



Commercial
Airplane
Group

777

Service Bulletin

SPECIAL ATTENTION

Number: 777-29-0032

Date: August 09, 2007

ATA System: 2911

SUBJECT: HYDRAULIC POWER - Main Hydraulic Systems - Nose Landing Gear Alternate
Extension Hydraulic Tube - Change

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Summary

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Extension Hydraulic Tube - Change

BOEING RECOMMENDS THAT EACH OPERATOR EXAMINE THIS SERVICE BULLETIN IMMEDIATELY.

CONCURRENT REQUIREMENTS

None.

BACKGROUND

This change prevents damage to the subject hydraulic tube and possible fire caused by arcing of an external power connector in the P30 panel. If this service bulletin is not accomplished, there is a risk of fire and personal injury during ground operations if hydraulic fluid contacts an external power connector after arcing occurs.

An operator reported a fire in the main equipment center after the maintenance crew connected external power. The cause of the fire was traced to a failure of an external power connector in the P30 panel, which caused high-temperature arcing and splatter of molten copper on an adjacent hydraulic tube. The molten copper splatter created a hole in the tube, and hydraulic fluid sprayed into the power connector and caught on fire.

At the time of the fire, the airplane was at the gate and passengers were deplaning. The fire department responded to the fire and extinguished it. Five firemen were taken to the hospital because of fume inhalation. There were no injuries to the passengers, flight crew, or ground crew.

Boeing Service Related Problem (SRP) 777-SRP-24-0120 is related to this service bulletin.

ACTION (PRR 62777-46S)

In the main equipment center, wrap self-fusing fire resistant silicone tape around the section of the nose landing gear alternate extension hydraulic tube that is adjacent to the P30 panel.

EFFECTIVITY

777-200/-200LR/-300/-300ER airplanes. Refer to Paragraph 1.A.1., Airplanes for the list of affected airplanes.

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COMPLIANCE

The Federal Aviation Administration (FAA) will possibly release an Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Boeing recommends that this service bulletin be done within 36 months from the date on this service bulletin.

INDUSTRY SUPPORT INFORMATION

Boeing warranty remedies are not available for the configuration changes given in this service bulletin.

