per manufacturer's instructions.

3. Moisture Seal Replacement

A. If moisture seal (35, 40) requires replacement, accomplish as follows:

(1) Remove damaged seals by scraping with plastic tool.

(2) Sand faying surfaces of frame with 600-grit sandpaper.

WARNING: ALIPHATIC NAPHTHA IS FLAMMABLE, INJURY OR DAMAGE COULD OCCUR.

(3) Remove debris with aliphatic naphtha applied with clean cheesecloth. Remove solvent by wiping with clean dry cloth.

(4) Prime ring with DC1200 primer per manufacturers instructions.

(5) Bond new moisture seal on ring with RTV 157 adhesive per manufacturer's instructions.

4. Terminal Cap (90, 95) Replacement

CAUTION: PREPARE THE FAYING SURFACES SO THAT THE TWO PIECES TO BE BONDED FIT ACCURATELY.

A. Remove the old adhesive and abrade the faying surfaces with 240 grit wet-or-dry sandpaper per Fig. 601.

WARNING: ALIPHATIC NAPHTHA IS FLAMMABLE, INJURY OR DAMAGE COULD OCCUR.

B. After abrading, clean the faying surfaces with aliphatic naptha, or soap and water followed by aliphatic naptha.

C. Dry thoroughly prior to application of adhesive.

D. Mask the surrounding window a minimum of one inch from the bonding area and within 0.031 inch of bond area to confine the softening action of the adhesive.

E. Mix PS-30 adhesive or PR 1425 sealant per manufacturer's instructions.

NOTE: PR 1425 sealant may be used as bonding agent in place of PS-30 adhesive.

F. Apply a light coat of PS-30 adhesive or optional PR 1425 sealant to both faying surfaces.

CAUTION: WHEN APPLYING PRESSURE WITH SPRING CLAMPS OR WEIGHTS, USE ONLY ENOUGH PRESSURE TO HOLD SURFACES TOGETHER. EXCESSIVE PRESSURE CAN CAUSE CRAZING AND FORCES THE ADHESIVE FROM THE BOND AREA.

G. Join the surfaces immediately after coating and apply pressure during cure cycle.

H. Allow to dry per manufacturer's instructions.

5. Power and Sensor Terminal Repair

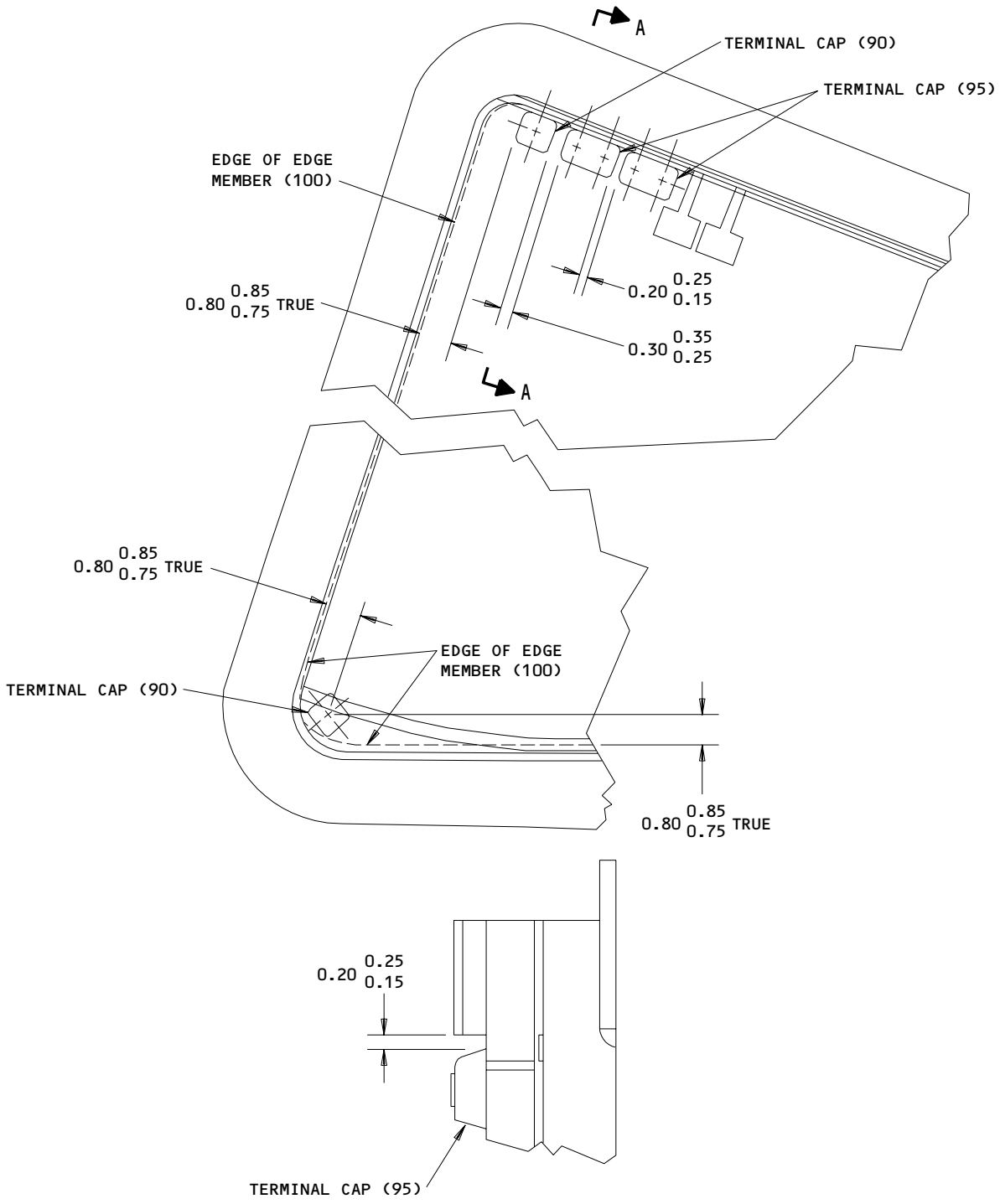
A. Remove the terminal cap (90, 95) as shown in step 4.

