

**CHAPTER**

**52**

**DOORS**

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
52-EFFECTIVE PAGES			52-05-03 (cont)			52-11-00 (cont)		
1 thru 7	AUG 01/2016		616	Feb 01/2015		503	Feb 01/2015	
8	BLANK		617	Feb 01/2015		504	Feb 01/2015	
52-CONTENTS			618	Feb 01/2015		505	Feb 01/2015	
1	Feb 01/2015		619	Feb 01/2015		506	Feb 01/2015	
2	Feb 01/2016		620	Feb 01/2015		507	Feb 01/2015	
3	Feb 01/2015		621	Feb 01/2015		508	Feb 01/2015	
4	Feb 01/2016		622	Feb 01/2015		509	Feb 01/2015	
5	Feb 01/2016		623	Feb 01/2015		510	Feb 01/2015	
6	Feb 01/2016		624	Feb 01/2015		511	Feb 01/2015	
7	Feb 01/2016		52-10-00			512	Feb 01/2015	
8	Feb 01/2016		1	Feb 01/2015		513	Feb 01/2015	
9	Feb 01/2016		2	BLANK		514	Feb 01/2015	
10	BLANK		52-11-00			515	Feb 01/2015	
52-00-00			1	Feb 01/2015		516	Feb 01/2015	
1	Feb 01/2015		2	Feb 01/2015		52-11-00 Config 1		
2	Feb 01/2016		3	Feb 01/2015		501	Feb 01/2015	
3	Feb 01/2016		4	Feb 01/2015		502	Feb 01/2015	
4	Feb 01/2016		5	Feb 01/2015		503	Feb 01/2015	
5	Feb 01/2016		6	Feb 01/2015		504	BLANK	
6	Feb 01/2016		7	Feb 01/2015		52-11-00 Config 1		
52-05-03			8	Feb 01/2015		601	Feb 01/2015	
601	Feb 01/2015		9	Feb 01/2015		602	Feb 01/2015	
602	Feb 01/2015		10	BLANK		52-11-01 Config 1		
603	Feb 01/2015		52-11-00			201	Feb 01/2016	
604	Feb 01/2015		101	Feb 01/2015		202	Feb 01/2016	
605	Feb 01/2015		102	Feb 01/2015		203	Feb 01/2016	
606	Feb 01/2015		103	Feb 01/2015		204	BLANK	
607	Feb 01/2015		104	BLANK		52-11-01 Config 2		
608	Feb 01/2015		52-11-00			201	Feb 01/2016	
609	Feb 01/2015		401	Feb 01/2015		202	Feb 01/2016	
610	Feb 01/2015		402	Feb 01/2015		52-11-02		
611	Feb 01/2015		403	Feb 01/2015		201	Feb 01/2015	
612	Feb 01/2015		404	Feb 01/2015		202	Feb 01/2015	
613	Feb 01/2015		52-11-00			203	Feb 01/2015	
614	Feb 01/2015		501	Feb 01/2015		204	Feb 01/2015	
615	Feb 01/2015		502	Feb 01/2015				

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

## 52-EFFECTIVE PAGES

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
52-11-04			52-21-00 Config 1			52-31-00 (cont)		
201	Feb 01/2015		501	Feb 01/2015		505	Feb 01/2016	
202	Feb 01/2015		502	BLANK		506	Feb 01/2015	
203	Feb 01/2016		52-21-00			507	Feb 01/2016	
204	Feb 01/2015		601	Feb 01/2015		508	Feb 01/2016	
52-12-00			602	Feb 01/2015		509	Feb 01/2015	
1	Feb 01/2015		52-21-01			510	Feb 01/2015	
2	Feb 01/2015		201	Feb 01/2015		511	Feb 01/2015	
52-12-00			202	Feb 01/2015		512	BLANK	
201	Feb 01/2015		203	Feb 01/2015		52-31-00 Config 1		
202	Feb 01/2015		204	Feb 01/2015		501	Feb 01/2015	
203	Feb 01/2015		205	Feb 01/2015		502	Feb 01/2015	
204	Feb 01/2015		206	BLANK		503	Feb 01/2015	
205	Aug 01/2015		52-21-02			504	BLANK	
206	BLANK		201	Feb 01/2015		52-31-00		
52-12-01			202	Feb 01/2016		601	Feb 01/2015	
401	Feb 01/2015		203	Feb 01/2015		602	Feb 01/2015	
402	Feb 01/2015		204	Feb 01/2015		52-31-01		
403	Feb 01/2015		205	Feb 01/2015		201	Feb 01/2015	
404	Feb 01/2015		206	BLANK		202	Feb 01/2015	
405	Feb 01/2015		52-30-00 Config 1			203	Feb 01/2015	
406	BLANK		1	Feb 01/2015		204	Feb 01/2015	
52-20-00			2	Feb 01/2015		52-31-02		
1	Feb 01/2016		3	Feb 01/2015		201	Feb 01/2015	
2	Feb 01/2016		4	Feb 01/2015		202	Feb 01/2015	
3	Feb 01/2016		52-31-00			52-40-00		
4	Feb 01/2016		401	Feb 01/2015		1	Feb 01/2015	
52-21-00			402	Feb 01/2015		2	Feb 01/2015	
401	Feb 01/2015		403	Feb 01/2015		3	Feb 01/2015	
402	Feb 01/2015		404	Feb 01/2015		4	Feb 01/2015	
52-21-00			405	Feb 01/2015		5	Feb 01/2015	
501	Feb 01/2015		406	BLANK		6	Feb 01/2015	
502	Feb 01/2015		52-31-00			7	Feb 01/2015	
503	Feb 01/2015		501	Feb 01/2015		8	Feb 01/2016	
504	Feb 01/2015		502	Feb 01/2015		9	Feb 01/2016	
505	Feb 01/2015		503	Feb 01/2015		10	Feb 01/2016	
506	BLANK		504	Feb 01/2015		11	Feb 01/2016	

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## 52-EFFECTIVE PAGES

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
52-40-00 (cont)			52-41-01 Config 2			52-42-01 Config 2 (cont)		
12	Feb 01/2016		201	Feb 01/2016		204	Feb 01/2016	
13	Feb 01/2016		202	Feb 01/2016		52-42-02		
14	Feb 01/2016		52-41-02			201	Feb 01/2016	
15	Feb 01/2016		201	Feb 01/2015		202	Feb 01/2016	
16	Feb 01/2015		202	Feb 01/2015		203	Feb 01/2016	
17	Feb 01/2016		203	Feb 01/2015		204	BLANK	
18	BLANK		204	BLANK		52-43-00		
52-41-00			52-42-00			401	Feb 01/2015	
401	Feb 01/2015		401	Feb 01/2016		402	Feb 01/2015	
402	Feb 01/2016		402	Feb 01/2016		52-43-00		
403	Feb 01/2016		403	Feb 01/2016		501	Feb 01/2015	
404	Feb 01/2015		404	BLANK		502	Feb 01/2015	
52-41-00			52-42-00			503	Feb 01/2015	
501	Feb 01/2015		501	Feb 01/2016		504	Feb 01/2015	
502	Feb 01/2015		502	Feb 01/2016		52-43-00 Config 1		
503	Feb 01/2015		503	Feb 01/2016		501	Feb 01/2015	
504	Feb 01/2015		504	Feb 01/2016		502	Feb 01/2015	
505	Feb 01/2015		505	Feb 01/2016		503	Feb 01/2015	
506	Feb 01/2015		506	Feb 01/2016		504	BLANK	
507	Feb 01/2015		507	Feb 01/2016		52-43-00		
508	Feb 01/2015		508	Feb 01/2016		601	Feb 01/2015	
509	Feb 01/2015		52-42-00 Config 1			602	BLANK	
510	Feb 01/2015		501	Feb 01/2016		52-43-01		
52-41-00 Config 1			502	BLANK		201	Feb 01/2015	
501	Feb 01/2015		52-42-00			202	Feb 01/2015	
502	Feb 01/2015		601	Feb 01/2016		203	Feb 01/2015	
503	Feb 01/2015		602	BLANK		204	BLANK	
504	BLANK		52-42-01 Config 1			52-44-00		
52-41-00			201	Feb 01/2016		201	Feb 01/2015	
601	Feb 01/2015		202	Feb 01/2016		202	Feb 01/2015	
602	Feb 01/2015		203	Feb 01/2016		52-44-01		
52-41-01 Config 1			204	Feb 01/2016		201	Feb 01/2015	
201	Feb 01/2016		52-42-01 Config 2			202	Feb 01/2015	
202	Feb 01/2016		201	Feb 01/2016		203	Feb 01/2015	
			202	Feb 01/2016		204	BLANK	
			203	Feb 01/2016				

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## 52-EFFECTIVE PAGES



# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
52-45-00			52-52-01 Config 1 (cont)			52-60-00 Config 2		
201	Feb 01/2015		214	Feb 01/2015	C	1	Feb 01/2015	
202	Feb 01/2015		215	Feb 01/2015		2	BLANK	
203	Feb 01/2015		216	Feb 01/2015	C	52-61-00 Config 1		
204	Feb 01/2015		52-52-01			1	Feb 01/2016	
205	Feb 01/2015		501	Feb 01/2015	C	2	Feb 01/2016	
206	BLANK		502	BLANK		3	Feb 01/2016	
52-45-00			52-52-01			4	Feb 01/2016	
501	Feb 01/2015		601	Feb 01/2015	C	5	Feb 01/2016	
502	Feb 01/2015		602	Feb 01/2015	C	6	Feb 01/2016	
503	Feb 01/2015		603	Feb 01/2015	C	7	Feb 01/2016	
504	BLANK		604	Feb 01/2015	C	8	Feb 01/2016	
52-50-00			52-52-01			9	Feb 01/2016	
1	Feb 01/2016	C	701	Feb 01/2015	C	10	Feb 01/2016	
2	Feb 01/2015	C	702	Feb 01/2015	C	11	Feb 01/2016	
3	Feb 01/2016	C	703	Feb 01/2015	C	12	Feb 01/2016	
4	BLANK		704	BLANK		13	Feb 01/2016	
52-51-01 Config 1			52-52-01			14	Feb 01/2016	
201	Feb 01/2015		801	Feb 01/2015	C	15	Feb 01/2016	
202	Feb 01/2015		802	Feb 01/2015	C	16	BLANK	
52-52-01 Config 1			803	Feb 01/2015	C	52-61-00 Config 2		
101	Feb 01/2015	C	804	Feb 01/2015	C	1	Feb 01/2015	
102	BLANK		52-52-07			2	Feb 01/2015	
52-52-01 Config 1			401	Feb 01/2015	C	3	Feb 01/2015	
201	Feb 01/2016		402	Feb 01/2015	C	4	Feb 01/2015	
202	Feb 01/2016		403	Feb 01/2015	C	5	Feb 01/2015	
203	Feb 01/2016		404	Feb 01/2015	C	6	Feb 01/2015	
204	Feb 01/2015		52-52-07			7	Feb 01/2015	
205	Feb 01/2015		501	Feb 01/2015	C	8	Feb 01/2015	
206	Feb 01/2015	C	502	Feb 01/2015	C	9	Feb 01/2015	
207	Feb 01/2015	C	503	Feb 01/2015	C	10	Feb 01/2015	
208	Feb 01/2015	C	504	Feb 01/2015	C	11	Feb 01/2015	
209	Feb 01/2015	C	505	Feb 01/2015	C	12	Feb 01/2015	
210	Feb 01/2015	C	506	BLANK		13	Feb 01/2015	
211	Feb 01/2015	C	52-60-00 Config 1			14	Feb 01/2015	
212	Feb 01/2015	C	1	Feb 01/2016		15	Feb 01/2015	
213	Feb 01/2015	C	2	BLANK		16	BLANK	

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## 52-EFFECTIVE PAGES

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
52-61-00	Config 1		52-61-00	Config 1 (cont)		52-61-01	Config 2	
101	Feb 01/2016		507	Feb 01/2016		501	Feb 01/2015	
102	Feb 01/2016		508	Feb 01/2016		502	Feb 01/2015	
103	Feb 01/2016		509	Feb 01/2016		52-61-02	Config 1	
104	Feb 01/2016		510	Feb 01/2016		401	Feb 01/2016	
105	Feb 01/2016		511	Feb 01/2016		402	Feb 01/2016	
106	Feb 01/2016		512	BLANK		403	Feb 01/2016	
107	Feb 01/2016		52-61-00	Config 2		404	Feb 01/2016	
108	Feb 01/2015		501	Feb 01/2015		405	Feb 01/2016	
109	Feb 01/2016		502	Feb 01/2015		406	BLANK	
110	BLANK		503	Feb 01/2015		52-61-02	Config 2	
52-61-00	Config 2		504	Feb 01/2015		401	Feb 01/2015	
101	Feb 01/2015		505	Feb 01/2015		402	Feb 01/2015	
102	Feb 01/2015		506	Feb 01/2015		403	Feb 01/2015	
103	Feb 01/2015		507	Feb 01/2015		404	Feb 01/2015	
104	Feb 01/2015		508	Feb 01/2015		52-61-02	Config 1	
105	Feb 01/2015		509	Feb 01/2015		501	Feb 01/2016	
106	Feb 01/2015		510	Feb 01/2015		502	Feb 01/2016	
52-61-00	Config 1		511	Feb 01/2015		52-61-02	Config 2	
401	Feb 01/2016		512	BLANK		501	Feb 01/2015	
402	Feb 01/2016		52-61-01	Config 1		502	Feb 01/2015	
403	Feb 01/2016		401	Feb 01/2016		52-62-00		
404	Feb 01/2016		402	Feb 01/2016		1	Feb 01/2015	
405	Feb 01/2016		403	Feb 01/2016		2	Feb 01/2015	
406	BLANK		404	Feb 01/2016		3	Feb 01/2015	
52-61-00	Config 2		405	Feb 01/2016		4	BLANK	
401	Feb 01/2015		406	BLANK		52-62-00		
402	Feb 01/2015		52-61-01	Config 2		401	Feb 01/2016	
403	Feb 01/2015		401	Feb 01/2015		402	Feb 01/2016	
404	Feb 01/2015		402	Feb 01/2015		403	Feb 01/2016	
52-61-00	Config 1		403	Feb 01/2015		404	Feb 01/2016	
501	Feb 01/2016		404	Feb 01/2015		405	Feb 01/2015	
502	Feb 01/2016		52-61-01	Config 1		406	BLANK	
503	Feb 01/2016		501	Feb 01/2016		52-62-00		
504	Feb 01/2016		502	Feb 01/2016		501	Feb 01/2016	
505	Feb 01/2016					502	Feb 01/2016	
506	Feb 01/2016					503	Feb 01/2016	

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## 52-EFFECTIVE PAGES

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
52-62-00 (cont)			52-63-00			52-70-00 Config 2		
504	Feb 01/2016		401	Feb 01/2015		1	Feb 01/2016	
505	Feb 01/2015		402	Feb 01/2015		2	Feb 01/2016	
506	Feb 01/2015		403	Feb 01/2015		3	Feb 01/2016	
507	Feb 01/2015		404	Feb 01/2015		4	Feb 01/2016	
508	Feb 01/2015		405	Feb 01/2015		52-70-00 Config 3		
52-62-01			406	Feb 01/2015		1	Feb 01/2015	
401	Feb 01/2015		52-63-00			2	Feb 01/2015	
402	Feb 01/2015		501	Feb 01/2015		3	Feb 01/2015	
52-62-01			502	Feb 01/2015		4	Feb 01/2015	
501	Feb 01/2015		503	Feb 01/2015		52-70-00 Config 4		
502	Feb 01/2015		504	Feb 01/2015		1	Feb 01/2016	
503	Feb 01/2015		505	Feb 01/2015		2	Feb 01/2016	
504	Feb 01/2015		506	Feb 01/2015		3	Feb 01/2016	
505	Feb 01/2015		507	Feb 01/2015		4	Feb 01/2016	
506	Feb 01/2015		508	Feb 01/2015		52-70-00 Config 9		
52-62-02			509	Feb 01/2015		1	Feb 01/2015	
401	Feb 01/2016		510	BLANK		2	Feb 01/2015	
402	Feb 01/2016		52-63-00			3	Feb 01/2015	
403	Feb 01/2016		601	Feb 01/2015		4	Feb 01/2015	
404	Feb 01/2016		602	Feb 01/2015		52-70-00 Config 10		
405	Feb 01/2015		52-63-01			1	Feb 01/2015	
406	BLANK		201	Feb 01/2015		2	Feb 01/2015	
52-62-03 Config 1			202	Feb 01/2015		3	Feb 01/2015	
201	Feb 01/2015		203	Feb 01/2015		4	Feb 01/2015	
202	Feb 01/2015		204	Feb 01/2015		52-70-00		
52-63-00			52-63-02			501	Feb 01/2015	
1	Feb 01/2015		201	Feb 01/2015		502	Feb 01/2015	
2	Feb 01/2015		202	Feb 01/2015		503	Feb 01/2015	
3	Feb 01/2015		203	Feb 01/2015		504	BLANK	
4	Feb 01/2015		204	Feb 01/2015		52-70-01 Config 1		
5	Feb 01/2015		52-70-00 Config 1			201	Feb 01/2016	
6	Feb 01/2015		1	Feb 01/2016		202	Feb 01/2016	
7	Feb 01/2015		2	Feb 01/2016		203	Feb 01/2016	
8	Feb 01/2016		3	Feb 01/2016		204	Feb 01/2016	
9	Feb 01/2016		4	BLANK				
10	BLANK							