MANPOWER

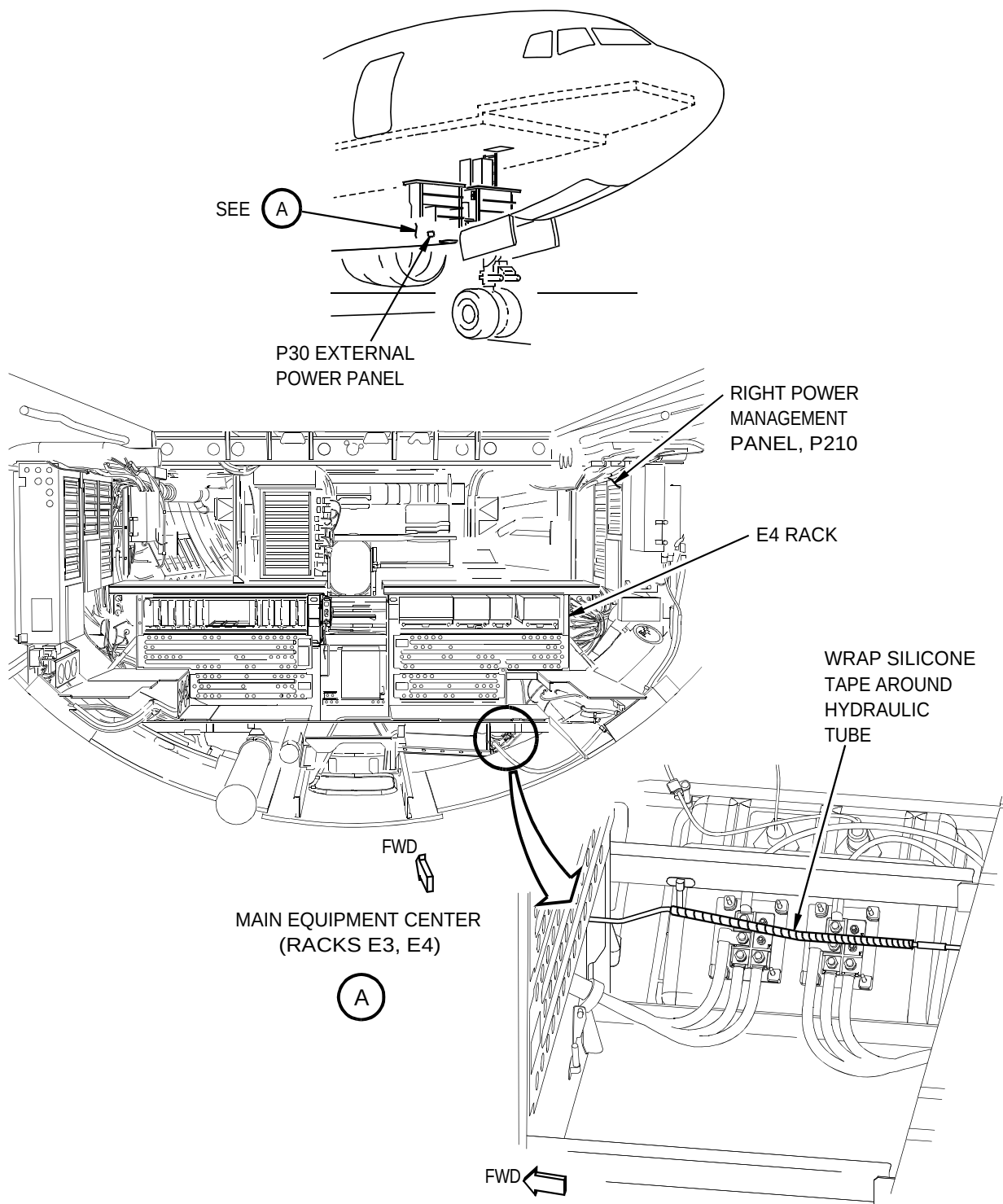
Airplanes	Total Task Hours	Elapsed Hours
All	2.00	2.00

MATERIAL INFORMATION

Operator Supplied Parts/Materials.

Refer to Paragraph 2.A., Material - Price and Availability.

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1. PLANNING INFORMATION

A. Effectivity

1. Airplanes

Refer to Service Bulletin Index Document D624W001 Part 3 for Airplane Variable Number, Line Number, and Serial Number data.

This service bulletin is for the airplanes shown below. An equivalent change is on subsequent production airplanes. Refer to PRR 62777-46S for data about this change.

GROUP	CONFIGURATION	DESCRIPTION
1	-	All affected airplanes

Airplane models:

777-200 777-200LR 777-300 777-300ER

IDENTIFICATION BY CUSTOMER, CUSTOMER CODE, GROUP AND VARIABLE NUMBER

AEROMEXICO (AMX)

1 WB341 WC521-WC522

AIR AUSTRAL (AUX)

1 WB366-WB368

AIR CHINA (BEJ)

1 WA241-WA250

AIR FRANCE (AFA)

1 WB311-WB335 WD521-WD533 WD546-WD549

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AIR INDIA (AIN)

1 WA007 WB058-WB059 WB070

AIR NEW ZEALAND (ANZ)

1 WC486-WC491

ALITALIA (ALI)

1 WC281-WC290

ALL NIPPON AIRWAYS (ANA)

1 WA131-WA137 WA221-WA223 WA231-WA232 WA301-WA304
WB481-WB484 WB531-WB537 WC506-WC508 WD561-WD565

AMERICAN AIRLINES (AAL)

1 WB416-WB439 WC051-WC073

ASIANA AIRLINES (AAR)

1 WC111-WC117

AUSTRIAN (AUL)

1 WB271-WB273

BOEING AIRCRAFT TRADING (BTU)

1 WA079-WA080

BRITISH AIRWAYS (BAB)