B. Remove the amount of acrylic as shown in Fig. 602.

CAUTION: USE A HEAT SINK WHILE SOLDERING TO MINIMIZE THERMAL DAMAGE TO ACRYLIC PANE.

C. Solder lead extension and fill void with PS-30 adhesive or optional PR 1425 sealant.

D. Install terminal cap (90, 95) as shown in step 4.



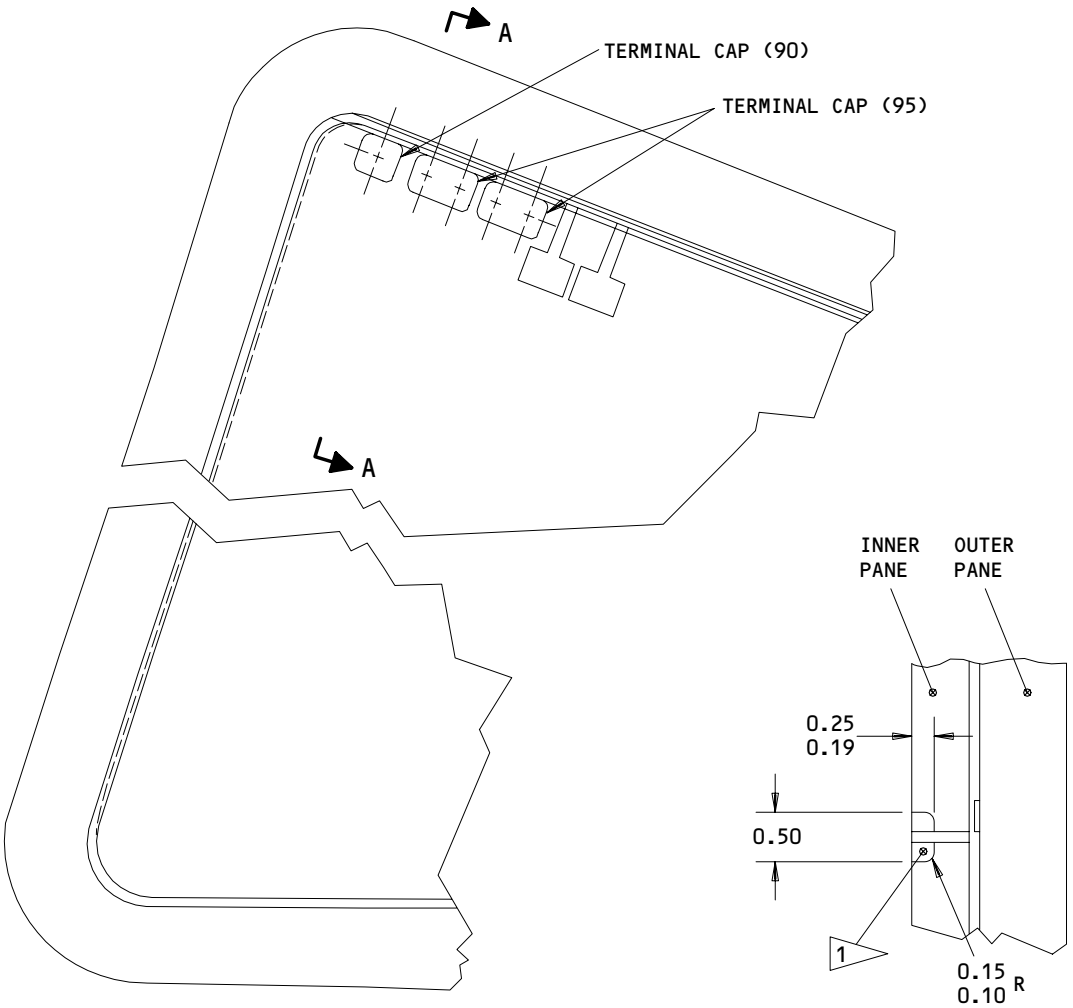
A-A

SEALS (35,120) OMITTED

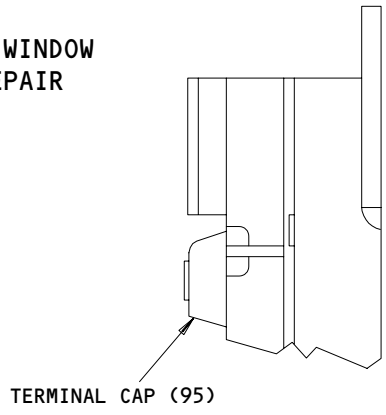
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

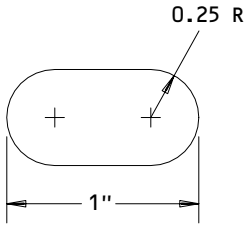
141T4820-1,-2,-13,-14
Terminal Cap Repair
Figure 601



COCKPIT WINDOW NO. 3 WINDOW
POWER AND SENSOR REPAIR



A-A



VIEW LOOKING
DOWN

1 REMOVE THE AMOUNT OF ACRYLIC AS SHOWN. SOLDER LEAD EXTENSION AND FILL VOID WITH PS30. USE A HEAT SINK WHILE SOLDERING TO MINIMIZE THERMAL DAMAGE TO ACRYLIC PANE.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

141T4820-1,-2,-13,-14
Window Power and Sensor Repair
Figure 602

NO. 3 WINDOW ASSEMBLY (GLASS) - REPAIR 2-1

141T4004-1, -2, -21, -22

1. Terminal Block Replacement (115, 130, IPL Fig. 2)

   A. Remove the adhesive with plastic chisel.

   WARNING: ALIPHATIC NAPHTHA IS FLAMMABLE, INJURY OR DAMAGE COULD OCCUR.

   B. Clean the faying surfaces with aliphatic naphtha or soap and water followed by aliphatic naphtha.

   C. Dry surface thoroughly prior to application of adhesive.