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## 52-EFFECTIVE PAGES

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
52-70-01	Config 2		52-70-07					
201	Feb 01/2016		201	Feb 01/2015				
202	Feb 01/2016		202	Feb 01/2015				
203	Feb 01/2016		203	Feb 01/2015				
204	Feb 01/2016		204	BLANK				
52-70-02			52-70-08	Config 1				
201	Feb 01/2015		201	Feb 01/2015				
202	Feb 01/2015		202	Feb 01/2015				
203	Feb 01/2015		203	Feb 01/2015				
204	Feb 01/2015		204	BLANK				
52-70-03			52-70-08	Config 2				
201	Feb 01/2015		201	Feb 01/2015				
202	Feb 01/2015		202	Feb 01/2015				
203	Feb 01/2015		203	Feb 01/2015				
204	Feb 01/2015		204	BLANK				
52-70-04	Config 1		52-70-09					
201	Feb 01/2015		201	Feb 01/2015				
202	Feb 01/2015		202	Feb 01/2015				
203	Feb 01/2015		52-70-10					
204	BLANK		201	Feb 01/2015				
52-70-04	Config 3		202	Feb 01/2015				
201	Feb 01/2015		52-70-11					
202	Feb 01/2015		201	Feb 01/2015				
203	Feb 01/2015		202	Feb 01/2015				
204	BLANK		52-70-12					
52-70-05			201	Feb 01/2015				
201	Feb 01/2016		202	Feb 01/2015				
202	Feb 01/2016							
203	Feb 01/2015							
204	Feb 01/2015							
52-70-06								
201	Feb 01/2015							
202	Feb 01/2015							
203	Feb 01/2015							
204	BLANK							

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

## 52-EFFECTIVE PAGES

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
<b><u>GENERAL - DESCRIPTION AND OPERATION</u></b>	52-00-00		1	WJE ALL
<b><u>DOORS - STRUCTURAL INSPECTIONS - INSPECTION/CHECK</u></b>	52-05-03		601	WJE ALL
Door, Main Entrance, STA 160 - 200 (Left Side) - Internal Structure TASK 52-05-03-211-801			601	WJE ALL
Door, Aft Cabin Pressure Bulkhead, STA 1338 (MD-87, STA 1129) - Internal Structure TASK 52-05-03-211-802			603	WJE ALL
Door, Emergency Exit, Overwing, STA 864-927 (MD-87, STA 750-813) - Internal Structure TASK 52-05-03-211-803			605	WJE ALL
Door, Forward Lower Cargo, STA 370-427 (MD-87, STA 313-370) - Internal Structure TASK 52-05-03-211-804			607	WJE ALL
Door, Center Lower Cargo, STA 636-693 (MD-87, STA 522-579) - Internal Structure TASK 52-05-03-211-805			609	WJE ALL
Door, Aft Lower Cargo, STA 1156-1211 (MD-87, STA 966-1002) - Internal Structure TASK 52-05-03-211-806			611	WJE ALL
Door, Electrical / Electronics Compartment, STA 148 - Internal Structure TASK 52-05-03-211-807			613	WJE ALL
Door, Forward Galley Service, STA 168-200 - Internal Structure TASK 52-05-03-211-808			615	WJE ALL
Door, Aft Galley Service, STA 1140-1170 (MD-87, STA 949-979) - Internal Structure TASK 52-05-03-211-809			617	WJE ALL
Door, Forward Accessory Compartment, STA 41-69 - Internal Structure TASK 52-05-03-211-810			619	WJE ALL
Doors, Main Landing Gear, STA 946-1003 (MD-87, STA 832-889) - Internal Structure TASK 52-05-03-211-811			621	WJE ALL

## 52-CONTENTS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
Doors, Main Landing Gear Strut - Structure TASK 52-05-03-211-812			623	WJE ALL
<u>PASSENGER/CREW - DESCRIPTION AND OPERATION</u>	52-10-00		1	WJE ALL
<u>PASSENGER FORWARD ENTRANCE DOOR - DESCRIPTION AND OPERATION</u>	52-11-00		1	WJE ALL
<u>PASSENGER FORWARD ENTRANCE DOOR - TROUBLE SHOOTING</u>	52-11-00		101	WJE ALL
<u>PASSENGER FORWARD ENTRANCE DOOR - REMOVAL/INSTALLATION</u>	52-11-00		401	WJE ALL
<u>PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST</u>	52-11-00		501	WJE ALL
<u>PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST</u>	52-11-00	1	501	WJE ALL
Functional Check of the Locking Device for the Passenger Forward Entrance Door Set Screws TASK 52-11-00-720-801		1	501	WJE ALL
<u>PASSENGER FORWARD ENTRANCE DOOR - CHECK</u>	52-11-00	1	601	WJE ALL
<u>PASSENGER FORWARD ENTRANCE DOOR LINING - MAINTENANCE PRACTICES</u>	52-11-01	1	201	WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891
<u>PASSENGER FORWARD ENTRANCE DOOR LINING - MAINTENANCE PRACTICES</u>	52-11-01	2	201	WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893
<u>PASSENGER FORWARD ENTRANCE DOOR SEAL - MAINTENANCE PRACTICES</u>	52-11-02		201	WJE ALL
<u>PASSENGER DOOR FORWARD ENTRANCE DOOR HOLD-OPEN HOOK - MAINTENANCE PRACTICES</u>	52-11-04		201	WJE ALL
<u>PASSENGER AFT ENTRANCE DOOR - DESCRIPTION AND OPERATION</u>	52-12-00		1	WJE ALL
<u>PASSENGER AFT ENTRANCE DOOR - MAINTENANCE PRACTICES</u>	52-12-00		201	WJE ALL

## 52-CONTENTS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
<u>SEAL, AFT PASSENGER ENTRANCE DOOR - REMOVAL/INSTALLATION</u>	52-12-01		401	WJE ALL
<u>EMERGENCY EXIT - DESCRIPTION AND OPERATION</u>	52-20-00		1	WJE ALL
<u>OVERWING EMERGENCY EXIT DOORS - REMOVAL/INSTALLATION</u>	52-21-00		401	WJE ALL
<u>OVERWING EMERGENCY EXIT DOORS - ADJUSTMENT/TEST</u>	52-21-00		501	WJE ALL
<u>OVERWING EMERGENCY EXIT DOOR - ADJUSTMENT/TEST</u>	52-21-00	1	501	WJE ALL
Operational Check of the Overwing Emergency Exit Door Mechanism TASK 52-21-00-710-801		1	501	WJE ALL
<u>OVERWING EMERGENCY EXIT DOORS - CHECK</u>	52-21-00		601	WJE ALL
<u>OVERWING EMERGENCY EXIT DOOR LINING - MAINTENANCE PRACTICES</u>	52-21-01		201	WJE ALL
<u>OVERWING EMERGENCY EXIT DOOR SEAL - MAINTENANCE PRACTICES</u>	52-21-02		201	WJE ALL
<u>CARGO - DESCRIPTION AND OPERATION</u>	52-30-00	1	1	WJE ALL
<u>FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - REMOVAL/INSTALLATION</u>	52-31-00		401	WJE ALL
<u>FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST</u>	52-31-00		501	WJE ALL
<u>FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST</u>	52-31-00	1	501	WJE ALL
Functional Check of the Cargo Door Stop and Set Screw Assemblies (Torque Door Stop Set Screws and Locknuts) TASK 52-31-00-720-801		1	501	WJE ALL
<u>FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - CHECK</u>	52-31-00		601	WJE ALL
<u>FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOOR SEALS - MAINTENANCE PRACTICES</u>	52-31-01		201	WJE ALL

## 52-CONTENTS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
<u>FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOOR HINGES - MAINTENANCE PRACTICES</u>	52-31-02		201	WJE ALL
<u>SERVICE - DESCRIPTION AND OPERATION</u>	52-40-00		1	WJE ALL
<u>FORWARD SERVICE DOOR - REMOVAL/INSTALLATION</u>	52-41-00		401	WJE ALL
<u>FORWARD SERVICE DOOR - ADJUSTMENT/TEST</u>	52-41-00		501	WJE ALL
<u>FORWARD SERVICE DOOR - ADJUSTMENT/TEST</u>	52-41-00	1	501	WJE ALL
Functional Check of the Forward Service Door Stop and Set Screws (Torque Door Stop Set Screw and Locknut) TASK 52-41-00-720-801		1	501	WJE ALL
<u>FORWARD SERVICE DOOR - CHECK</u>	52-41-00		601	WJE ALL
<u>FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES</u>	52-41-01	1	201	WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891
<u>FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES</u>	52-41-01	2	201	WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893
<u>FORWARD SERVICE DOOR SEAL - MAINTENANCE PRACTICES</u>	52-41-02		201	WJE ALL
<u>AFT SERVICE DOOR - REMOVAL/INSTALLATION</u>	52-42-00		401	WJE ALL
<u>AFT SERVICE DOOR - ADJUSTMENT/TEST</u>	52-42-00		501	WJE ALL
<u>AFT SERVICE DOOR - ADJUSTMENT/TEST</u>	52-42-00	1	501	WJE ALL
Functional Check of the Aft Service Door Set Screws (Torque Door Set Screw and Locknut) TASK 52-42-00-720-801		1	501	WJE ALL
<u>AFT SERVICE DOOR - CHECK</u>	52-42-00		601	WJE ALL
<u>AFT SERVICE DOOR LINING - MAINTENANCE PRACTICES</u>	52-42-01	1	201	WJE 422, 424, 429
<u>AFT SERVICE DOOR LINING - MAINTENANCE PRACTICES</u>	52-42-01	2	201	WJE 401-412, 414-421, 423, 425-427, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

## 52-CONTENTS



# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
<u>AFT SERVICE DOOR SEAL - MAINTENANCE PRACTICES</u>	52-42-02		201	WJE ALL
<u>ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - REMOVAL/INSTALLATION</u>	52-43-00		401	WJE ALL
<u>ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - ADJUSTMENT/TEST</u>	52-43-00		501	WJE ALL
<u>ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - ADJUSTMENT/TEST</u>	52-43-00	1	501	WJE ALL
Functional Check of the Electrical/Electronics Compartment Door Stop and Set Screws (Torque Door Stop Set Screw and Locknut) TASK 52-43-00-720-801		1	501	WJE ALL
<u>ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - CHECK</u>	52-43-00		601	WJE ALL
<u>ELECTRICAL/ELECTRONICS COMPARTMENT DOOR SEAL - MAINTENANCE PRACTICES</u>	52-43-01		201	WJE ALL
<u>FORWARD ACCESSORY COMPARTMENT DOOR - MAINTENANCE PRACTICES</u>	52-44-00		201	WJE ALL
<u>FORWARD ACCESSORY COMPARTMENT DOOR SEAL - MAINTENANCE PRACTICES</u>	52-44-01		201	WJE ALL
<u>APU ACCESS DOORS - MAINTENANCE PRACTICES</u>	52-45-00		201	WJE ALL
<u>APU ACCESS DOORS - ADJUSTMENT/TEST</u>	52-45-00		501	WJE ALL
Functional Check of the Pressure Relief Door Latches TASK 52-45-00-720-801			501	WJE ALL
<u>FIXED INTERIOR - DESCRIPTION AND OPERATION</u>	52-50-00		1	WJE ALL
<u>LAVATORY DOORS - MODULAR TYPE LAVATORIES - MAINTENANCE PRACTICES</u>	52-51-01	1	201	WJE ALL
<u>FLIGHT COMPARTMENT DOOR - FAULT ISOLATION</u>	52-52-01	1	101	WJE 412, 414
<u>FLIGHT COMPARTMENT DOOR - MAINTENANCE PRACTICES</u>	52-52-01	1	201	WJE ALL
<u>FLIGHT COMPARTMENT DOOR - ADJUSTMENT/TEST</u>	52-52-01		501	WJE ALL

## 52-CONTENTS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>SUBJECT</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
Functional Check of the Flight Compartment Door Blowout Panels TASK 52-52-01-720-801				501	WJE ALL
<u>FLIGHT COMPARTMENT DOOR - INSPECTION/CHECK</u>	52-52-01			601	WJE 412, 414
<u>FLIGHT COMPARTMENT DOOR - CLEANING/PAINTING</u>	52-52-01			701	WJE 412, 414
<u>FLIGHT COMPARTMENT DOOR - APPROVED REPAIRS</u>	52-52-01			801	WJE 412, 414
<u>COCKPIT DOOR REMOTE ACCESS SYSTEM - REMOVAL/INSTALLATION</u>	52-52-07			401	WJE 412, 414
<u>COCKPIT DOOR REMOTE ACCESS SYSTEM - ADJUSTMENT/TEST</u>	52-52-07			501	WJE 412, 414
<u>ENTRANCE STAIRS - DESCRIPTION AND OPERATION</u>	52-60-00	1		1	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>ENTRANCE STAIRS - DESCRIPTION AND OPERATION</u>	52-60-00	2		1	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION</u>	52-61-00	1		1	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTIO</u>	52-61-00	2		1	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - TROUBLE SHOOTING</u>	52-61-00	1		101	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - TROUBLE SHOOTING</u>	52-61-00	2		101	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - REMOVAL/INSTALLATION</u>	52-61-00	1		401	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - REMOVAL/INSTALLATION</u>	52-61-00	2		401	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST</u>	52-61-00	1		501	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

## 52-CONTENTS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>		<u>PAGE</u>	<u>EFFECT</u>
	<u>SUBJECT</u>	<u>CONF</u>		
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST</u>	52-61-00	2	501	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - REMOVAL/INSTALLATION</u>	52-61-01	1	401	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - REMOVAL/INSTALLATION</u>	52-61-01	2	401	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST</u>	52-61-01	1	501	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST</u>	52-61-01	2	501	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - REMOVAL/INSTALLATION</u>	52-61-02	1	401	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - REMOVAL/INSTALLATION</u>	52-61-02	2	401	WJE 412, 414; ALL, with Airstairs Installed
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - ADJUSTMENT/TEST</u>	52-61-02	1	501	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
<u>PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - ADJUSTMENT/TEST</u>	52-61-02	2	501	WJE 412, 414; ALL, with Airstairs Installed
<u>FORWARD STAIRWELL DOOR - DESCRIPTION AND OPERATION</u>	52-62-00		1	WJE ALL
<u>FORWARD STAIRWELL DOOR - REMOVAL/INSTALLATION</u>	52-62-00		401	WJE ALL
<u>FORWARD STAIRWELL DOOR - ADJUSTMENT/TEST</u>	52-62-00		501	WJE ALL
<u>FORWARD STAIRWELL DOOR LATCH MECHANISM - REMOVAL/INSTALLATION</u>	52-62-01		401	WJE ALL
<u>FORWARD STAIRWELL DOOR LATCH MECHANISM - ADJUSTMENT/TEST</u>	52-62-01		501	WJE ALL
<u>FORWARD STAIRWELL DOOR SEAL - REMOVAL/INSTALLATION</u>	52-62-02		401	WJE ALL

## 52-CONTENTS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>	<u>CONF</u>	<u>PAGE</u>	<u>EFFECT</u>
<u>FORWARD STAIRWELL DOOR (DISABLED - AIRSTAIR REMOVED) - MAINTENANCE PRACTICES</u>	52-62-03	1	201	WJE 412, 414; W/O AIRSTAIR INSTALLED
<u>PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION</u>	52-63-00		1	WJE ALL
<u>PASSENGER AFT ENTRANCE DOOR STAIRWAY - REMOVAL/INSTALLATION</u>	52-63-00		401	WJE ALL
<u>PASSENGER AFT ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST</u>	52-63-00		501	WJE ALL
<u>PASSENGER AFT ENTRANCE DOOR STAIRWAY - INSPECTION / CHECK</u>	52-63-00		601	WJE ALL
Detailed Inspection of the Aft Entrance Door Control Cables TASK 52-63-00-211-801			601	WJE ALL
<u>PASSENGER AFT ENTRANCE DOOR STAIRWAY CONTROL VALVE - MAINTENANCE PRACTICES</u>	52-63-01		201	WJE ALL
<u>PASSENGER AFT ENTRANCE DOOR STAIRWAY ACTUATING CYLINDER - MAINTENANCE PRACTICES</u>	52-63-02		201	WJE ALL
<u>DOOR WARNING - DESCRIPTION AND OPERATION</u>	52-70-00	1	1	WJE 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891
<u>DOOR WARNING - DESCRIPTION AND OPERATION</u>	52-70-00	2	1	WJE 874
<u>DOOR WARNING - DESCRIPTION AND OPERATION</u>	52-70-00	3	1	WJE 405-408, 410, 411, 880, 881, 883, 892, 893
<u>DOOR WARNING - DESCRIPTION AND OPERATION</u>	52-70-00	4	1	WJE 401-404, 412, 414, 415, 417, 419, 421, 423, 863-866, 875-879, 886, 887
<u>DOOR WARNING - DESCRIPTION AND OPERATION</u>	52-70-00	9	1	WJE 406, 410
<u>DOOR WARNING - DESCRIPTION AND OPERATION</u>	52-70-00	10	1	WJE 405
<u>DOOR WARNING - ADJUSTMENT/TEST</u>	52-70-00		501	WJE ALL
Operational Check of the Door Warning System TASK 52-70-00-710-801			501	WJE ALL
<u>AFT SERVICE DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-01	1	201	WJE ALL

## 52-CONTENTS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 52 DOORS

<u>SUBJECT</u>	<u>CHAPTER SECTION</u>		<u>PAGE</u>	<u>EFFECT</u>
	<u>SUBJECT</u>	<u>CONF</u>		
<u>AFT SERVICE DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-01	2	201	WJE ALL
<u>CARGO DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-02		201	WJE ALL
<u>FORWARD PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-03		201	WJE ALL
<u>AFT PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-04	1	201	WJE ALL
<u>AFT PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-04	3	201	WJE ALL
<u>FORWARD SERVICE DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-05		201	WJE ALL
<u>FORWARD ACCESSORY COMPARTMENT DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-06		201	WJE ALL
<u>ELECTRICAL/ELECTRONICS DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-07		201	WJE ALL
<u>FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-08	1	201	WJE ALL
<u>FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES</u>	52-70-08	2	201	WJE ALL
<u>VENTRAL STAIR DOWNLATCH SWITCH - MAINTENANCE PRACTICES</u>	52-70-09		201	WJE ALL
<u>VENTRAL STAIR UPLATCH SWITCH - MAINTENANCE PRACTICES</u>	52-70-10		201	WJE ALL
<u>TAILCONE EXTERNAL WARNING SWITCH - MAINTENANCE PRACTICES</u>	52-70-11		201	WJE ALL
<u>TAILCONE INTERNAL WARNING SWITCH - MAINTENANCE PRACTICES</u>	52-70-12		201	WJE ALL

## 52-CONTENTS

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**  
**GENERAL - DESCRIPTION AND OPERATION**

**1. General**

- A. This chapter contains the description, operation, and maintenance practices for all the external doors to the compartments that may be pressurized, the fixed interior doors, the airborne stairs for passenger entrance and exit, and the door warning system.
- B. Doors are provided for the passenger compartment, forward, mid, and aft lower cargo compartments, electrical/electronics compartment, forward accessory compartment, forward and aft lavatories, flight compartment, and for the passenger forward entrance door stairway. Overwing emergency exit doors are provided in the sides of the fuselage in the passenger compartment. All the exterior doors (including the emergency exit doors) except the doors for the stairways are of the plug type. Each exterior door is provided with a pressure seal which is depressed by a seal depressor located on the doorjamb, (seal is installed on the doorjamb, and seal depressor on the door of the passenger forward entrance door stairway door), when the door is closed. The latching mechanisms of the exterior doors prevents the doors from opening inward as a result of external loads before pressurization. A lining is installed on the inner surface of the exterior door for insulation. The exposed surface of the lining installed on the doors in the passenger compartment is finished to blend with the aircraft interior decor. (Figure 1)

**2. Passenger/Crew**

- A. Two doors are provided for passengers to enter and leave the passenger compartment. One door is located on the left side of the fuselage at the forward end of the passenger compartment. The other door is located in the aft pressure bulkhead. Both doors are of the plug type. Pressure seals are installed on each door. The seals are depressed by seal depressors installed on the doorjamb.
  - (1) Passenger Forward Entrance Door - The forward door opens inward, forward, and then outward on a hinge assembly consisting of torque tubes and hinge sections. When fully opened, the door is held against the fuselage by a hold-open hook actuated by the door mechanism. The hook is released by actuating a handle attached to the forward edge of the door. The door can be opened from inside or outside the aircraft by handles attached to a common shaft. An inter-lock mechanism installed in the door is actuated by a lockpin installed in the doorjamb to prevent the door handle from being rotated to the door locked position when the forward stairwell door is unlatched. The interlock mechanism also prevents the stairwell door from being unlatched when the passenger door is closed and locked. A window is provided in the upper section of the door to permit viewing the area adjacent to the door before the door is opened. For a complete description and operation of passenger forward entrance door, refer to PASSENGER FORWARD ENTRANCE DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-11-00/001.
  - (2) Passenger Aft Entrance Door - The aft passenger door opens inward on hinges attached to the right side of the door and the doorjamb. The door can be opened from the passenger compartment and the stairwell of the passenger aft entrance door stairway by handles attached to a common shaft. The handles when rotated, actuate linkage and bellcranks to dis-engage lockpins from latches installed in the doorjamb. A viewing lens is installed in the upper section of the door for viewing the stairwell before opening the door. For a complete description and operation of passenger aft entrance door, refer to PASSENGER AFT ENTRANCE DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-12-00/001.