1 WA076-WA078 WB001-WB021 WB031-WB046 WB411-WB413

CATHAY PACIFIC AIRWAYS (CAT)

1 WA001 WA101-WA104 WB501-WB512

CHINA SOUTHERN AIRLINES (GUN)

1 WA116-WA119 WB121-WB125 WC441

CONTINENTAL AIRLINES (CAL)

1 WB371-WB388

DELTA AIR LINES (DAL)

1 WB446-WB453

EGYPTAIR (EGP)

1 WB151-WB155

EL AL ISRAEL AIRLINES (ELA)

1 WC101-WC104

EMIRATES (EAD)

1 WA196-WA198 WB101-WB106 WB631-WB638 WB646-WB649
WD581-WD589 WD606-WD608 WD621-WD627

ETIHAD AIRWAYS (ETI)

1 WD671-WD675

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EVA AIR (EVA)

1 WD651-WD653

ILFC (ILF)

1 WB342

JAL DOMESTIC (JAS)

1 WA206-WA212

JAL INTERNATIONAL (JAL)

1 WA171-WA175 WA281-WA282 WB591-WB597 WC241-WC243
WC301-WC308 WD501-WD506

KENYA AIRWAYS (KEN)

1 WC456-WC458

KLM - ROYAL DUTCH AIRLINES (KLM)

1 WC381-WC393

KOREAN AIR (KAL)

1 WB131-WB142 WB551-WB554

KUWAIT AIRWAYS (KUW)

1 WB306-WB307

MALAYSIA AIRLINES (MAS)

1 WB161-WB177

MID EAST JET (SKL)

1 WB406

PAKISTAN INT'L AIRLINES (PIA)

1 WC446-WC448 WD001-WD002

SAUDI ARABIAN AIRLINES (SVA)

1 WB276-WB286 WB291-WB302

SAUDI OGER (SAO)

1 WB476

SINGAPORE AIRLINES (SIA)

1 WB181-WB194 WB201-WB215 WB231-WB247 WB611-WB622

TAAG (ANGOLA AIRLINES) (ANG)

1 WC546

THAI AIRWAYS INTERNATIONAL (TII)

1 WA086-WA093 WB601-WB606

UNITED AIRLINES (UAL)

1 WA002-WA006 WA009-WA010 WA012-WA017 WA261-WA266
WB051-WB057 WB060-WB069 WB071 WB074-WB088

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VARIG AIRLINES (VAR)

1 WA008 WA011 WB072-WB073

VIETNAM AIRLINES (VIE)

1 WB336-WB337 WC361-WC364 WC371-WC374

IDENTIFICATION BY VARIABLE NUMBER

Variable	Group
WA001-WA017	1
WA076-WA080	1
WA086-WA093	1
WA101-WA104	1
WA116-WA119	1
WA131-WA137	1
WA171-WA175	1
WA196-WA198	1
WA206-WA212	1
WA221-WA223	1
WA231-WA232	1
WA241-WA250	1
WA261-WA266	1
WA281-WA282	1
WA301-WA304	1
WB001-WB021	1
WB031-WB046	1
WB051-WB088	1
WB101-WB106	1
WB121-WB125	1
WB131-WB142	1
WB151-WB155	1
WB161-WB177	1
WB181-WB194	1
WB201-WB215	1
WB231-WB247	1
WB271-WB273	1
WB276-WB286	1
WB291-WB302	1
WB306-WB307	1
WB311-WB337	1
WB341-WB342	1
WB366-WB368	1

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Variable	Group
WB371–WB388	1
WB406	1
WB411–WB413	1
WB416–WB439	1
WB446–WB453	1
WB476	1
WB481–WB484	1
WB501–WB512	1
WB531–WB537	1
WB551–WB554	1
WB591–WB597	1
WB601–WB606	1
WB611–WB622	1
WB631–WB638	1
WB646–WB649	1
WC051–WC073	1
WC101–WC104	1
WC111–WC117	1
WC241–WC243	1
WC281–WC290	1
WC301–WC308	1
WC361–WC364	1
WC371–WC374	1
WC381–WC393	1
WC441	1
WC446–WC448	1
WC456–WC458	1
WC486–WC491	1
WC506–WC508	1
WC521–WC522	1
WC546	1
WD001–WD002	1
WD501–WD506	1
WD521–WD533	1
WD546–WD549	1
WD561–WD565	1
WD581–WD589	1
WD606–WD608	1

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Variable	Group
WD621–WD627	1
WD651–WD653	1
WD671–WD675	1

2. Spares Affected

None.