   D. Mask the surrounding window a minimum of 1.0 inch from the bonding area and within 0.031 inch of the bond area.

   E. Mix PR 1425 sealant per manufacturer's instructions.

   F. Apply a thin coat of PR 1425 sealant evenly to both faying surfaces.

   CAUTION: APPLY ONLY SUFFICIENT PRESSURE TO THE SPRING CLAMPS OR WEIGHTS TO HOLD SURFACES TOGETHER. EXCESSIVE PRESSURE CAN FORCE THE ADHESIVE OUT OF THE BOND AREA.

   G. Put terminal block (115, 130) on window immediately after application of the sealant. Apply pressure during cure time.

   H. For window assemblies, 141T4004-21 and 141T4004-22 fill gap between power terminal block (115) and window assembly with PR1425 sealant.

   I. Allow to dry per manufacturer's instructions.

2. Pressure Seal Replacement

   A. If pressure seal (155, 160, IPL Fig. 2) requires replacement, accomplish as follows:

      (1) Remove pressure seal (155, 160, IPL Fig. 2) by scraping with plastic tool.

      (2) Remove old bonding material from edge reinforcement (145, 150).

      WARNING: ALIPHATIC NAPHTHA IS FLAMMABLE, INJURY OR DAMAGE COULD OCCUR.

      (3) Clean surface with aliphatic naphtha applied with a clean cheesecloth. Remove solvent by wiping with clean, dry cloth.

(4) Bond new pressure seal (155, 160) onto edge reinforcement (145, 150) with RTV 157 adhesive or Dow Corning 732 per manufacturer's instructions.