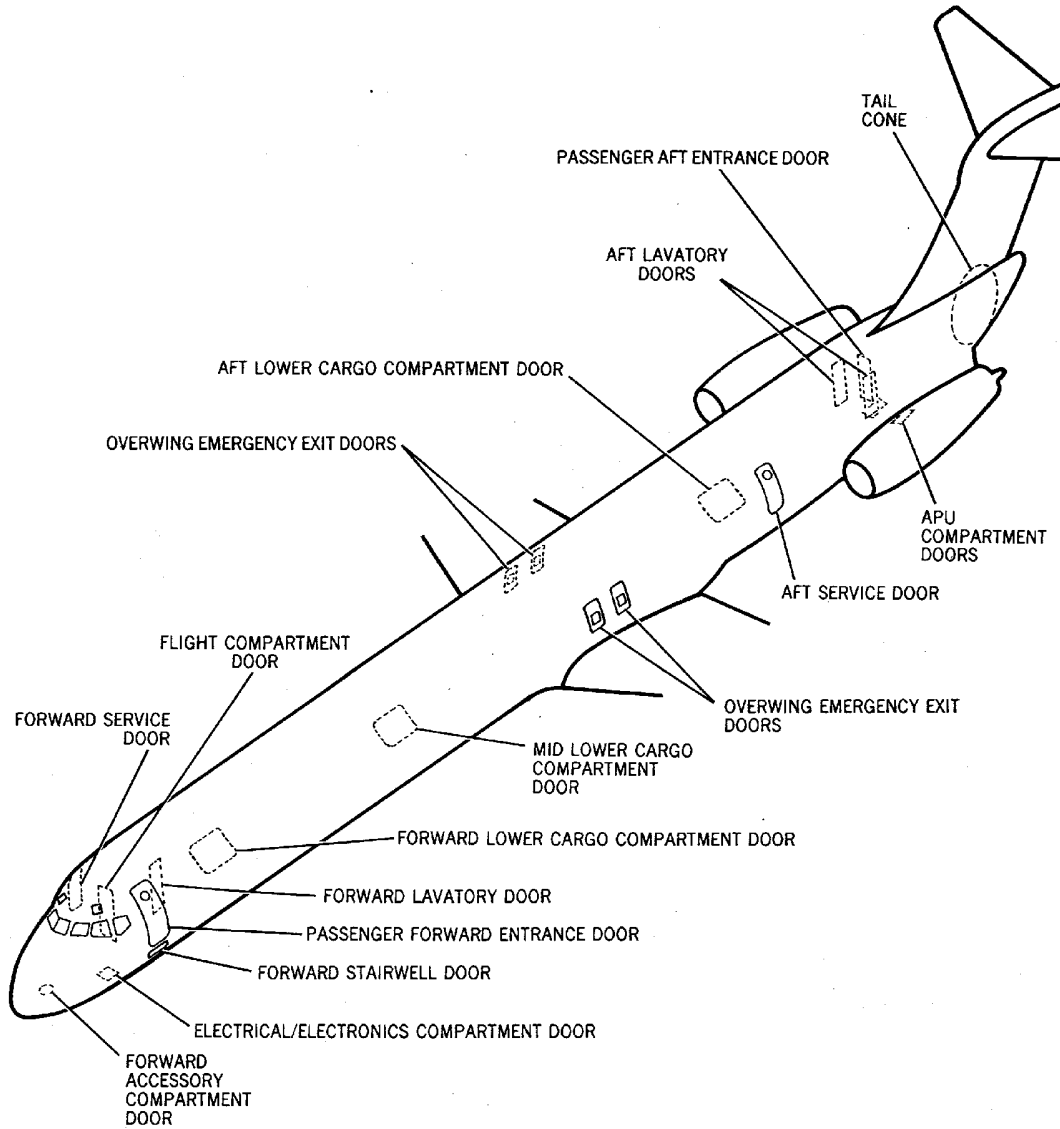
EFFECTIVITY  
WJE ALL

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**52-00-00**

Page 1  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-1

**Doors -- General**  
**Figure 1/52-00-00-990-801 (Sheet 1 of 2)**

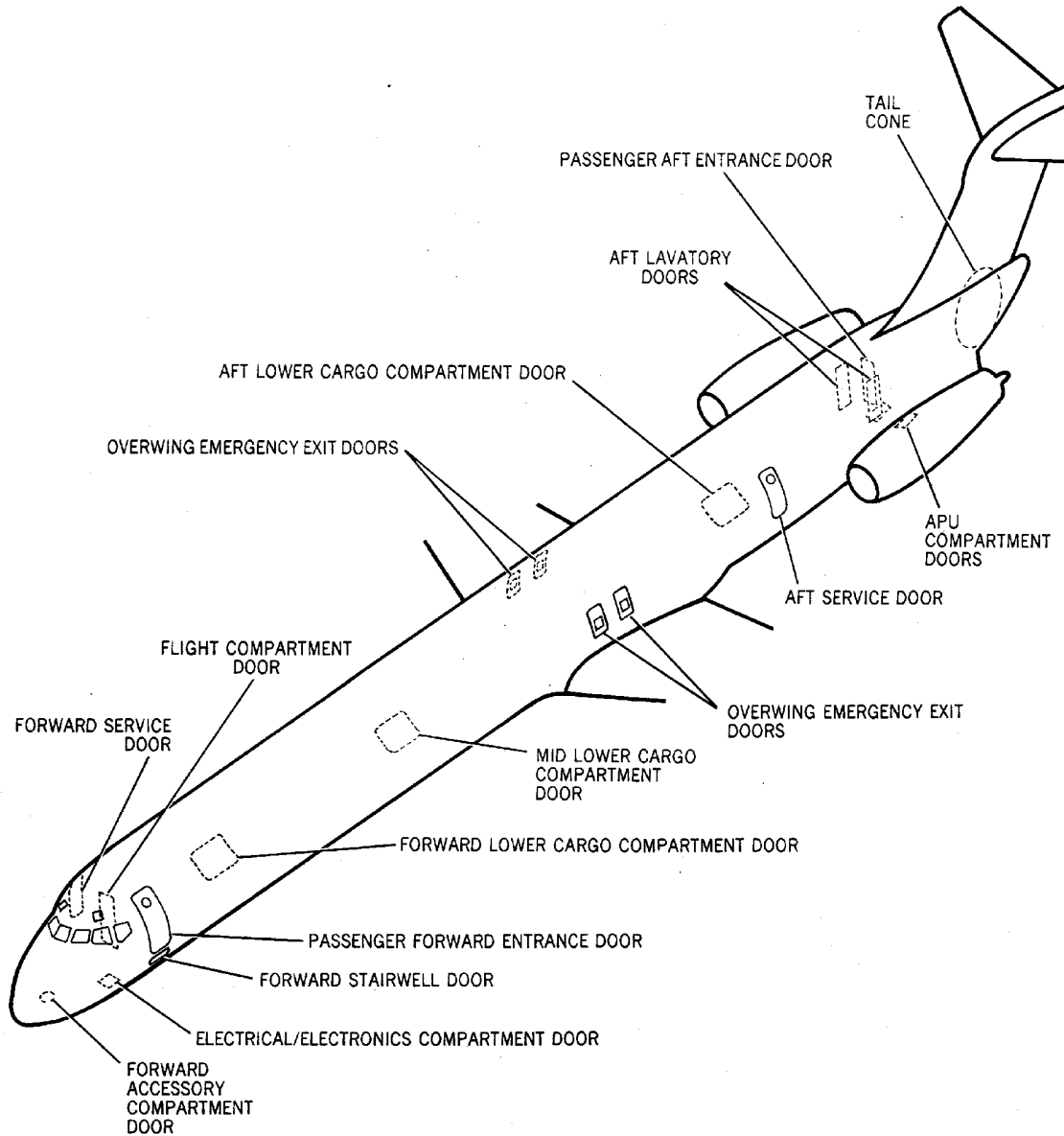
**EFFECTIVITY**

WJE 401-412, 414-427, 429, 861-866, 868, 869,  
871-874, 880, 881, 883, 884, 891-893

TP-80MM-WJE

**52-00-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-99

**Doors -- General**  
Figure 1/52-00-00-990-801 (Sheet 2 of 2)

EFFECTIVITY  
WJE 875-879, 886, 887

TP-80MM-WJE

## 52-00-00



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Emergency Exit

- A. Four emergency exit doors are provided for evacuation of the passenger compartment. The doors are located two on each side of the fuselage, in the overwing area. The doors are identical in size, construction, and operation. However, they are not interchangeable without adjustment.
- (1) Overwing Emergency Exit Doors - The overwing doors are secured at the bottom by rigid bayonets which fit into sockets located in the doorjamb. The doors are secured at the top by a mechanical latch which locks into the upper section of the doorjamb. The latch is actuated from inside or outside the aircraft by handles attached to a common shaft. For a complete description and operation of emergency exit doors, refer to EMERGENCY EXIT - DESCRIPTION AND OPERATION, PAGEBLOCK 52-20-00/001.

### 4. Cargo

- A. Cargo Doors - Three cargo doors are provided for access to the forward, mid, and aft lower cargo compartments, located in the lower section of the fuselage. The doors are located on the lower right side of the fuselage. Each door is attached to the fuselage structure by two hinges which permit the doors to open inward and upward. The doors are secured in the closed position by a latching mechanism actuated by an external handle, and in the open position by a hold-open latch which is engaged and released by actuating the door handle. For a complete description and operation of cargo doors, refer to CARGO - DESCRIPTION AND OPERATION, PAGEBLOCK 52-30-00/001 Config 1.

### 5. Service

- A. Service doors are provided for the passenger compartment, electrical/electronics compartment, forward accessory compartment and the APU compartment.
- (1) Forward Service Door - The forward service door is located on the right side at the forward end of the passenger compartment. The door can be opened from either inside or outside the aircraft by handles attached to a common shaft, which actuates the door mechanism. The door is equipped with a window to permit viewing the area adjacent to the door for obstructions before opening.
  - (2) Aft Service Door - The aft service door is located on the left side at the aft end of the passenger compartment. The door can be opened from either inside or outside the aircraft by handles attached to a common shaft, which actuates the door mechanism. The door is equipped with a window to permit viewing the area adjacent to the door for obstructions before opening.
  - (3) Electrical/Electronics Compartment Door - The electrical/ electronics compartment door is located in the lower surface of the fuselage just aft of the nosewheel well. The door can be opened from inside or outside the aircraft by handles attached to the latching mechanism.
  - (4) Forward Accessory Compartment Door - The forward accessory compartment door is located in the canted bulkhead in the upper section of the nosewheel well. The door is secured, in the closed position, to the bulkhead by fasteners attached to hinged latches. A tubular hinge attached to the upper surface of the door permits the door to be pushed upward and stowed on the structure in the compartment.
  - (5) APU Compartment Doors - The APU compartment doors are located in the lower surface of the fuselage just aft of the aft pressure bulkhead. The doors provide access to the left and right sides of the APU. For a complete description and operation of service doors, refer to SERVICE - DESCRIPTION AND OPERATION, PAGEBLOCK 52-40-00/001.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-00-00**

Page 4  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 6. Fixed Interior

- A. Doors are provided for the flight compartment and the forward and aft lavatories.
- (1) Flight Compartment Door - The flight compartment door consists of two sections hinged together. The right section is hinged to the structure on the right side of the door opening to allow the door to fold to the right. The door can be opened from either side by knobs attached by linkage to a latch bolt. A lock is provided to permit the door to be locked from inside the flight compartment by actuating a thumb latch and from the outside by a key. The lock is released when the door is opened from the flight compartment. For a complete description and operation of flight compartment door, refer to FIXED INTERIOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-50-00/001.
  - (2) Lavatory Doors - The lavatory doors are attached to the inboard partition of each lavatory by piano-type hinges. The doors are provided with latches which can be operated from either side by knobs attached to a common shaft, and locks that can be operated only from the lavatory side. When each door is closed and locked, a sign attached to the bolt of the lock is visible through a door window. The sign indicates the door is locked and the lavatory occupied. For a complete description and operation of lavatory doors, refer to FIXED INTERIOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-50-00/001.

### 7. Entrance Stairs

- A. Two stairways are provided for passengers and crew to enter and leave the aircraft. One stairway is installed in a well just below the passenger forward entrance door. The other stairway is installed in the aft accessory compartment. The aft stairway is accessible through the passenger aft entrance door.
- (1) Passenger Forward Entrance Door Stairway - The forward stairway is an electromechanically operated assembly. Normally, the stairway is operated by dc power supplied by the aircraft dc power supply or by the batteries. If electrical power is not available, the stairway can be operated manually. The stairway is stowed in the aft upper section of the electrical/electronics compartment. A door covers the stairway opening in the fuselage when the stairway is stowed. A mechanical interlock prevents the stairwell door from being opened when the passenger forward entrance door is closed and locked, and prevents the passenger forward entrance door from being locked when the stairway is extended. For a complete description and operation of passenger forward entrance door stairway, refer to PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION, PAGEBLOCK 52-61-00/001 Config 1 or PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTIO, PAGEBLOCK 52-61-00/001 Config 2.
  - (2) Forward Stairwell Door - The forward stairwell door is located directly below the passenger forward entrance door. When closed, the door closes the opening in the side of the fuselage for the passenger forward entrance door stairway. For a complete description and operation of forward stair-well door, refer to FORWARD STAIRWELL DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-62-00/001.

EFFECTIVITY  
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**52-00-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (3) Passenger Aft Entrance Door Stairway - The aft stairway is a hydraulically operated assembly. Hydraulic power to operate the stairway is supplied by the auxiliary hydraulic pump or the handpump in the right main gear wheel well. If hydraulic power is not available the stairway can be extended and retracted manually. The stairway is actuated by a hydraulic actuating cylinder. The stairway is controlled by a valve actuated by control cables attached to handles installed on the attendant's stairway control panel located at the forward end of the stairwell, and in a well in the lower surface of the fuselage adjacent to the stairway opening in the fuselage. For a complete description and operation of passenger aft entrance door stairway, refer to PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION, PAGEBLOCK 52-63-00/001.

NOTE: Inspection Test Correct as Necessary (ITCAN) test procedures for the entire hydraulic system and related components. MAIN - ADJUSTMENT/TEST, PAGEBLOCK 29-10-00/501

### 8. Door Warning

- A. The door warning system provides the flight crew with a visible indication when any of the exterior doors of the compartments that can be pressurized is open and when the passenger aft entrance door stairway is not latched in the retracted position. The warning system consists of amber indicating lights on the annunciator panel for the exterior doors, an amber light on the upper main instrument panel for the main landing gear doors, and proximity switches actuated by the doors. When an exterior door is opened the light on the annunciator panel for that door comes on. For a complete description and operation of door warning, refer to DOOR WARNING - DESCRIPTION AND OPERATION, PAGEBLOCK 52-70-00/001 Config 1 or DOOR WARNING - DESCRIPTION AND OPERATION, PAGEBLOCK 52-70-00/001 Config 2 or DOOR WARNING - DESCRIPTION AND OPERATION, PAGEBLOCK 52-70-00/001 Config 3 or DOOR WARNING - DESCRIPTION AND OPERATION, PAGEBLOCK 52-70-00/001 Config 4 or DOOR WARNING - DESCRIPTION AND OPERATION, PAGEBLOCK 52-70-00/001 Config 9 or DOOR WARNING - DESCRIPTION AND OPERATION, PAGEBLOCK 52-70-00/001 Config 10

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-00-00**

Page 6  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**DOORS - STRUCTURAL INSPECTIONS - INSPECTION/CHECK**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 52-05-03-211-801**

**2. Door, Main Entrance, STA 160 - 200 (Left Side) - Internal Structure**

**A. Inspection**

**SUBTASK 52-05-03-010-002**

(1) Remove door lining and insulation.