B. Concurrent Requirements

None.

C. Reason

This change prevents damage to the subject hydraulic tube and possible fire caused by arcing of an external power connector in the P30 panel. If this service bulletin is not accomplished, there is a risk of fire and personal injury during ground operations if hydraulic fluid contacts an external power connector after arcing occurs.

An operator reported a fire in the main equipment center after the maintenance crew connected external power. The cause of the fire was traced to a failure of an external power connector in the P30 panel, which caused high-temperature arcing and splatter of molten copper on an adjacent hydraulic tube. The molten copper splatter created a hole in the tube, and hydraulic fluid sprayed into the power connector and caught on fire.

At the time of the fire, the airplane was at the gate and passengers were deplaning. The fire department responded to the fire and extinguished it. Five firemen were taken to the hospital because of fume inhalation. There were no injuries to the passengers, flight crew, or ground crew.

Boeing Service Related Problem (SRP) 777-SRP-24-0120 is related to this service bulletin.

D. Description

In the main equipment center, wrap self-fusing fire resistant silicone tape around the section of the nose landing gear alternate extension hydraulic tube that is adjacent to the P30 panel.

E. Compliance

The Federal Aviation Administration (FAA) will possibly release an Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Boeing recommends that this service bulletin be done within 36 months from the date on this service bulletin.

F. Approval

This service bulletin was examined by the Federal Aviation Administration (FAA). The changes specified in this service bulletin comply with the applicable regulations and are FAA approved, as well as European Aviation Safety Agency (EASA)/Joint Aviation Authorities (JAA) approved for all EASA/JAA approved airplanes listed in the service bulletin effectivity. This service bulletin and its approval were based on the airplane in its original Boeing delivery configuration or as modified by other approved Boeing changes.

If an airplane has a non-Boeing modification or repair that affects a component or system also affected by this service bulletin, the operator is responsible for obtaining appropriate regulatory agency approval before incorporating this service bulletin.

G. Manpower

The table below shows an estimate of the task-hours necessary to do this change for each airplane. This estimate is for direct labor only, done by an experienced crew. Adjust the estimate with operator task-hour data if necessary. The estimate does not include lost time. These are some examples of lost time:

- Time to adjust to the workplace
- Time to schedule the work
- Time to examine the work
- Time to cure the materials
- Time to make the parts
- Time to find the tools.

Task	Number of Persons	Task-Hours	Elapsed Hours
Remove external power	1	0.50	0.50
Figure 1	1	1.50	1.50
TOTAL FOR EACH AIRPLANE		2.00	2.00

H. Weight and Balance Changes

None.

I. Electrical Load Data

Not changed.

J. References

1. Existing Data:
 - a. Engineering Change Memo PRR 62777-46S
 - b. 777 Aircraft Maintenance Manual (AMM) 24-22-00
 - c. Boeing Service Related Problem (SRP) 777-SRP-24-0120
 - d. Standard Overhaul Practices Manual (SOPM) 20-30-03, 20-50-10

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2. Data supplied with this Service Bulletin:

None.

3. Installation Drawings Used in the Preparation of this Service Bulletin:

Drawing Number	Title
208W4149	Tubing Installation Cargo Floor Beams STA 332.5 - 652
272W4190	Tubing Installation - Hydraulic, Section 41

These drawings were used to prepare this service bulletin. These drawings are not necessary to make the specified changes, and are not supplied with this service bulletin. These drawings may not be applicable to all airplane configurations or operators.