3. Moisture Seal Replacement (35, 40, IPL Fig. 2)

A. If moisture seal (35, 40, IPL Fig. 2) requires replacement, accomplish as follows:

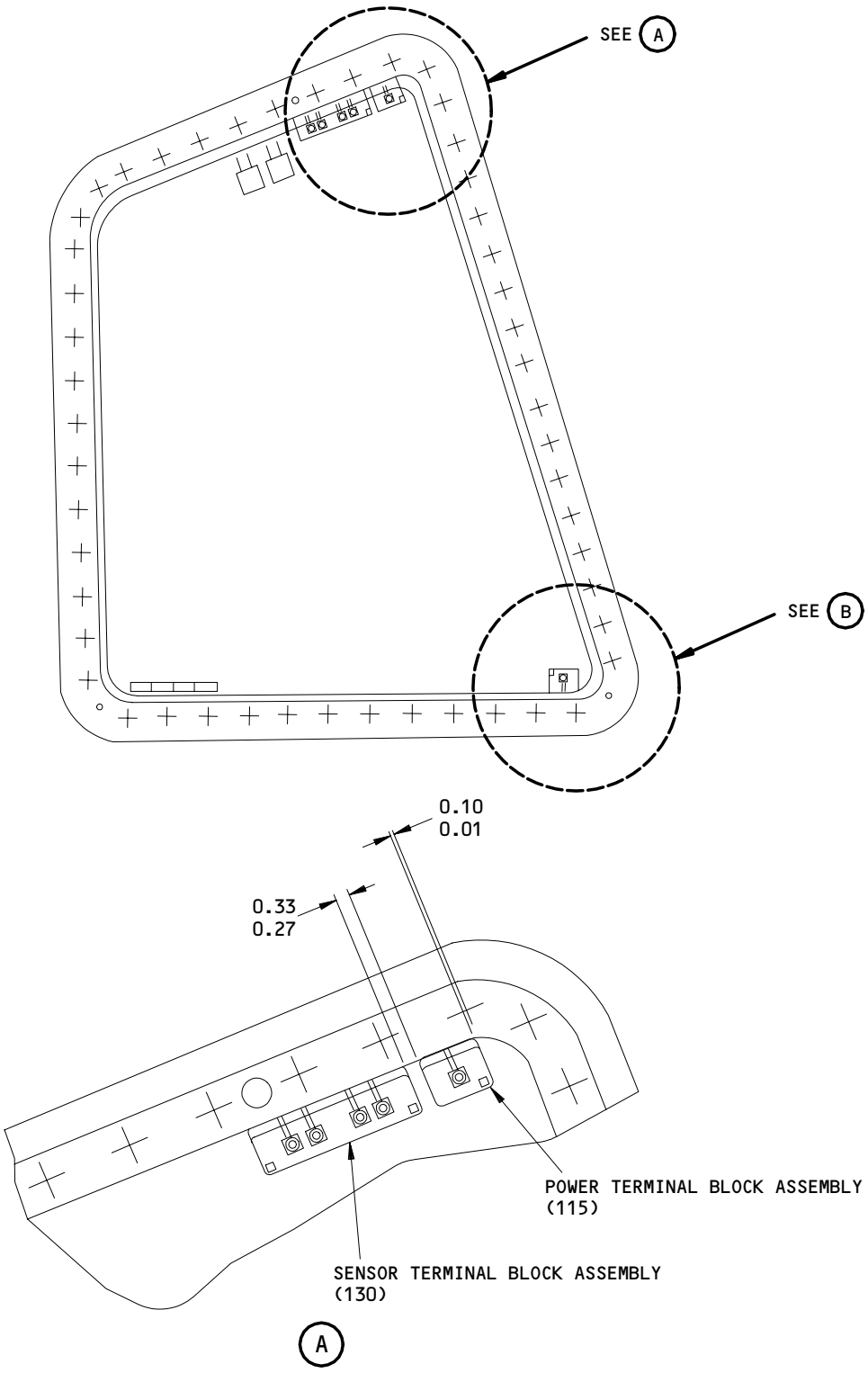
(1) Remove moisture seal by scraping with a plastic tool.

(2) Remove old bonding material from retainer ring (25, 30, IPL Fig. 2)

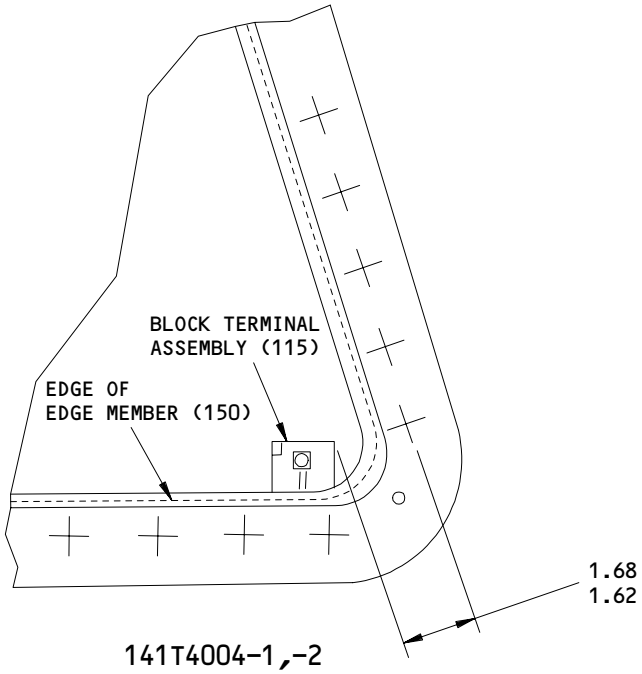
WARNING: ALIPHATIC NAPHTHA IS FLAMMABLE, INJURY OR DAMAGE COULD OCCUR.

(3) Clean surface with aliphatic naphtha applied iwth a clean cheesecloth. Remove solvent by wiping with clean dry cloth.

(4) Bond new moisture seal (35, 40) onto retainer ring with RTV 157 adhesive or Dow Corning 732 per manufacturer's instructions.