**SUBTASK 52-05-03-160-002**

(2) Clean inspection area as required.

**NOTE:** It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

**SUBTASK 52-05-03-211-002**

(3) Do the detailed inspection.

**NOTE:** A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

**SUBTASK 52-05-03-916-002**

(4) Apply surface treatments and/or corrosion inhibiting compound as required.

**NOTE:** Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

**SUBTASK 52-05-03-410-002**

(5) Install insulation and lining.

(6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

(7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

———— **END OF TASK** ————

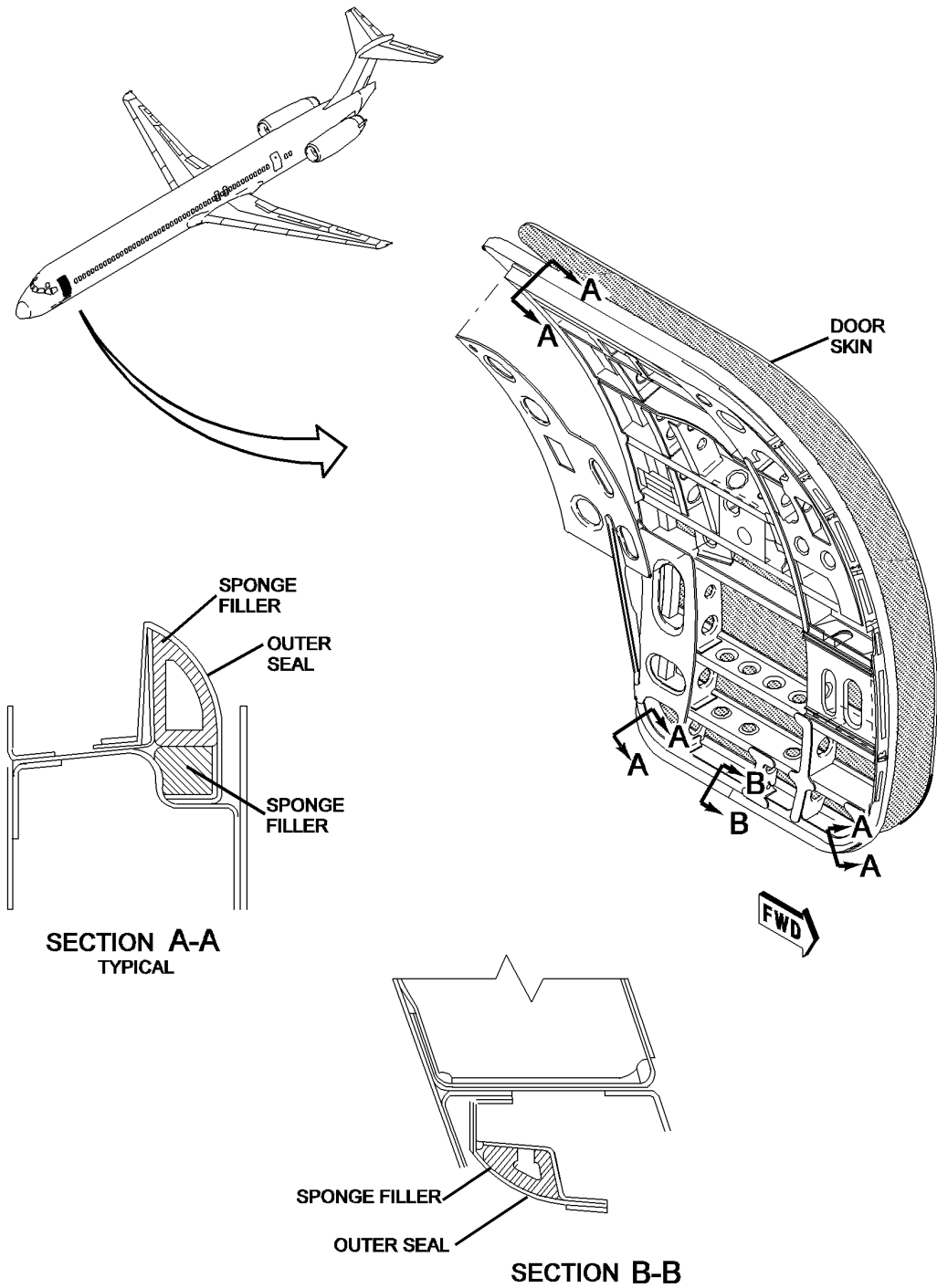
EFFECTIVITY  
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**52-05-03**

TP-80MM-WJE

Page 601  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-268  
S0000267008V1

**Passenger/Crew Main Entrance Door  
Figure 601/52-05-03-990-813**

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TP-80MM-WJE

**52-05-03**

Page 602  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### TASK 52-05-03-211-802

#### 3. Door, Aft Cabin Pressure Bulkhead, STA 1338 (MD-87, STA 1129) - Internal Structure

##### A. Inspection

SUBTASK 52-05-03-010-003

- (1) Remove door lining and insulation.

SUBTASK 52-05-03-160-003

- (2) Clean inspection area as required.

NOTE: It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-003

- (3) Do the detailed inspection.

NOTE: A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-003

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

NOTE: Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-003

- (5) Install insulation and lining.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

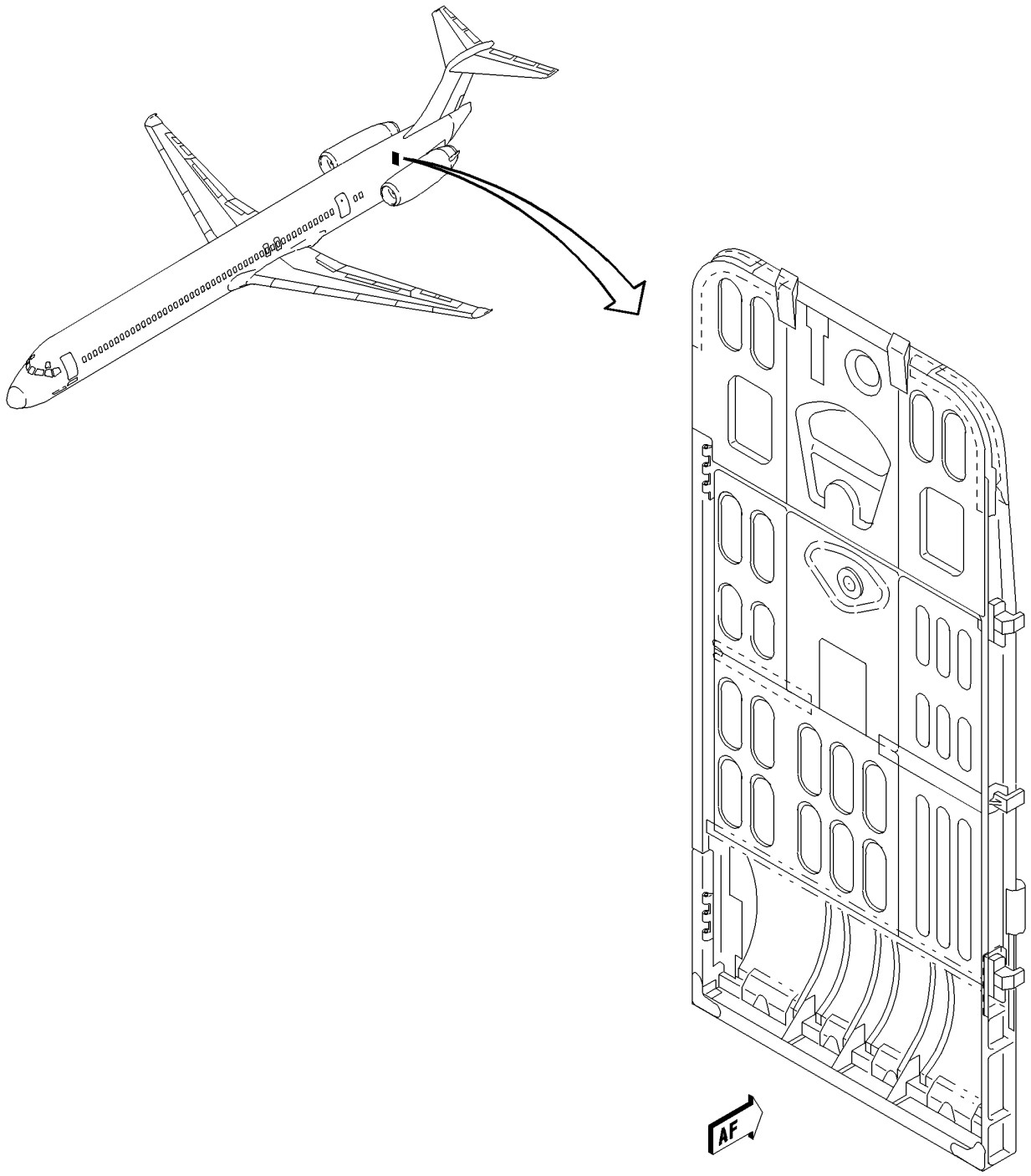
————— **END OF TASK** —————

EFFECTIVITY  
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# 52-05-03

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-269  
S0000267009V1

**Aft Pressure Bulkhead Door**  
**Figure 602/52-05-03-990-814**

EFFECTIVITY  
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TP-80MM-WJE

## 52-05-03

Page 604  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### TASK 52-05-03-211-803

#### 4. Door, Emergency Exit, Overwing, STA 864-927 (MD-87, STA 750-813) - Internal Structure

##### A. Inspection

SUBTASK 52-05-03-010-004

- (1) Remove door lining and insulation.

SUBTASK 52-05-03-160-004

- (2) Clean inspection area as required.

**NOTE:** It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-004

- (3) Do the detailed inspection.

**NOTE:** A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-004

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

**NOTE:** Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-004

- (5) Install insulation and lining.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

EFFECTIVITY  
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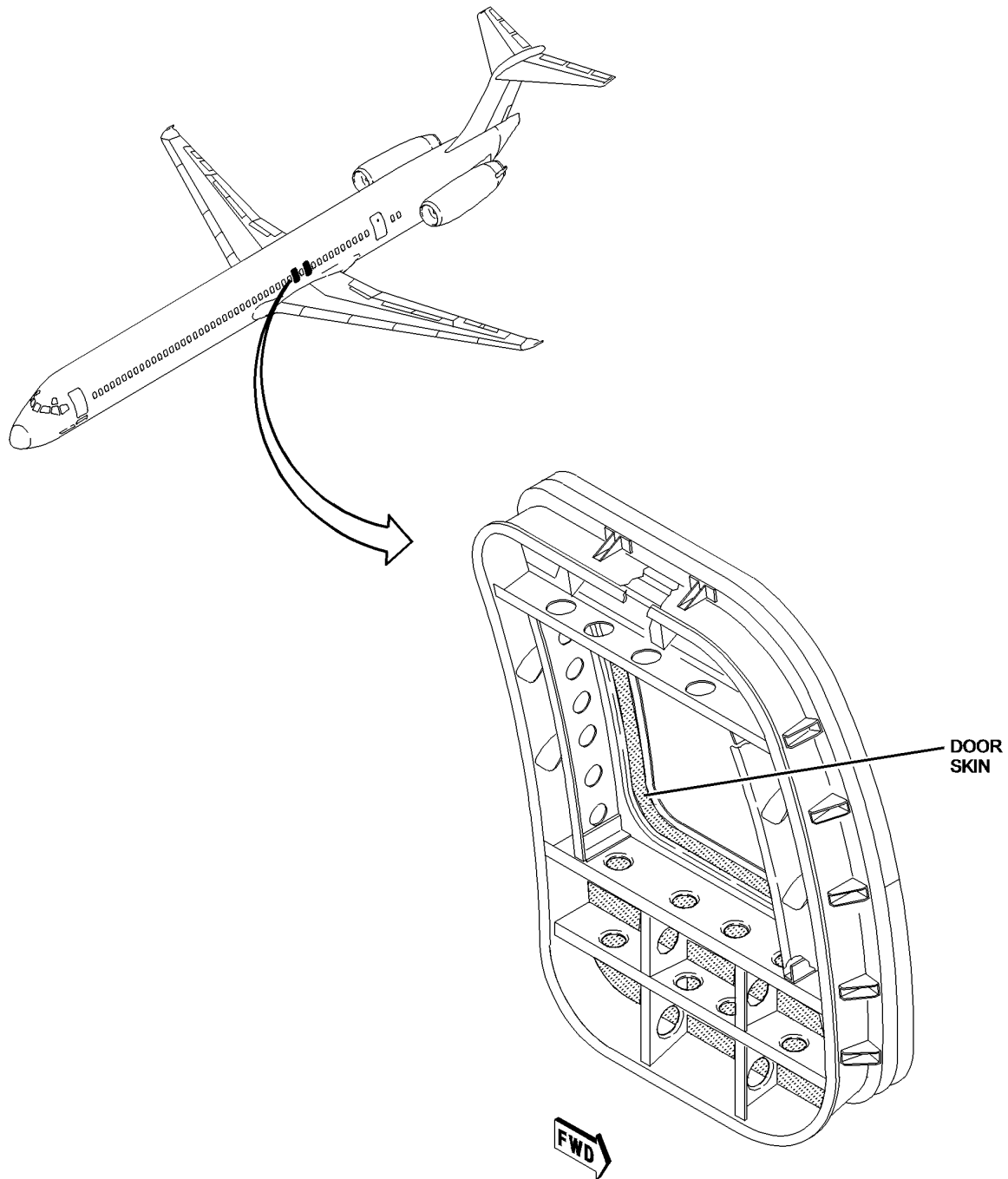
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# 52-05-03

Page 605  
Feb 01/2015



# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-270  
S0000267011V1

**Overwing Emergency Exit Doors**  
Figure 603/52-05-03-990-815

EFFECTIVITY  
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TP-80MM-WJE

## 52-05-03

Page 606  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

TASK 52-05-03-211-804

### 5. Door, Forward Lower Cargo, STA 370-427 (MD-87, STA 313-370) - Internal Structure

#### A. Inspection

SUBTASK 52-05-03-010-005

- (1) Remove door lining and insulation.

SUBTASK 52-05-03-160-005

- (2) Clean inspection area as required.

NOTE: It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-005

- (3) Do the detailed inspection.

NOTE: A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-005

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

NOTE: Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-005

- (5) Install insulation and lining.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

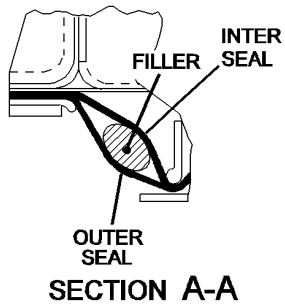
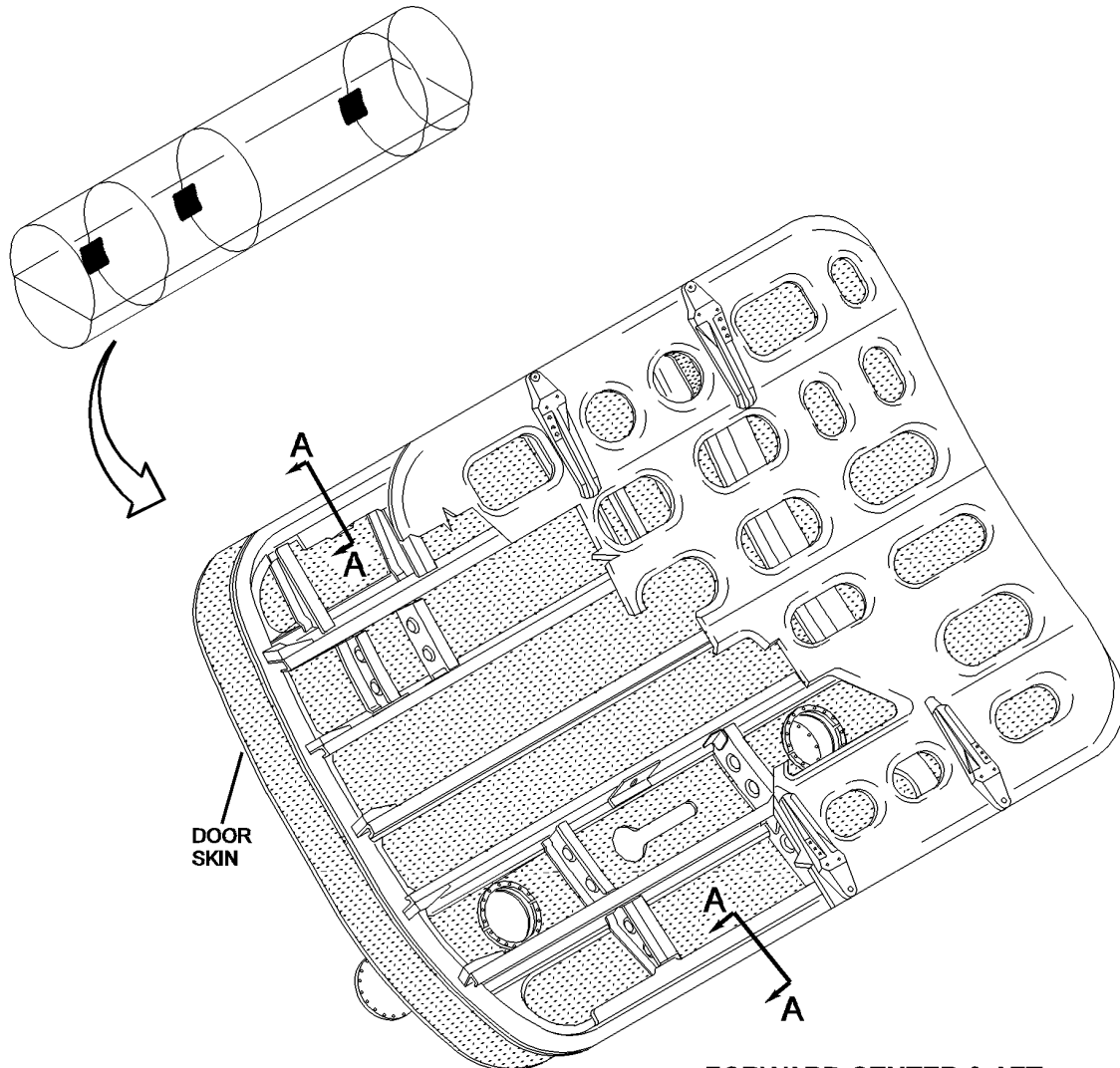
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TP-80MM-WJE

**52-05-03**

Page 607  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**FORWARD CENTER & AFT  
CARGO DOORS TYPICAL**

BBB2-52-271  
S0000267012V1

**Forward Lower Cargo Door Structure  
Figure 604/52-05-03-990-816**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-05-03**

Page 608  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### TASK 52-05-03-211-805

#### 6. Door, Center Lower Cargo, STA 636-693 (MD-87, STA 522-579) - Internal Structure

##### A. Inspection

SUBTASK 52-05-03-010-006

- (1) Remove door lining and insulation.