K. Publications Affected

Publication	Chapter-Section
777 Illustrated Parts Catalog	29-11

L. Interchangeability and Intermixability of Parts

Refer to Paragraph 2.C., Parts Necessary For Each Airplane, for interchangeability and intermixability information.

2. MATERIAL INFORMATION**A. Material - Price and Availability**

The operator can supply the parts and materials shown in Paragraph 2.C., Parts Necessary For Each Airplane. As an alternative, operators can purchase the parts from Boeing Spares. This service bulletin does not show the Boeing price and supply data.

B. Industry Support Information

Boeing warranty remedies are not available for the configuration changes given in this service bulletin.

C. Parts Necessary For Each Airplane

1. Kits/Parts:

None.

2. Parts and Materials Supplied by the Operator:

Part Number / Specification	QTY	Name	Notes
Scotch 70	7 ft.	Electrical Tape, Self-Fusing, Silicone Rubber	(a)
(a) 3M Company (V76381) 3M Center St. Paul, Minnesota 55144-1000			

3. Parts Modified and Reidentified:

Existing Part Number	QTY	Name	New Part Number	Notes
272W4190-93	1	Tube Assy	-	(a) (b) (c)
272W4190-168	1	Tube Assy	-	(a) (b) (c)
(a) Make the change given in this service bulletin.				
(b) There is no equivalent Boeing part number for the changed part. Identify on the part that the change given in this service bulletin was made.				
(c) The equivalent production part number is 272W4190-192.				

4. Parts Removed and Not Replaced:

None.

D. Parts Necessary to Change Spares

None.

E. Special Tooling - Price and Availability

None.

F. Special Tooling Necessary to do this Service Bulletin

No special tools or equipment are necessary to do the change in this service bulletin. But, maintenance and overhaul tools in the manuals given in Paragraph 1.J., References, can be necessary. Examine operator tool supply to make sure all necessary tools are available.

3. ACCOMPLISHMENT INSTRUCTIONS

A. GENERAL INFORMATION

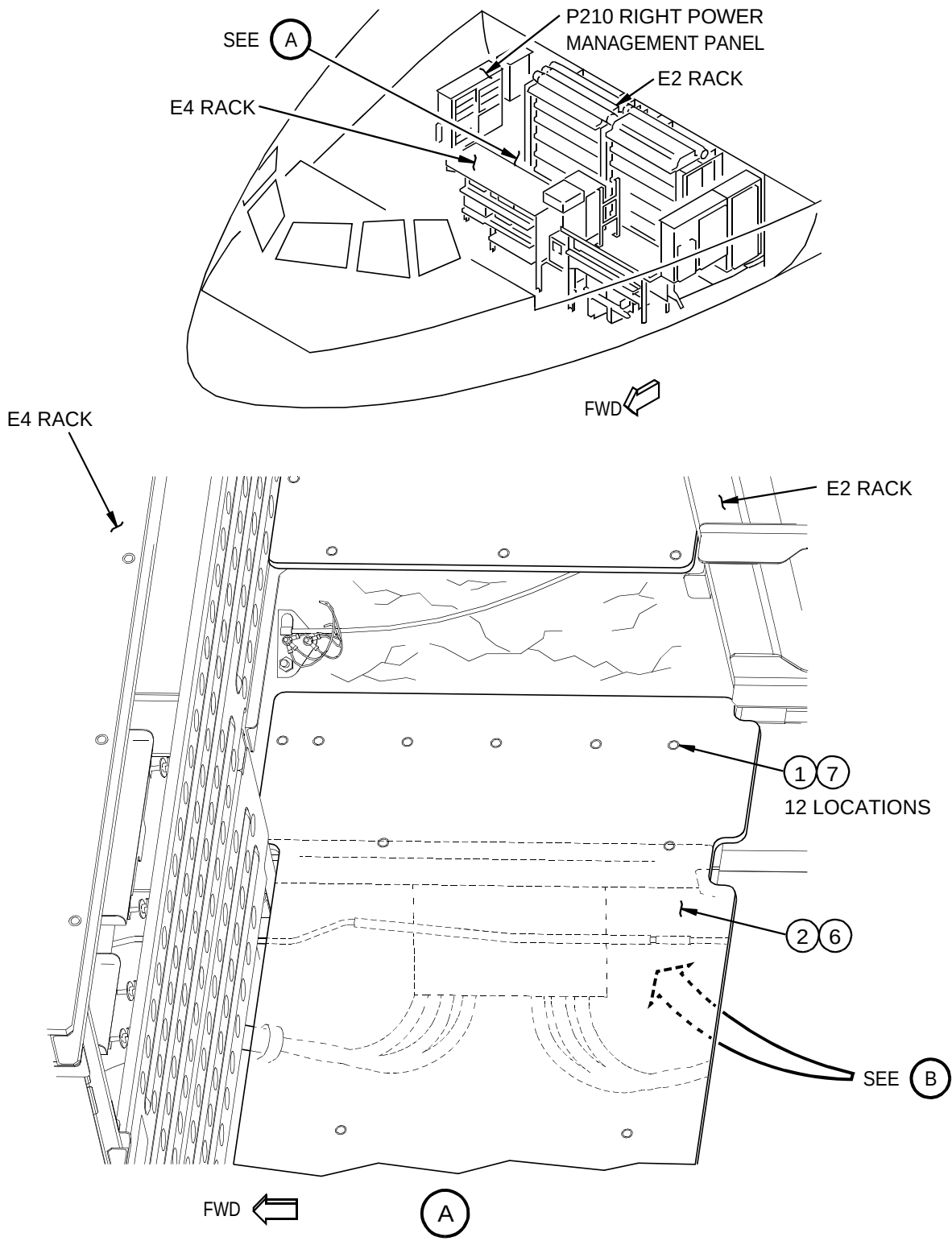
NOTE:

1. Manual titles are referred to by acronyms. Refer to Paragraph 1.J., References, for definition of the acronyms.
2. Obey all of the warnings and cautions given in the specified manual sections.
3. These work instructions refer to procedures included on other Boeing documents. When the words "refer to" are used and the operator has an accepted alternative procedure, the accepted alternative procedure can be used. When the words "as given in" are included in the instruction, the procedure in the Boeing document must be used.

B. WORK INSTRUCTIONS

1. Remove primary and secondary external power from the airplane. Refer to 777 AMM 24-22-00 as an accepted procedure.
2. Get access to and change the hydraulic tube as given in Figure 1.
3. Put the airplane back to a serviceable condition.

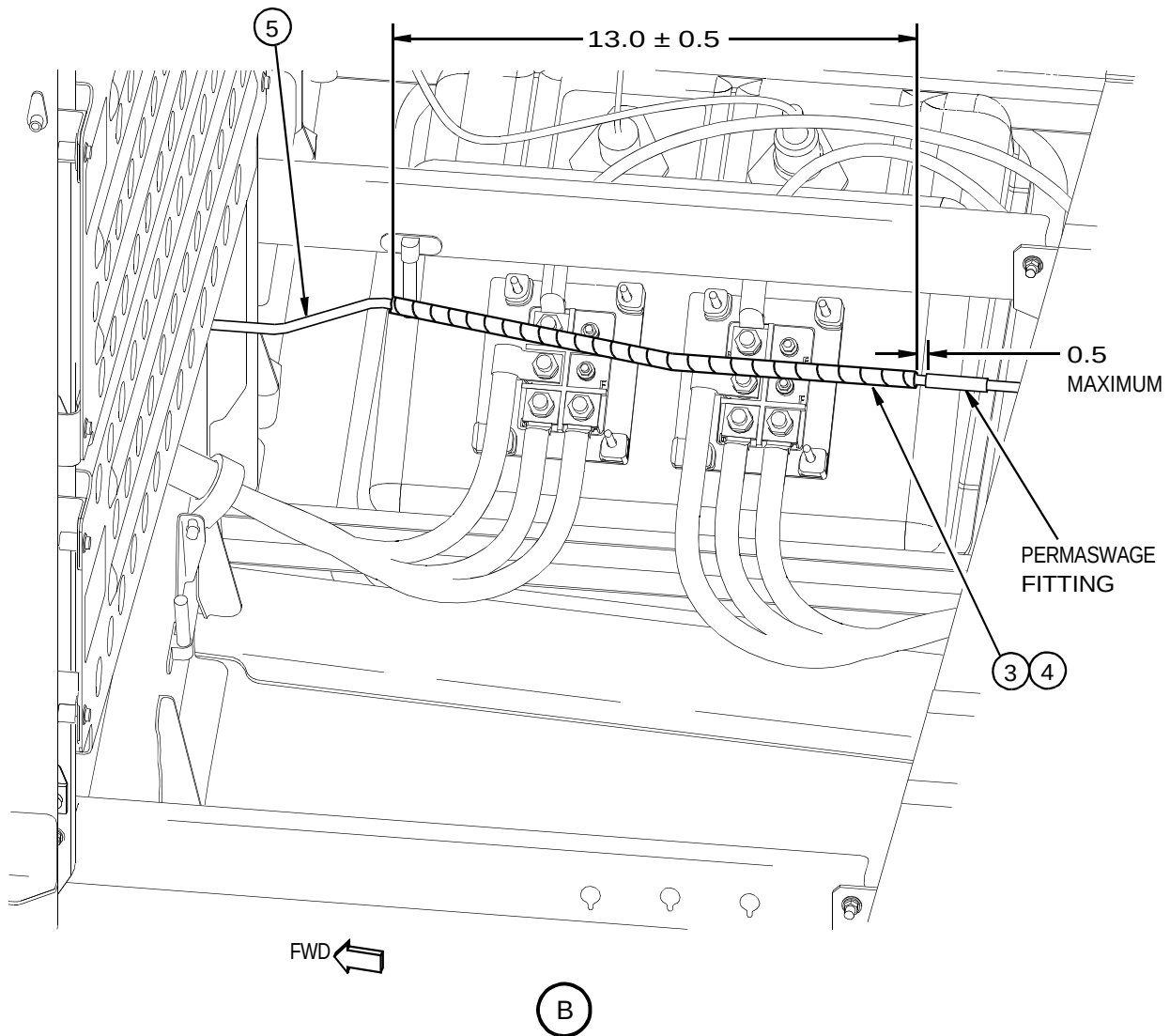
FIGURE 1: Main Equipment Center - Hydraulic Tube - Access and Change



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FIGURE 1: Main Equipment Center - Hydraulic Tube - Access and Change
(SHEET 1 OF 3)

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The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this figure.

STEP	TASK	NAME	IDENTIFICATION	QTY	MORE DATA