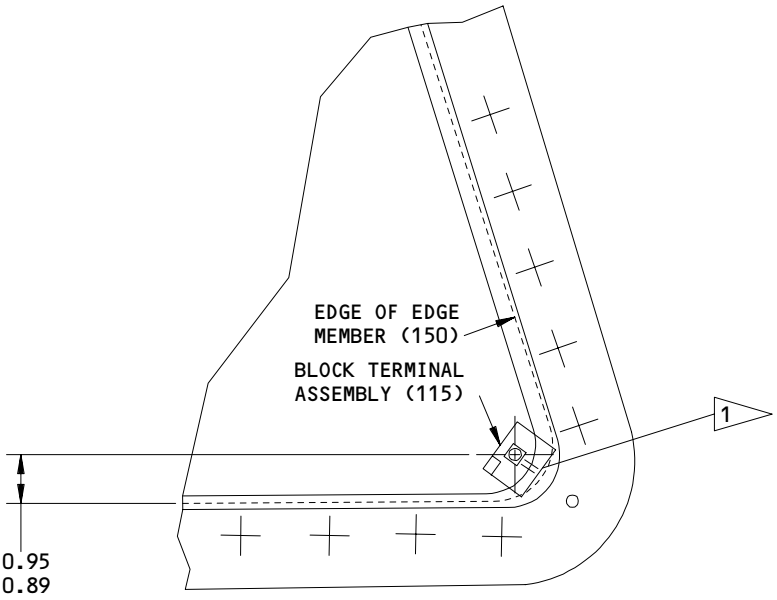


141T4004-1,-2,-21,-22
Terminal Block Replacement
Figure 601 (Sheet 1)



141T4004-1,-2

B



141T4004-21,-22

B

1 FILL GAP BETWEEN BLOCK TERMINAL ASSEMBLY (115) AND WINDOW ASSEMBLY WITH PR1425 SEALANT.

ITEM NUMBERS REFER TO IPL FIG. 2

ALL DIMENSIONS ARE IN INCHES

141T4004-1,-2,-21,-22
Terminal Block Replacement
Figure 601 (Sheet 2)

F40587

ASSEMBLY

CAUTION: DO NOT TIGHTEN SCREWS NAS1802-3-9 OR NAS1802-06-9 EXCEPT AT TIME OF WIRE BUNDLE INSTALLATION. DAMAGE TO E1190-14 SENSOR COULD RESULT FROM IMPROPERLY TIGHTENING SCREWS.

1. The No. 3 window assembly is composed of laminated assemblies bonded together in an autoclave with heat and pressure, therefore, assembly procedures of window should be performed only by manufacturer.

2. Storage

   A. Maintain protective covering on window assemblies and, if complete or partial removal of covering occurs, replace covering immediately. Ensure that no foreign material is present that could damage surface of window before coating reapplication.

   B. Wrap assemblies in vapor barrier paper and package in individual fiberboard or wooden containers.

   C. Store windows in a manner to prevent distortion, using simple frames to avoid external pressure on assemblies.

   D. The storage area should be dry (less than 65% relative humidity), the temperature should not exceed 100°F, and area must be free of vapors or harmful solvents, such as ketones, alcohol (except isopropyl alcohol), kerosene, benzene, zylene, tetrachloride, lacquer thinners, etc.

   E. For further information refer to 20-70-01, Protection, Storage, and Handling of Airplane Components.

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 are 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.