SUBTASK 52-05-03-160-006

- (2) Clean inspection area as required.

**NOTE:** It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-006

- (3) Do the detailed inspection.

**NOTE:** A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-006

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

**NOTE:** Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-006

- (5) Install insulation and lining.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

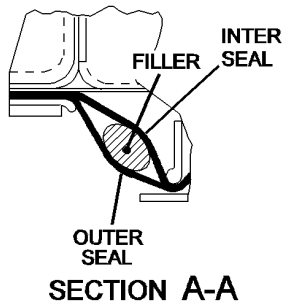
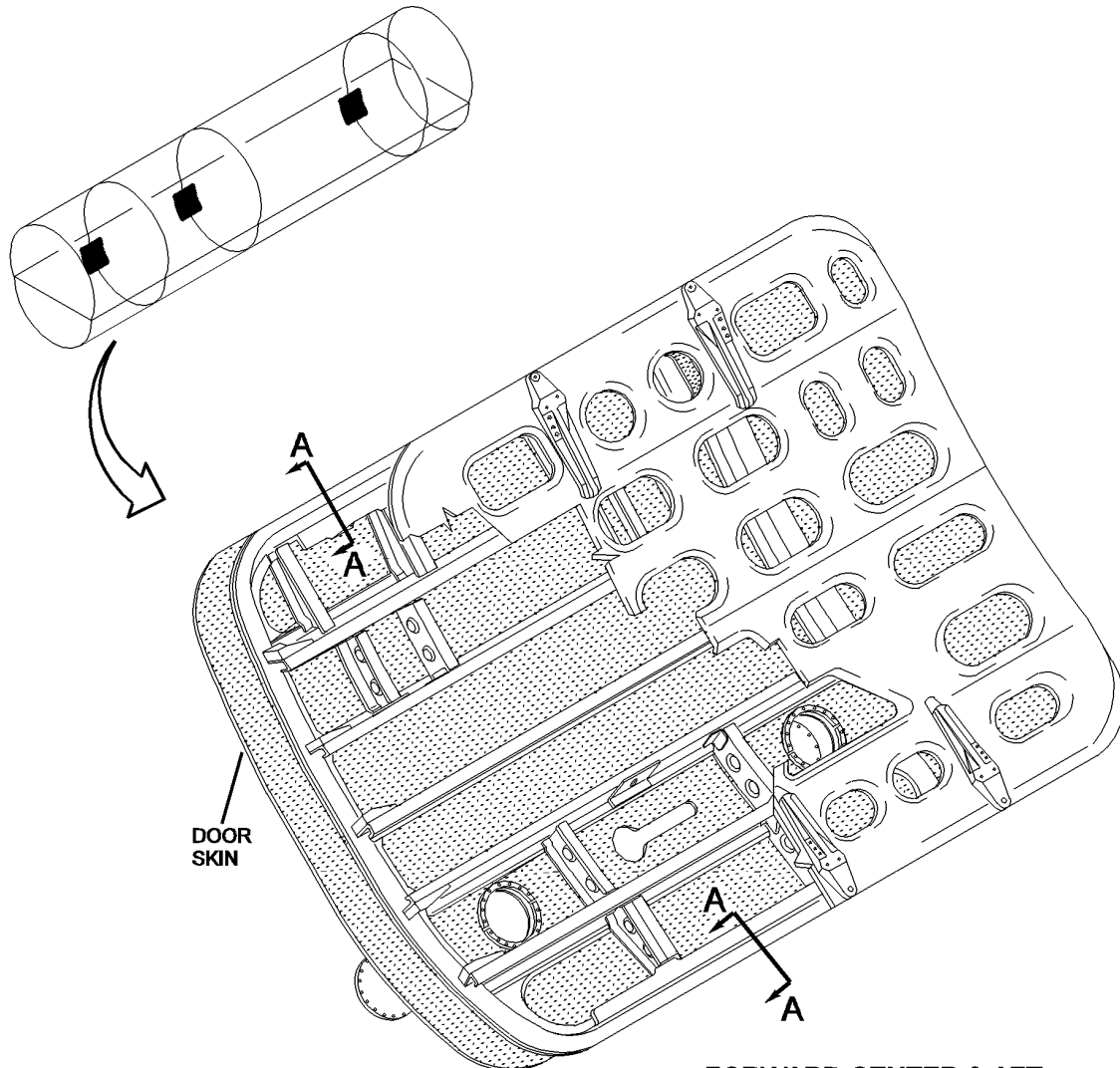
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# 52-05-03

Page 609  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



FORWARD CENTER & AFT  
CARGO DOORS TYPICAL

BBB2-52-272  
S0000267013V1

Center Lower Cargo Door Structure  
Figure 605/52-05-03-990-817

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 52-05-03

Page 610  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

TASK 52-05-03-211-806

### 7. Door, Aft Lower Cargo, STA 1156-1211 (MD-87, STA 966-1002) - Internal Structure

#### A. Inspection

SUBTASK 52-05-03-010-007

- (1) Remove door lining and insulation.

SUBTASK 52-05-03-160-007

- (2) Clean inspection area as required.

**NOTE:** It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-007

- (3) Do the detailed inspection.

**NOTE:** A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-007

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

**NOTE:** Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-007

- (5) Install insulation and lining.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

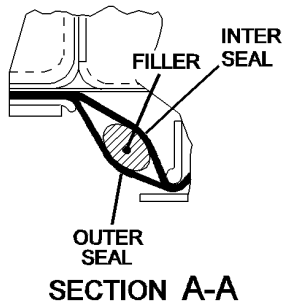
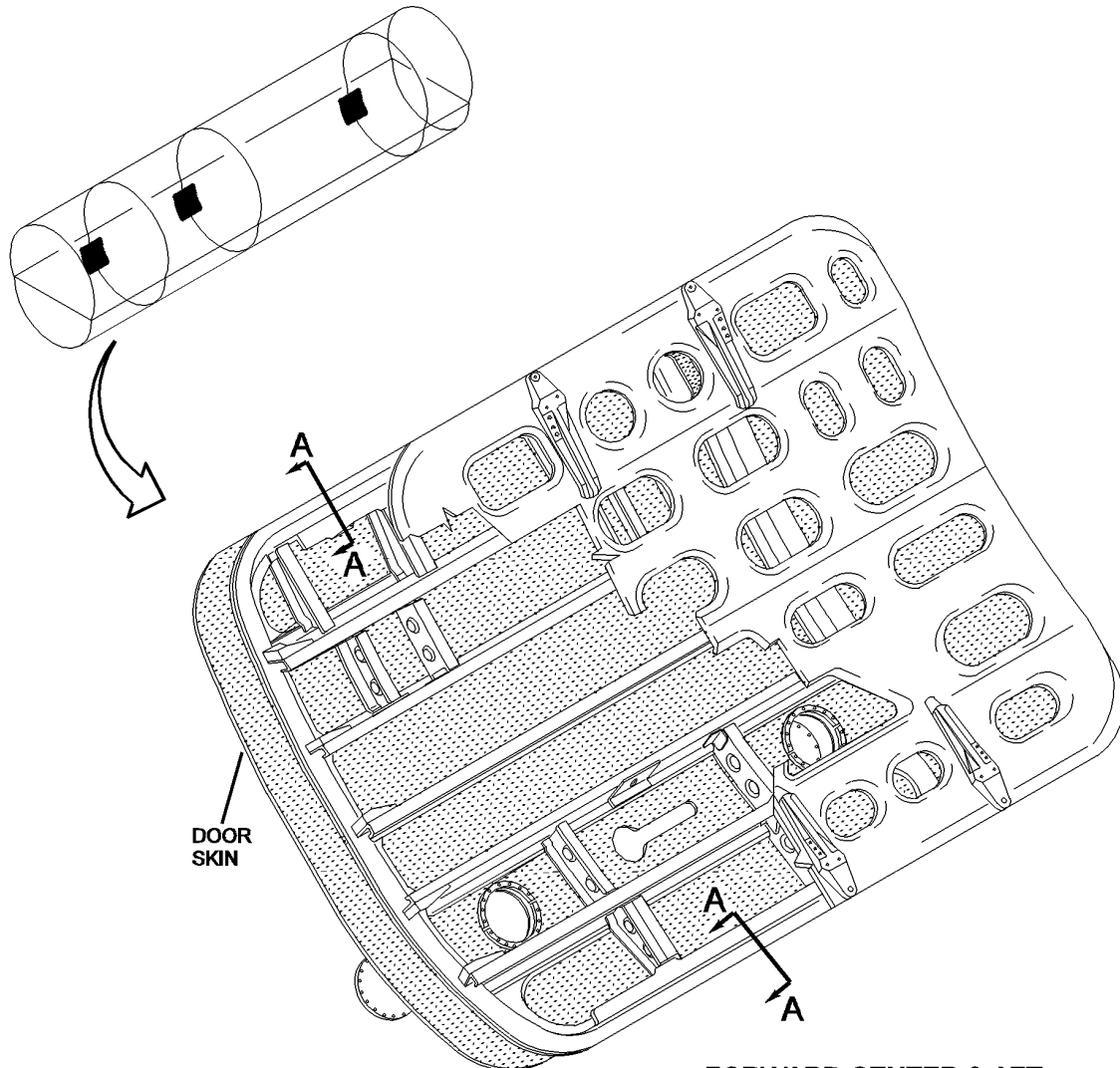
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TP-80MM-WJE

**52-05-03**

Page 611  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**FORWARD CENTER & AFT  
CARGO DOORS TYPICAL**

BBB2-52-273  
S0000267014V1

**Aft Lower Cargo Door Structure  
Figure 606/52-05-03-990-818**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-05-03**

Page 612  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

TASK 52-05-03-211-807

### 8. Door, Electrical / Electronics Compartment, STA 148 - Internal Structure

#### A. Inspection

SUBTASK 52-05-03-010-008

- (1) Remove panel from the E/E door.

SUBTASK 52-05-03-160-008

- (2) Clean inspection area as required.

NOTE: It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-008

- (3) Do the detailed inspection.

NOTE: A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-008

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

NOTE: Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-008

- (5) Install removed panel.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

EFFECTIVITY  
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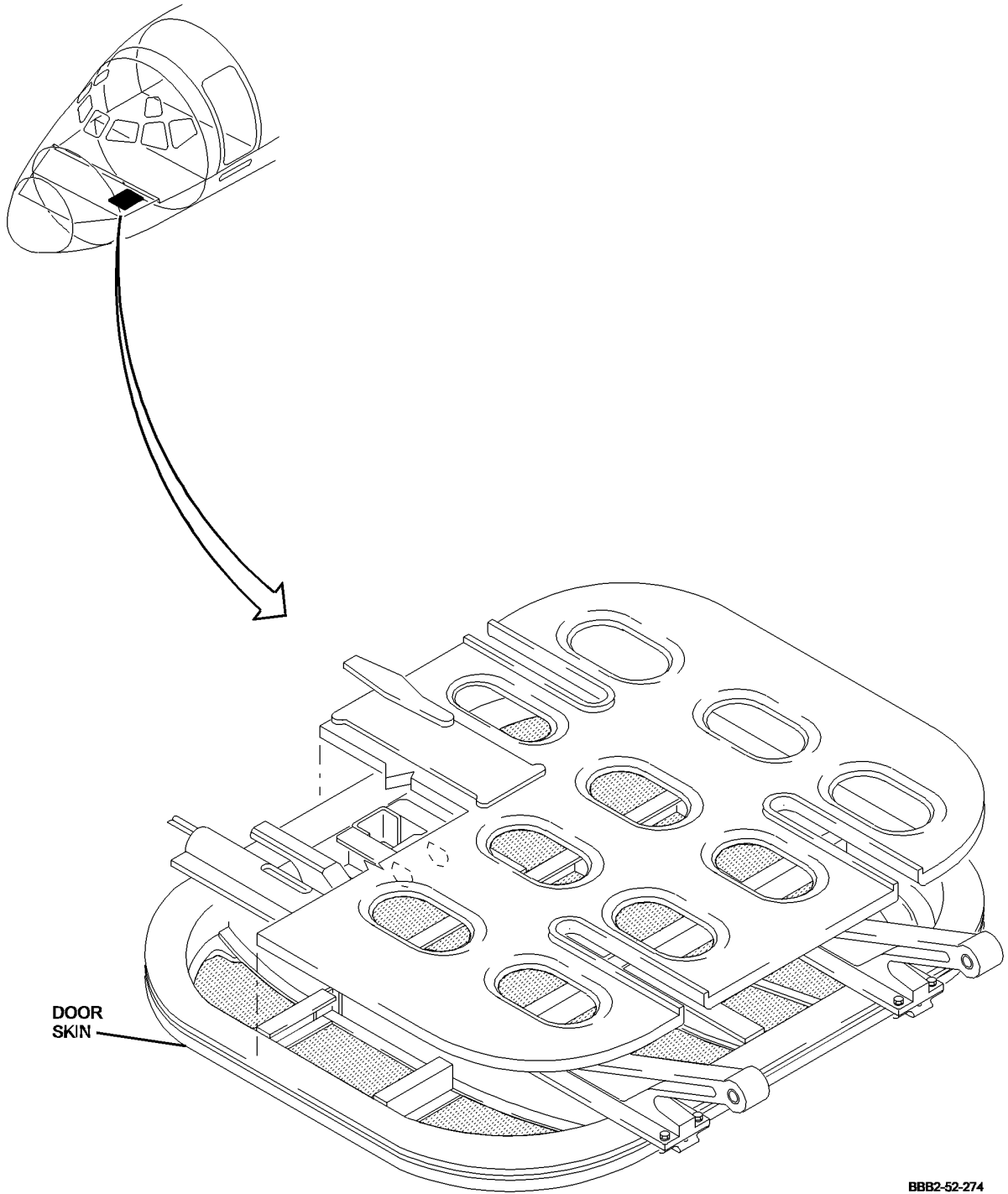
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**52-05-03**

Page 613  
Feb 01/2015



# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-274  
S0000267015V1

**E/E Door Structure**  
**Figure 607/52-05-03-990-819**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 52-05-03

Page 614  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

TASK 52-05-03-211-808

### 9. Door, Forward Galley Service, STA 168-200 - Internal Structure

#### A. Inspection

SUBTASK 52-05-03-010-009

- (1) Remove door lining and insulation.

SUBTASK 52-05-03-160-009

- (2) Clean inspection area as required.

NOTE: It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-009

- (3) Do the detailed inspection.

NOTE: A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-960-001

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

NOTE: Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-009

- (5) Install insulation and lining.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

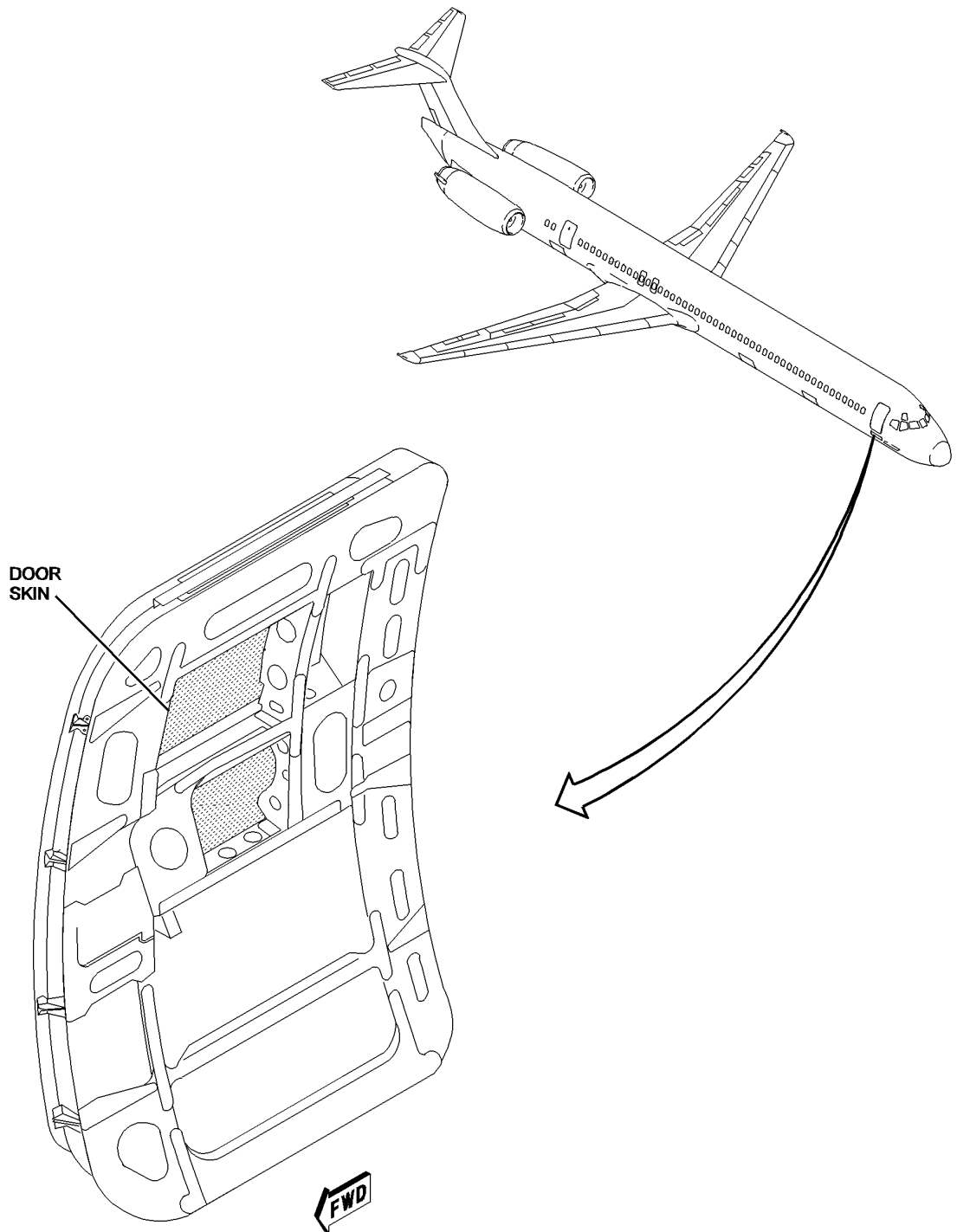
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TP-80MM-WJE

**52-05-03**

Page 615  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-275  
S0000267016V1

**Fwd Galley Service Door**  
**Figure 608/52-05-03-990-820**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 52-05-03

Page 616  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

TASK 52-05-03-211-809

### 10. Door, Aft Galley Service, STA 1140-1170 (MD-87, STA 949-979) - Internal Structure

#### A. Inspection

SUBTASK 52-05-03-010-010

- (1) Remove door lining and insulation.