1	Remove/Keep	Fasteners	-	12	
2	Remove/Keep	Floor Panel Assy	284W8165-14	1	
3	Clean	Hydraulic Tube	272W4190-93 or 272W4190-168	1	Solvent clean the area where the tape will be installed. Refer to SOPM 20-30-03 as an accepted procedure.
4	Install (New)	Electrical Tape	Scotch 70	-	(a)

FIGURE 1: Main Equipment Center - Hydraulic Tube - Access and Change
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STEP	TASK	NAME	IDENTIFICATION	QTY	MORE DATA
5	Apply	Service Bulletin Number	-	-	Apply the service bulletin number to the tube. Do not mark on the Scotch 70 tape. Refer to SOPM 20-50-10 as an accepted procedure.
6	Install (Kept)	Floor Panel Assy	284W8165-14	1	
7	Install (Kept)	Fasteners	-	12	
(a) Wind a continuous length of tape from one end to the other and back again, for a total of two wraps. Make sure that each turn has an overlap of 67% or more. Keep the tension moderate and constant, and stretch the tape between 10 and 100%. Do not stretch the tape when you do the last turn. Push down on the ends of the tape to make sure they do not lift up before the tape fuses.					

**FIGURE 1: Main Equipment Center - Hydraulic Tube - Access and Change
(SHEET 3 OF 3)**

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