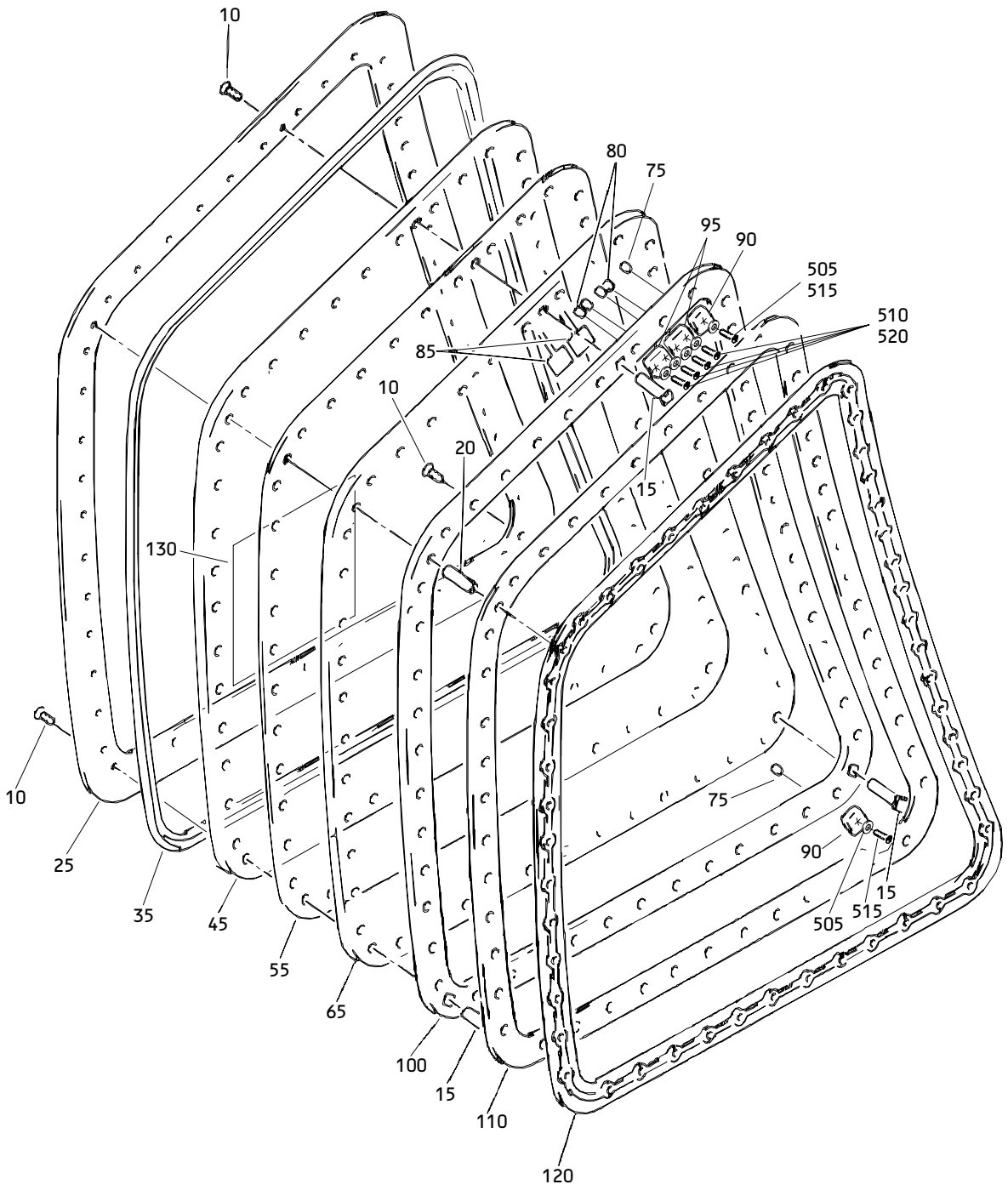
VENDORS

12035 SIERRACIN-SYLMAR
12780 SAN FERNANDO ROAD
SYLMAR, CALIFORNIA 91342-3728

53117 PPG INDUSTRIES INC
CENTRAL BANK BUILDING SUITE 777
HUNTSVILLE, ALABAMA 35801-48163

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
E1190-14		1	85	2
MS24693CB117		1	10	3
		2	10	3
MS35338-41		1	520	4
MS35338-43		1	515	2
NAS1802-06-10		1	510	4
NAS1802-3-10		1	505	2
NAS43DD5-93		1	20	50
141T4003-1		2	130	1
141T4003-2		2	140	1
141T4003-5		2	115	2
141T4003-6		2	125	1
141T4003-7		2	135	4
141T4003-8		2	120	1
141T4004-1		1	3	RF
		2	1A	RF
141T4004-11		2	95	1
141T4004-12		2	100	1
141T4004-13		2	105	1
141T4004-14		2	110	1
141T4004-15		2	145	1
141T4004-16		2	150	1
141T4004-17		2	75	1
141T4004-18		2	80	1
141T4004-19		2	90	1
141T4004-2		1	7	RF
		2	5	RF
141T4004-21		1	3A	RF
		2	1B	RF
141T4004-22		1	7A	RF
		2	5A	RF
141T4004-3		2	45	1
141T4004-4		2	50	1
141T4004-5		2	55	1
141T4004-6		2	60	1
141T4004-7		2	65	1
141T4004-8		2	70	1
141T4004-9		2	85	1
141T4005-1		2	25	1
141T4005-2		2	30	1
141T4820-1		1	1	RF
141T4820-10		1	105	1
141T4820-11		1	130	1
141T4820-12		1	135	1
141T4820-13		1	1A	RF
141T4820-14		1	5A	RF
141T4820-2		1	5	RF

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ
141T4820-3		1	45	1
141T4820-4		1	50	1
141T4820-5		1	65	1
141T4820-6		1	70	1
141T4820-7		1	55	1
141T4820-8		1	60	1
141T4820-9		1	100	1
141T4823-1		1	120	1
		2	155	1
141T4823-2		1	125	1
		2	160	1
141T4824-1		1	35	1
		2	35	1
141T4824-2		1	40	1
		2	40	1
141T4825-1		1	25	1
141T4825-2		1	30	1
141T4825-3		1	25A	1
141T4825-4		1	30A	1
141T4826-1		1	110	1
141T4826-2		1	115	1
141T4827-1		1	15	3
22-08-1761		2	20	50
22-08-1762		2	15	3
22-17-4921		2	115A	2
22-17-4922		2	130A	1
500007-02		1	80	4
500007-1		1	75	2
500202-1		1	90	2
500205-1		1	95	2