SUBTASK 52-05-03-160-010

- (2) Clean inspection area as required.

**NOTE:** It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-010

- (3) Do the detailed inspection.

**NOTE:** A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-009

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

**NOTE:** Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-010

- (5) Install insulation and lining.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

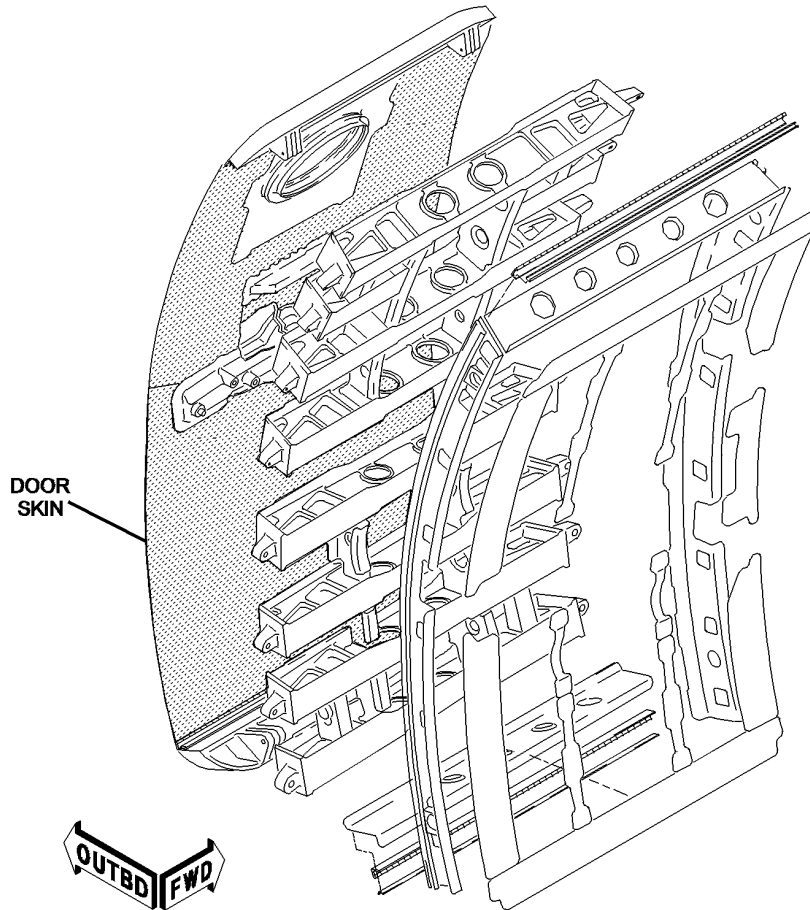
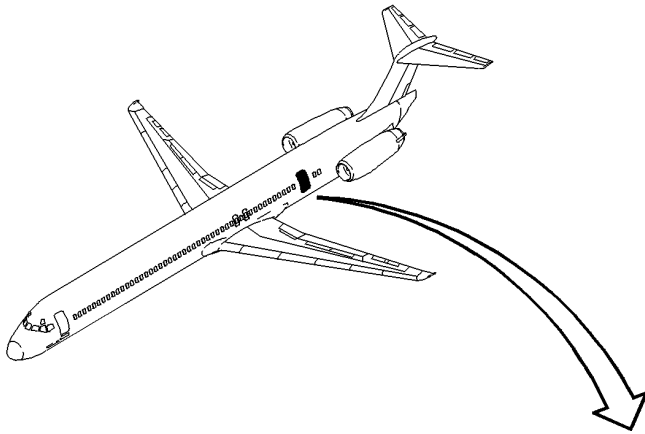
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**52-05-03**

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-276  
S0000267017V1

**Aft Galley Service Door**  
Figure 609/52-05-03-990-821

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WJE ALL

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## 52-05-03

Page 618  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### TASK 52-05-03-211-810

#### 11. Door, Forward Accessory Compartment, STA 41-69 - Internal Structure

##### A. Inspection

SUBTASK 52-05-03-010-011

- (1) Gain access.

SUBTASK 52-05-03-160-011

- (2) Clean inspection area as required.

NOTE: It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-011

- (3) Do the detailed inspection.

NOTE: A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-010

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

NOTE: Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-011

- (5) Close access.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

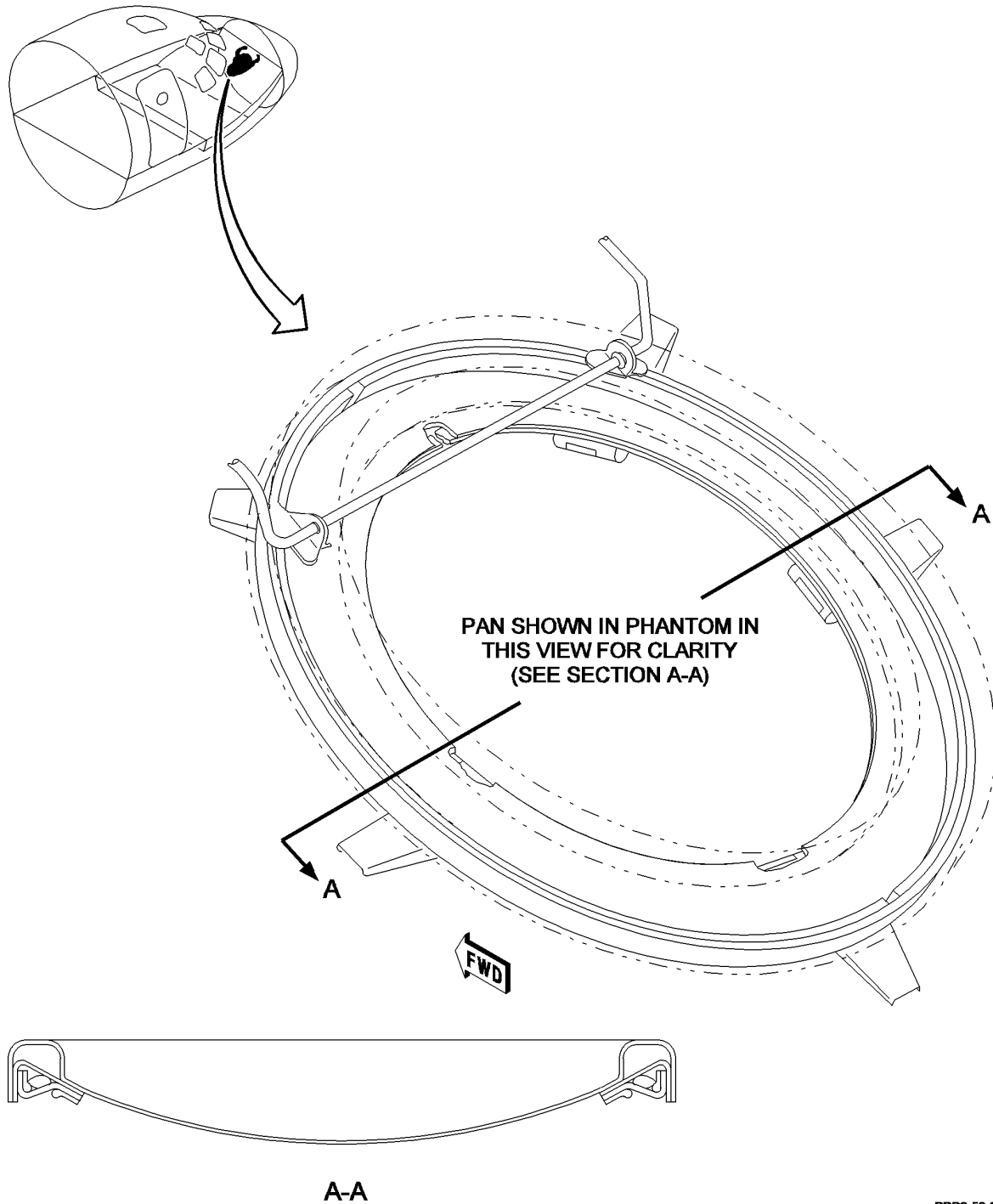
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# 52-05-03

Page 619  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-277  
S0000267018V1

**Fwd Accessory Compartment Door  
Figure 610/52-05-03-990-822**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-05-03**

Page 620  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

TASK 52-05-03-211-811

### 12. Doors, Main Landing Gear, STA 946-1003 (MD-87, STA 832-889) - Internal Structure

#### A. Inspection

SUBTASK 52-05-03-010-013

- (1) Remove MLG door covers as required to gain access to the door's internal structure.

SUBTASK 52-05-03-160-012

- (2) Clean inspection area as required.

NOTE: It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-012

- (3) Do the detailed inspection.

NOTE: A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-916-011

- (4) Apply surface treatments and/or corrosion inhibiting compound as required.

NOTE: Protective materials (e.g. corrosion inhibiting compounds, paints, etc.) shall be re-applied if removed to perform the inspection/maintenance task.

SUBTASK 52-05-03-410-012

- (5) Close MLG door covers.

- (6) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (6)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (7) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (7)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

EFFECTIVITY  
WJE ALL

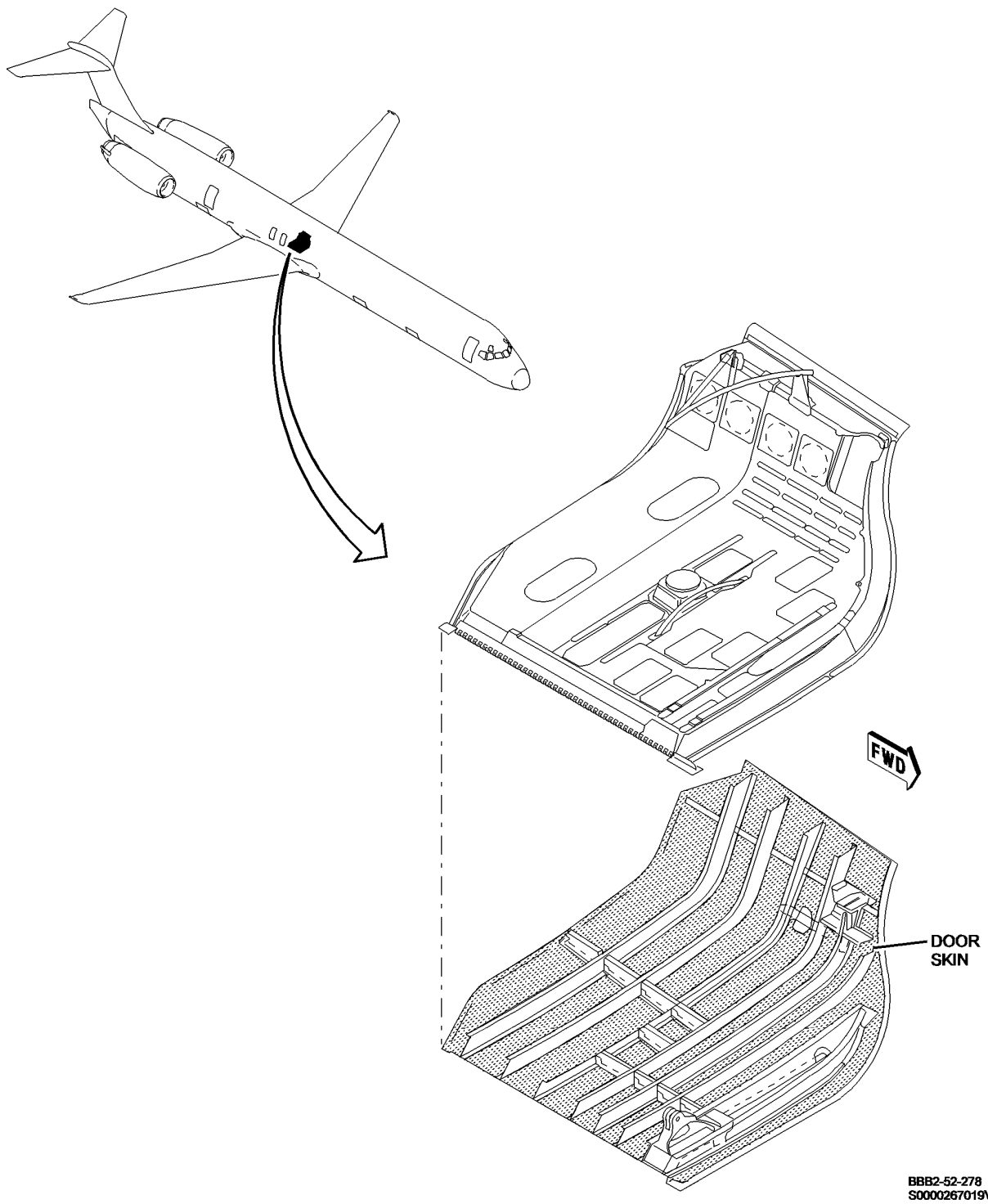
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**52-05-03**

Page 621  
Feb 01/2015



# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-278  
S0000267019V1

**Main Landing Gear Door**  
**Figure 611/52-05-03-990-823**

EFFECTIVITY  
WJE ALL

## 52-05-03

Page 622  
Feb 01/2015

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### TASK 52-05-03-211-812

#### 13. Doors, Main Landing Gear Strut - Structure

##### A. Inspection

SUBTASK 52-05-03-160-013

- (1) Clean inspection area as required.

NOTE: It is expected that the area to be inspected is clean enough to minimize the possibility that accumulated dirt, lint, fibers or grease might hide unsatisfactory conditions that would otherwise be obvious. Any cleaning that is considered necessary should be performed in accordance with accepted procedures in order to minimize the possibility of the cleaning process itself introducing anomalies.

SUBTASK 52-05-03-211-013

- (2) Do the detailed inspection.

NOTE: A detailed inspection is an intensive examination of a specific item, installation or assembly, to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses or other means may be necessary. Surface cleaning and elaborate access procedures may also be required.

SUBTASK 52-05-03-970-001

- (3) Record corrosion findings.

(a) Corrosion finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (3)(a), record specific area of corrosion on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

- (4) Record structural findings.

(a) Structural finding: Yes \_\_\_\_\_ No \_\_\_\_\_

(b) If yes in Step (4)(a), record specific area of structural cracking on a non-routine form and list the non-routine(s) identification number(s) here \_\_\_\_\_.

————— **END OF TASK** —————

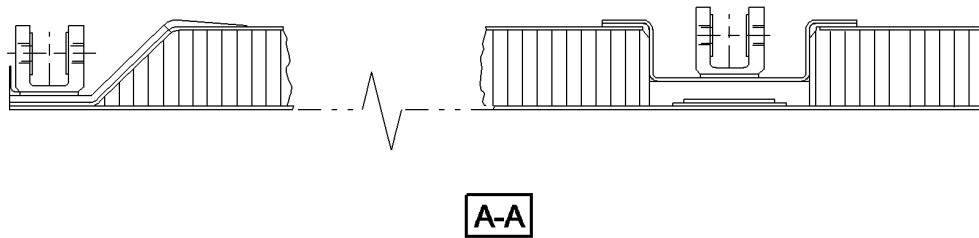
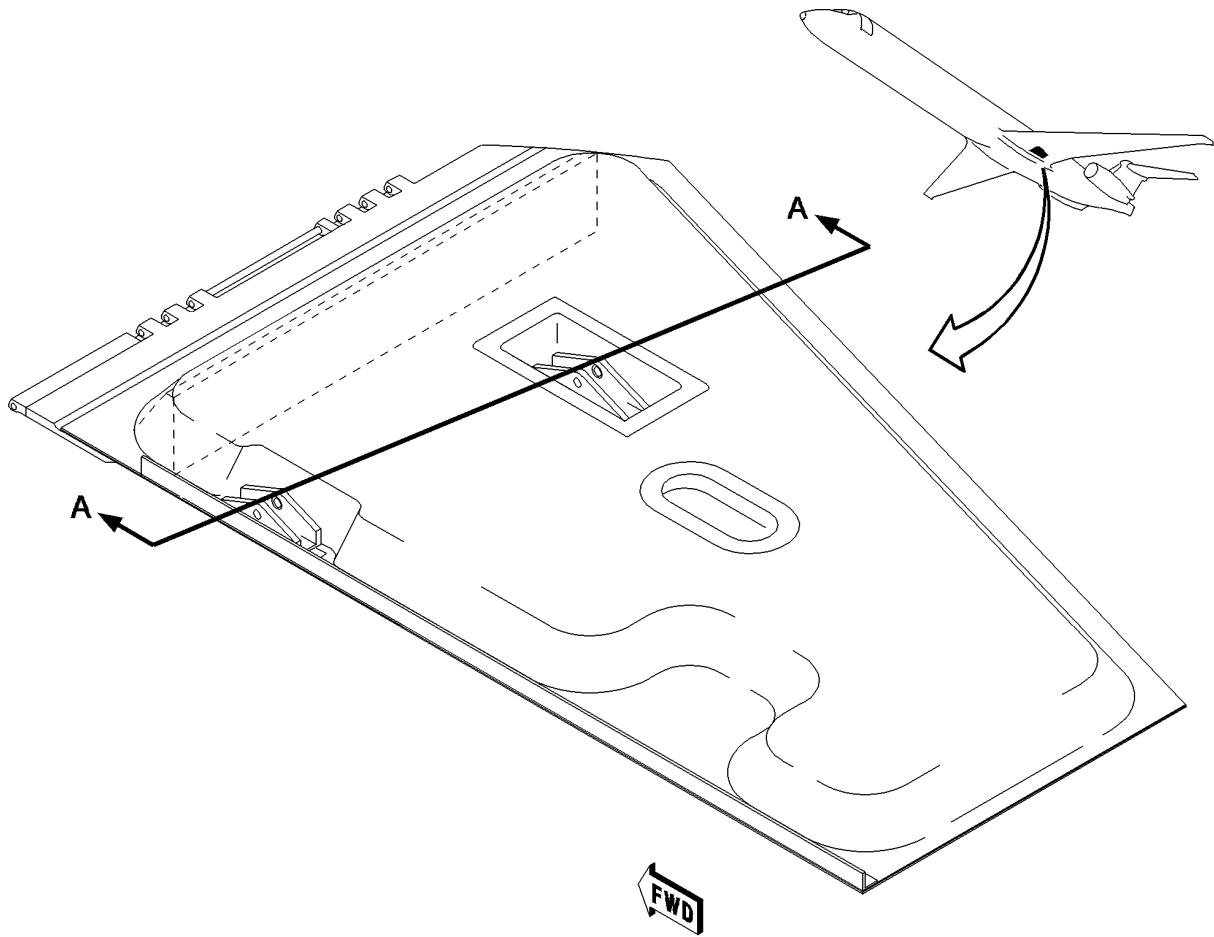
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# 52-05-03

Page 623  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-279  
S0000267020V1

**Main Landing Gear Strut Door**  
**Figure 612/52-05-03-990-824**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 52-05-03

Page 624  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER/CREW - DESCRIPTION AND OPERATION

#### 1. General

- A. Two doors are provided for passengers to enter and leave the passenger compartment. One door is located on the left side of the fuselage at the forward end of the passenger compartment. The other door is located in the aft pressure bulkhead.

Both doors are plug type. Pressure seals are installed on each door. The seals are depressed by seal depressers installed on the doorjamb. A proximity switch, installed in the doorjamb is actuated when the door is opened and completes a ground circuit to the door warning light on the annunciator panel.

For a complete description and operation of door warning, see DOOR WARNING, SUBJECT 52-70-00, Page 1.

#### 2. Passenger/Crew

##### A. Description

- (1) Passenger Forward Entrance Door - The passenger forward entrance door opens inward, forward, and then outward against the side of the fuselage. The hinge assembly consists of torque tubes and hinge sections. When fully opened, the door is held against the fuselage by a hold-open hook which is actuated by the door mechanism. The door can be opened from inside or outside the aircraft by handles attached to a common shaft. An interlock mechanism installed in the door is actuated by a lockpin installed in the doorjamb and prevents the door handle from being rotated to the door locked position when the forward stair-well door is unlatched. The interlock mechanism also prevents the stairwell door from being unlatched when the passenger door is closed and locked. A window is provided in the upper section of the door to permit viewing the area adjacent to the door before the door is opened. For a complete description and operation of passenger forward entrance door, refer to PASSENGER FORWARD ENTRANCE DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-11-00/001.
- (2) Passenger Aft Entrance Door - The passenger aft entrance door opens inward on hinges attached to the right side of the door and to the doorjamb. The door can be opened from the passenger compartment or the stairwell of the passenger aft entrance door stairway, by handles attached to a common shaft. The handles, when rotated, actuate linkage and bell-cranks to disengage lockpins from latches installed in the doorjamb. A viewing lens is installed in the upper section of the door for viewing the stairwell before opening the door. For a complete description and operation of passenger aft entrance door, refer to PASSENGER AFT ENTRANCE DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-12-00/001.

EFFECTIVITY  
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TP-80MM-WJE

**52-10-00**

Page 1  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR - DESCRIPTION AND OPERATION

#### 1. General

- A. The passenger forward entrance door is of the plug-type design and is located on the left side of the fuselage at the forward end of the passenger compartment.

#### 2. Passenger Forward Entrance Door

##### A. Description

- (1) The passenger forward entrance door consists of frames and stiffeners covered by an outer skin and an inner lining. The door is attached to the fuselage structure by a hinge. The shape and installation of the hinge permits inward, forward, and outward movement of the door. The hinge is attached to the door and the doorjamb by torque tubes. (Figure 1) (Figure 2) (Figure 3) (Figure 4) (Figure 5) (Figure 6)
- (2) When closed, the door is sealed by a seal installed along the outer edges of the doorframe. The seal consists of a silicone rubber sheet and a sponge rubber filler. The silicone rubber sheet is attached to the doorframe by retainers which are secured to the door by screws. The sponge rubber filler is molded to fit the doorframe and is held in place by the silicone rubber sheet. The sections of the seal located on the upper and lower edges of the door are retractable, to permit the door to swing outward through the door opening.
- (3) A window is installed in the upper section of the door to permit viewing the area adjacent to the door before opening the door. The window installation consists of two panes of glass with an airspace between the panes to prevent fogging.
- (4) The door can be opened from either inside or outside the aircraft by handles attached to a common shaft. Rotating either handle actuates the door opening and seal-retracting mechanisms. An assist handle is attached to the inside of the door to aid in opening and closing the door. A snubber attached to the doorjamb torque tube and the fuselage structure protects against wind gusts and personnel slamming the door against the fuselage or doorjamb. A hold-open hook is provided on the door to hold the door against the fuselage when open. An interlock prevents the door handle from being rotated to the full locked position when the forward stairwell door is unlatched, and prevents the stairwell door from being unlatched when the passenger door is closed and locked.
- (5) The inner surface of the door is covered by a lining. The lining is constructed of insulation batts of glass fiber cemented to the door structure, plastic panels, hardwood blocking, and a sound barrier of dacron impregnated with silicone rubber. The barrier is installed along the outer edges of the lining and covers the opening between the door and doorjamb when the door is closed. The center section of the lining can be removed to gain access to the door mechanisms when the door is closed and locked. A window, installed in the upper section of the lining mates with the window installed in the door structure. The exposed surface of the lining is finished to blend with the airplane interior decor.
- (6) A door warning proximity switch is installed in the forward section of the doorjamb. A target, attached to the door, actuates the switch. When the door is open, the proximity switch completes a ground circuit to the forward cabin door open indicating light on the annunciator panel, and the light will come on. For a complete description and operation of door warning, Ref. DOOR WARNING, SUBJECT 52-70-00, Page 1.

##### B. Operation

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TP-80MM-WJE

**52-11-00**

Page 1  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** DO NOT ATTEMPT TO OPEN DOOR WHEN PASSENGER COMPARTMENT IS PRESSURIZED.

**CAUTION:** MAKE CERTAIN THAT HOLD-OPEN HOOK IS ENGAGED TO PREVENT POSSIBLE DAMAGE FROM WIND GUSTS SLAMMING DOOR AGAINST FUSELAGE OR STAIRWAY.

**CAUTION:** IF DOOR LINING AND/OR EVACUATION SLIDE ARE REMOVED, A WEIGHT OF APPROXIMATELY 48 POUNDS (22KG) MUST BE ATTACHED TO DOOR BEAM 7 OR 8 NEAR CENTER OF DOOR TO SIMULATE REMOVED ITEMS.

**CAUTION:** BEFORE OPENING DOOR FROM INSIDE, LOOK THROUGH DOOR WINDOW TO MAKE CERTAIN THAT AREA ADJACENT TO DOOR IS CLEAR OF OBSTRUCTIONS.

- (1) The door is opened by rotating the inner handle clockwise (outer handle counterclockwise). As the handle is rotated, the door will move inward and forward, and the upper and lower seal sections will retract. When the door handle reaches full travel, the cam followers on the spring-loaded bayonet engage a detent at the aft end of the cam, and the cam follower, on the door handle lock crank engages a detent in the door handle shaft, locking the door handle in the open position. The door is then pushed outward through the door opening, and to the full open position against the outside of the fuselage. As the door is rotated, the hold-open hook is rotated into position to engage the fitting installed in the side of the fuselage. When the door is full open, the hook is engaged and the door is held in the open position.
- (2) The door is closed by pulling the hook release handle, located on the hinged edge of the door to release the hold-open hook. The door is then pulled closed until the bayonet contacts the cam follower on the doorjamb. When the bayonet is rotated by the cam follower, the cam followers on the spring-loaded bayonet are disengaged from the detents in the bayonet cams and the lock crank is rotated to move the lock crank cam follower out of the detent in the door handle shaft, unlocking the door handle. Rotating the inner handle counterclockwise (outer handle clockwise) moves the door to the closed position and extends the seal sections at the top and bottom edges of the door. When the door is closed against the doorstops, the handle rotation is continued until the door rotation rod is overcenter in the door handle shaft to lock the handle, and the cam followers on the bayonet are on the flat section at the forward end of the cams to lock the bayonet.

**NOTE:** The door handle is preloaded approximately 30 foot-pounds in the overcenter position.

**CAUTION:** UNDER NO CIRCUMSTANCES IS AIRCRAFT TO BE PRESSURIZED WITH FORWARD STAIRWELL DOOR OPEN AND PASSENGER ENTRANCE DOOR CLOSED. FAILURE TO COMPLY WILL CAUSE STAIRWAY SHROUD TO COLLAPSE.

- (3) When the forward stairwell door is unlatched, the stairwell door interlock linkage is actuated by the stairwell door latching mechanism. The interlock linkage moves a lockpin, located in the forward edge of the doorjamb of the passenger door, outward from the doorjamb. As the passenger door is closed, the spring-loaded arm of the passenger door inter-lock, installed on the forward edge of the passenger door, is actuated by the lockpin. Cams and linkage in the passenger door are actuated by the arm to move a slide bar into position to stop the door handle shaft from rotating to the door locked position. The door handle will stop approximately 20 degrees from door closed position, thus preventing the passenger door from being locked when the stairwell door is unlatched.

### C. To Operate System

- (1) Open Door.

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**52-11-00**

TP-80MM-WJE

Page 2  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** DO NOT ATTEMPT TO OPEN DOOR WHEN PASSENGER COMPARTMENT IS PRESSURIZED.

- (a) Check through window for outside obstructions.
  - (b) Rotate door inner handle clockwise approximately 126 degrees (outer handle counterclockwise) or to rotation stop. Door will move in and forward.
  - (c) Push outward on handle or door. Bayonet will now lock handle in full rotated position.
  - (d) Push door to full open position, against outside of fuselage. Door will latch open.
- (2) Close Door.
- (a) Unlatch locked open door by releasing hold open latch.

**CAUTION:** DO NOT USE BAYONET AS A HANDLE. DO NOT PUSH OR PULL ON BAYONET WHEN OPENING OR CLOSING DOOR, OR DAMAGE TO DOOR OUTER SKIN MAY OCCUR.

- (b) Pull door closed, until bayonet contacts roller in jamb; continue pull to rotate bayonet. This action unlocks door handle.
- (c) Rotate inner handle counterclockwise (outer handle clock-wise) to full horizontal position. Door is now locked and cabin may be pressurized.

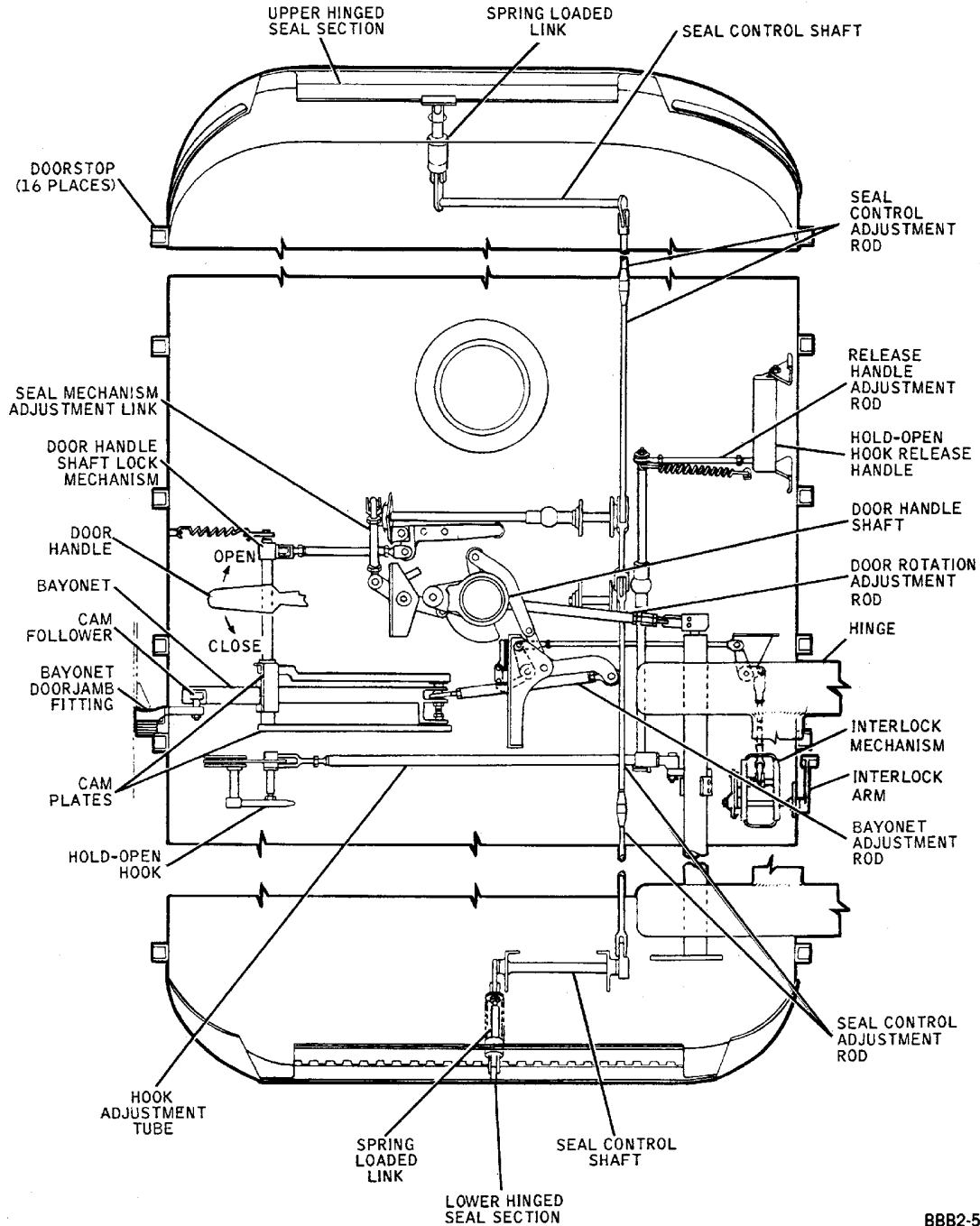
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TP-80MM-WJE

**52-11-00**

Page 3  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Forward Entrance Door -- Mechanism  
Figure 1/52-11-00-990-801**

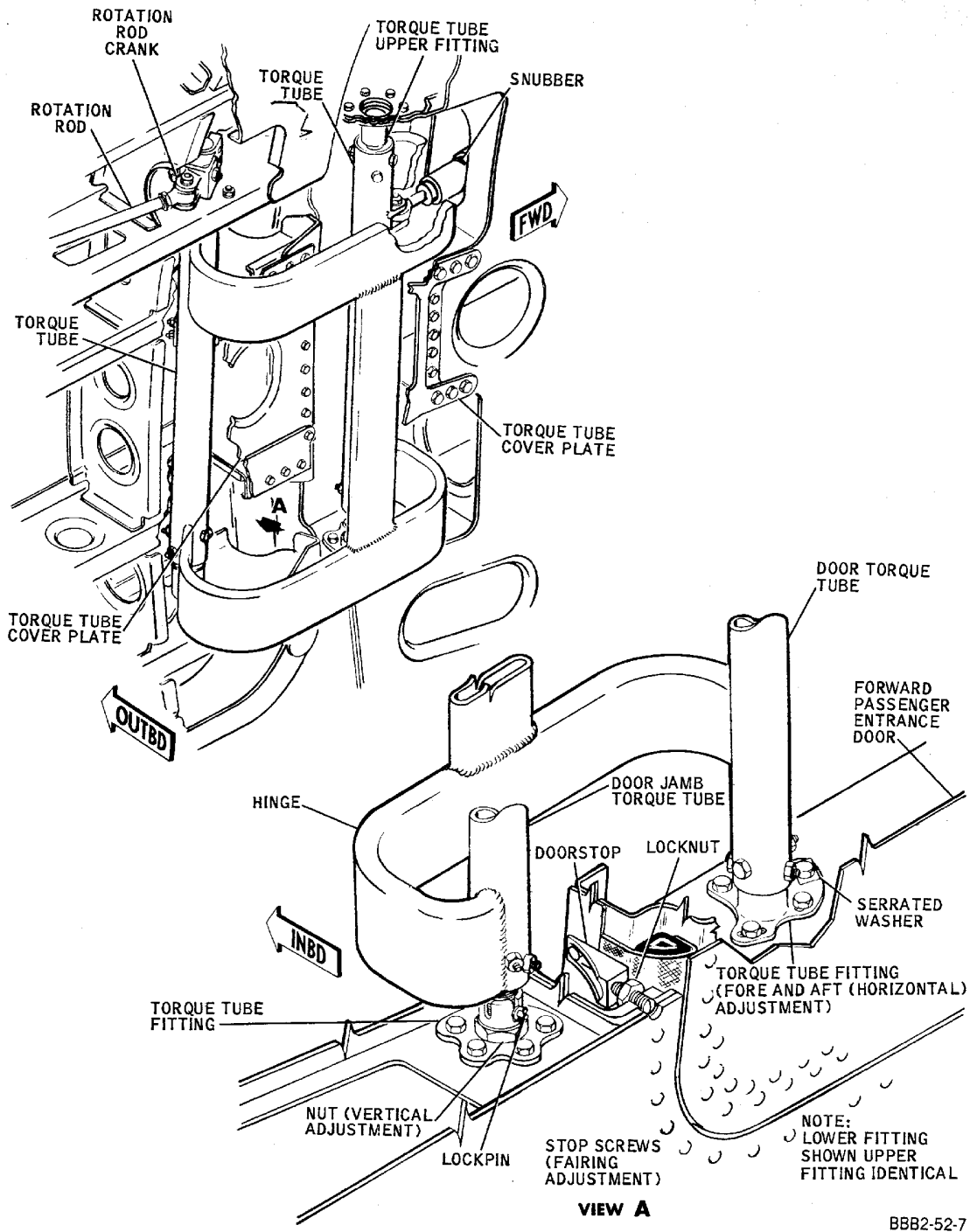
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**52-11-00**