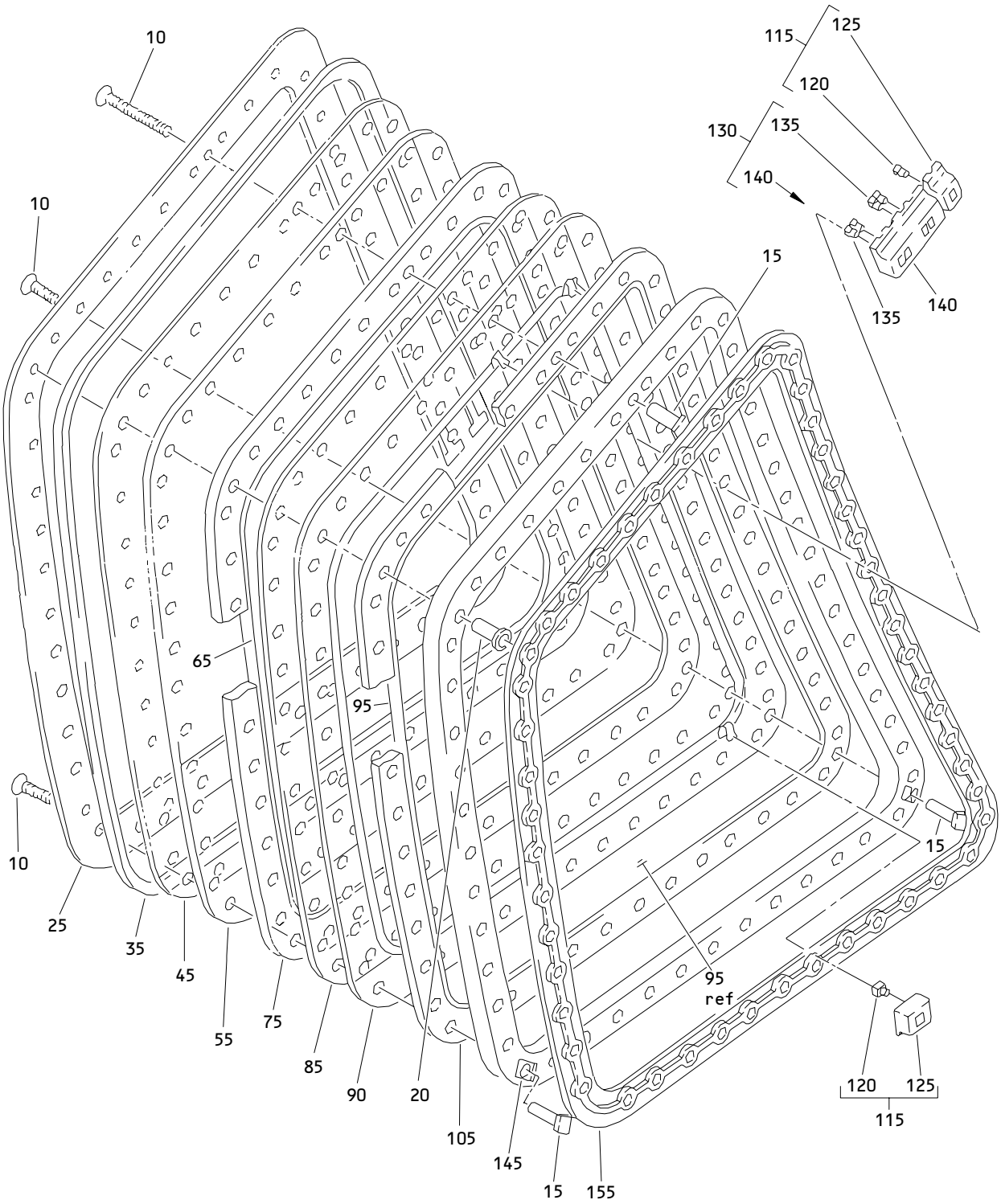


No. 3 Window Assembly
Figure 1

T93729

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	141T4820-1		WINDOW ASSY-NO. 3	A	RF
-1A	141T4820-13		WINDOW ASSY-NO. 3	C	RF
-3	141T4004-1		WINDOW ASSY-NO. 3 (FOR DETAILS SEE FIG. 2)	E	RF
-3A	141T4004-21		WINDOW ASSY-NO. 3 (FOR DETAILS SEE FIG. 2)	G	RF
-5	141T4820-2		WINDOW ASSY-NO. 3	B	RF
-5A	141T4820-14		WINDOW ASSY-NO. 3	D	RF
-7	141T4004-2		WINDOW ASSY-NO. 3 (FOR DETAILS SEE FIG. 2)	F	RF
-7A	141T4004-22		WINDOW ASSY-NO. 3 (FOR DETAILS SEE FIG. 2)	H	RF
10	MS24693CB117		.SCREW	A-D	3
15	141T4827-1		.INSERT-HOISTING	A-D	3
20	NAS43DD5-93		.SPACER	A-D	50
25	141T4825-1		.RING-RETAINING	A	1
-25A	141T4825-3		.RING-RETAINING	C	1
-30	141T4825-2		.RING-RETAINING	B	1
-30A	141T4825-4		.RING-RETAINING	D	1
35	141T4824-1		.SEAL-MOISTURE	A,C	1
-40	141T4824-2		.SEAL-MOISTURE	B,D	1
45	141T4820-3		.PLY-OUTER	A,C	1
-50	141T4820-4		.PLY-OUTER	B,D	1
55	141T4820-7		.INTERLAYER	A,C	1
-60	141T4820-8		.INTERLAYER	B,D	1
65	141T4820-5		.PLY-INNER	A,C	1
-70	141T4820-6		.PLY-INNER	B,D	1
75	500007-1		.TERMINAL- (V12035)	A-D	2
80	500007-02		.TERMINAL- (V12035)	A-D	4
85	E1190-14		.SENSOR- (V12035)	A-D	2
90	500202-1		.CAP-TERMINAL (V12035)	A-D	2
95	500205-1		.CAP-TERMINAL (V12035)	A-D	2
100	141T4820-9		.MEMBER-EDGE	A,C	1
-105	141T4820-10		.MEMBER-EDGE	B,D	1
110	141T4826-1		.RING	A,C	1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-115	141T4826-2		.RING	B,D	1
120	141T4823-1		.SEAL-PRESSURE	A,C	1
-125	141T4823-2		.SEAL-PRESSURE	B,D	1
130	141T4820-11		.LABEL-TORQUE	A,C	1
-135	141T4820-12		.LABEL-TORQUE	B,D	1
			INSTALLATION PARTS		
505	NAS1802-3-10		SCREW	A-D	2
510	NAS1802-06-10		SCREW	A-D	4
515	MS35338-43		WASHER	A-D	2
520	MS35338-41		WASHER	A-D	4



No. 3 Window Assembly
Figure 2

FO3921

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
-1A	141T4004-1		WINDOW ASSY-NO. 3	E	RF
-1B	141T4004-21		WINDOW ASSY-NO. 3	G	RF
-5	141T4004-2		WINDOW ASSY-NO. 3	F	RF
-5A	141T4004-22		WINDOW ASSY-NO. 3	H	RF
10	MS24693CB117		.SCREW		3
15	22-08-1762		.INSERT-HOISTING (V53117)		3
20	22-08-1761		.SPACER (V53117)		50
25	141T4005-1		.RING-RETAINING	EG	1
-30	141T4005-2		.RING-RETAINING	FH	1
35	141T4824-1		.SEAL-MOISTURE	EG	1
-40	141T4824-2		.SEAL-MOISTURE	FH	1
45	141T4004-3		.PLY-FACE	EG	1
-50	141T4004-4		.PLY-FACE	FH	1
55	141T4004-5		.INTERLAYER-OUTBD	EG	1
-60	141T4004-6		.INTERLAYER-OUTBD	FH	1
65	141T4004-7		.PLY-MAIN OUTBD	EG	1
-70	141T4004-8		.PLY-MAIN OUTBD	FH	1
75	141T4004-17		.FILLER-OUTBD	EG	1
-80	141T4004-18		.FILLER-OUTBD	FH	1
85	141T4004-9		.INTERLAYER-INNER		1
90	141T4004-19		.INTERLAYER-PVB		1
95	141T4004-11		.PLY-MAIN INBD	EG	1
-100	141T4004-12		.PLY-MAIN INBD	FH	1
105	141T4004-13		.FILLER-INBD	EG	1
-110	141T4004-14		.FILLER-INBD	FH	1
115	141T4003-5		.TERMINAL ASSY-BLK (OPT ITEM 115A)		2
-115A	22-17-4921		.TERMINAL ASSY-PWR (V53117) (OPT ITEM 115)		2
120	141T4003-8		..TERMINAL (USED ON ITEM 115)		1
125	141T4003-6		..BASE-TERM (USED ON ITEM 115)		1
130	141T4003-1		.BLOCK ASSY-TERM (OPT ITEM 130A)		1
-130A	22-17-4922		.TERMINAL-SENSOR (V53117) (OPT ITEM 130)		1
135	141T4003-7		..TERMINAL-SENSOR (USED ON ITEM 130)		4
140	141T4003-2		..CAP (USED ON ITEM 130)		1

FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
02-					
145	141T4004-15		.REINFORCEMENT-EDGE	EG	1
-150	141T4004-16		.REINFORCEMENT-EDGE	FH	1
155	141T4823-1		.SEAL-PRESSURE	EG	1
-160	141T4823-2		.SEAL-PRESSURE	FH	1