TP-80MM-WJE



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Door Hinge Mechanism  
Figure 2/52-11-00-990-802**

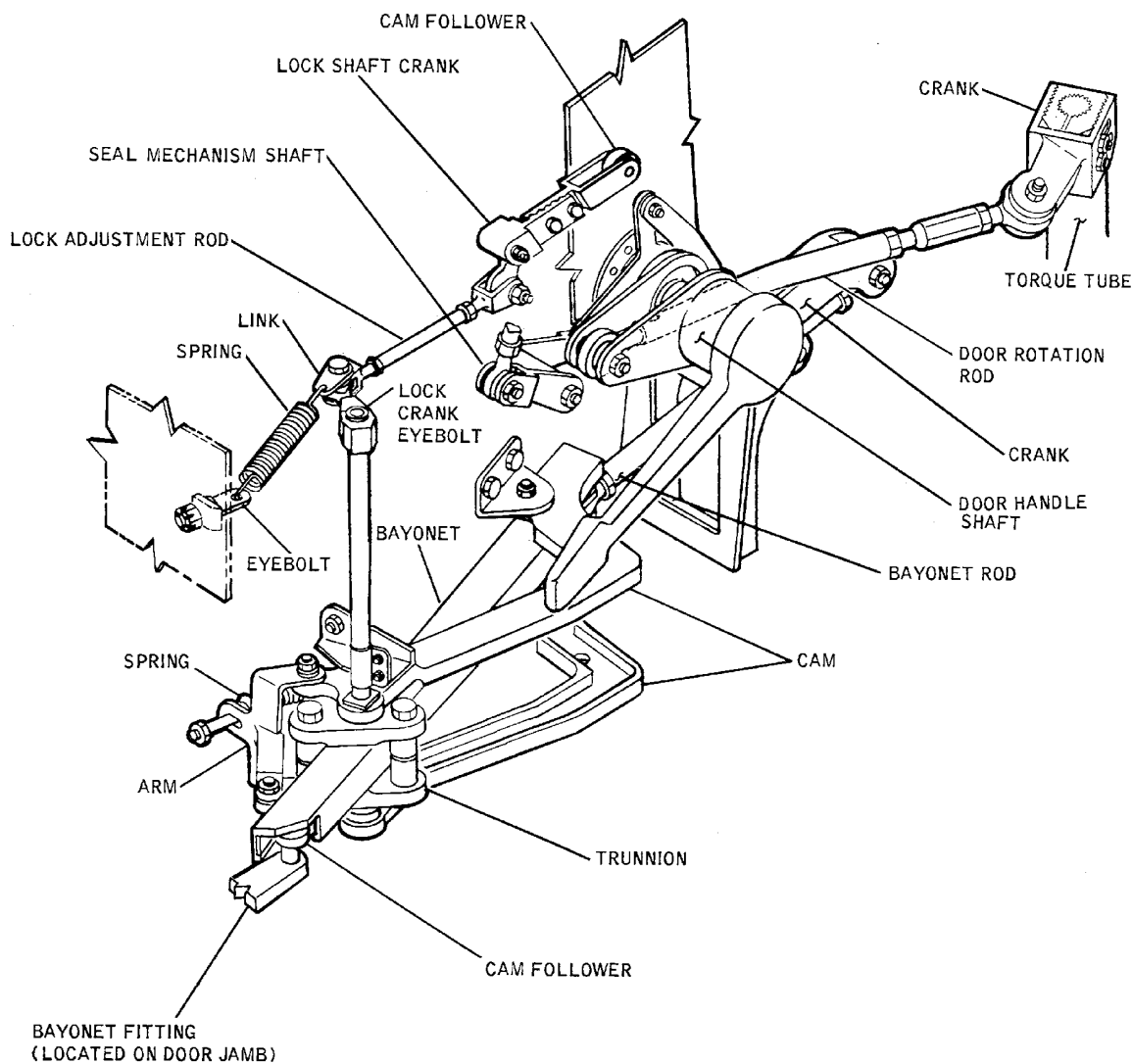
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**52-11-00**

TP-80MM-WJE

Page 5  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Door Bayonet and Door Rotating Mechanism  
Figure 3/52-11-00-990-803**

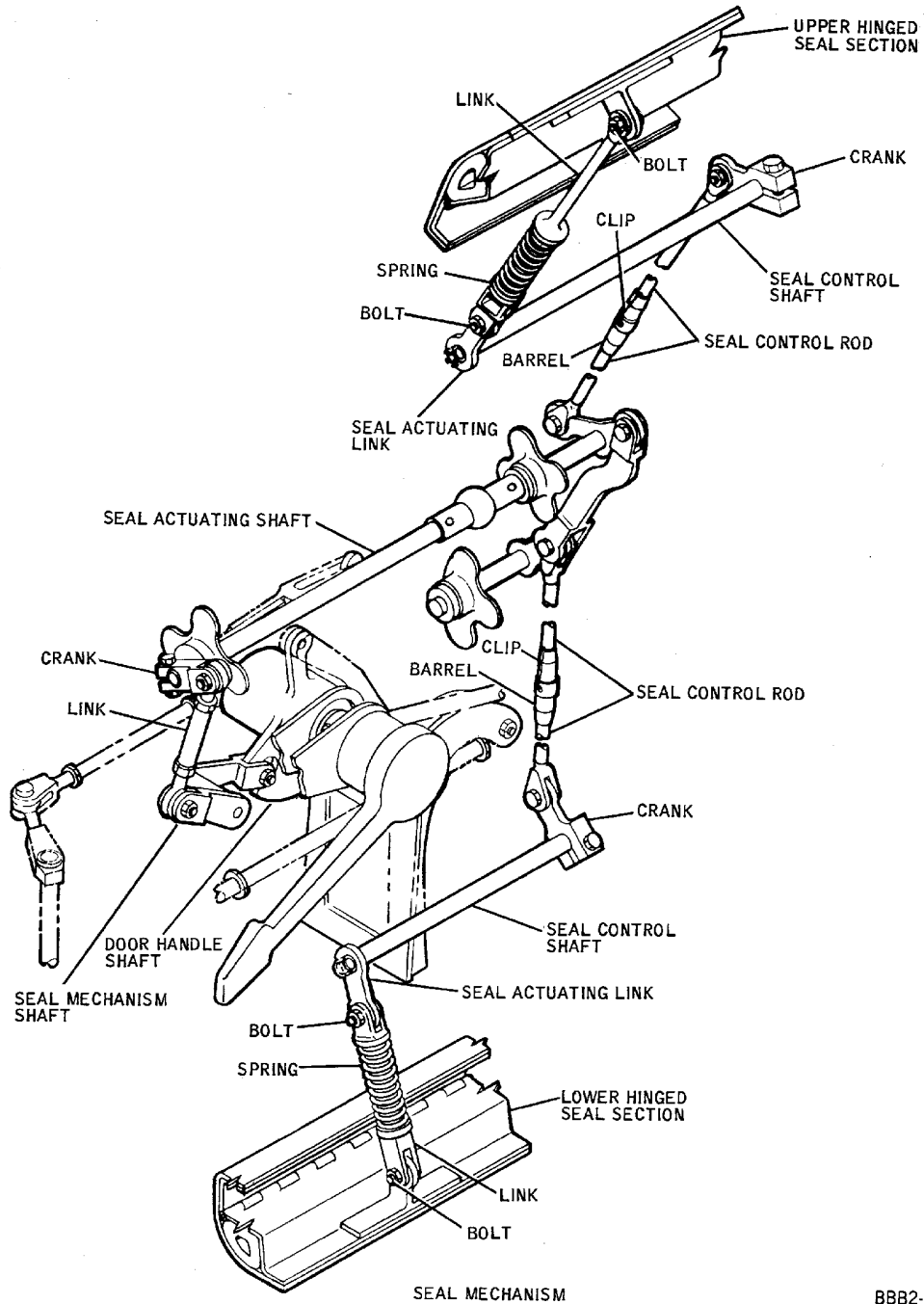
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**52-11-00**

TP-80MM-WJE

Page 6  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-9

**Door Operating Mechanism -- Upper and Lower Folding Seals  
Figure 4/52-11-00-990-804**

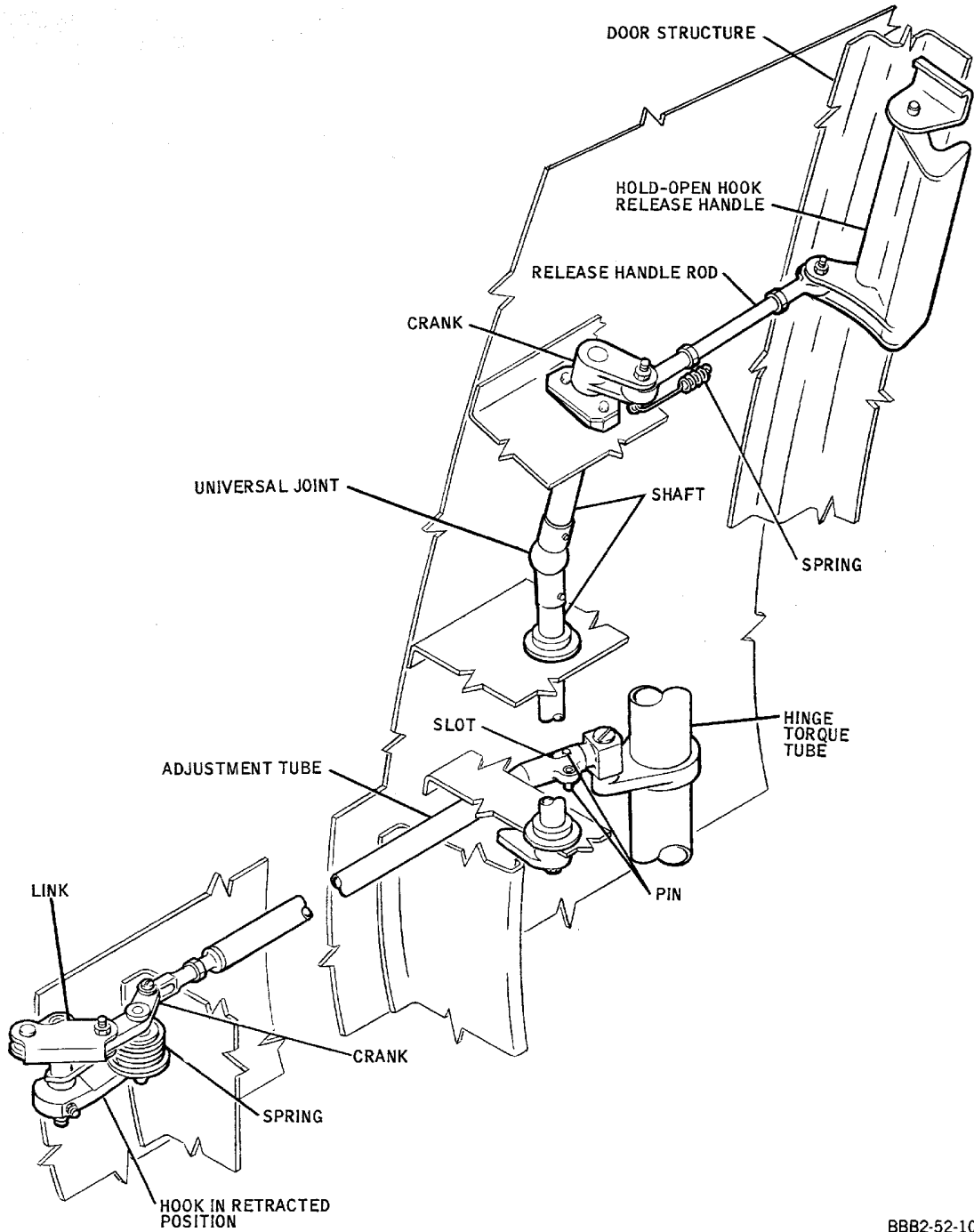
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**52-11-00**

TP-80MM-WJE

Page 7  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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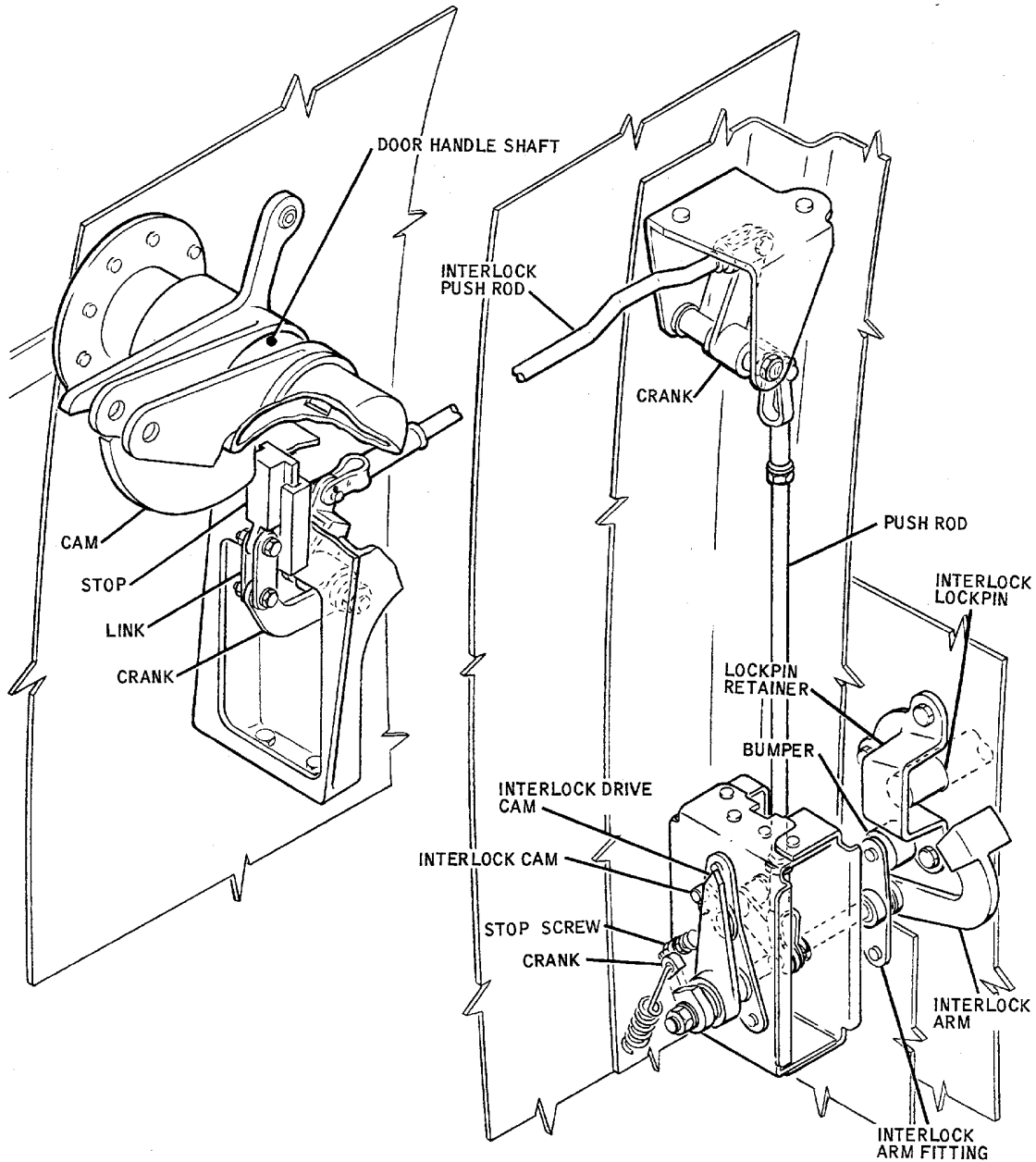
**Door Open Latch**  
**Figure 5/52-11-00-990-805**

EFFECTIVITY  
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## 52-11-00

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-11

**Airstair Door Interlock Mechanism**  
**Figure 6/52-11-00-990-806**

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

Page 9  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR - TROUBLE SHOOTING

**1. General**

A. This maintenance practice provides trouble shooting instructions for the passenger forward entrance door.

**2. Trouble Shooting Passenger Forward Entrance Door**

A. DOOR DIFFICULT TO LOCK AND UNLOCK

**Table 101**

Possible Causes	Isolation Procedure	Correction
(1) Door rotation rod not correctly adjusted	Check that maximum band load on inner door handle required to unlock and lock door is 40 pounds (18KG).	Adjust door mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(2) Bayonet or bayonet fitting on doorjamb not correctly adjusted	Check that cam followers on bayonet are on flat section of cams when door handle is in locked position (door closed) and that followers do not contact end of cams when handle is in door open position.	Adjust door mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
	Check that cam follower on doorjamb fitting is centered on bayonet and does not pick up doorstop loads when door is closed and locked.	Adjust door mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)

B. DOOR WILL NOT OPEN IMMEDIATELY AFTER AIRCRAFT IS DEPRESSURIZED

**Table 102**

Possible Causes	Isolation Procedure	Correction
(1) Interior panel at top of door binding or seal protruding and pinching	Check the bayonet to make sure that it rests outboard of the bayonet roller on doorjamb.	Adjust seal mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)

C. DOOR WILL NOT OPEN OR CLOSE CORRECTLY

**Table 103**

Possible Causes	Isolation Procedure	Correction
(1) Upper and lower hinged seals do not clear doorjamb	Check that seals retract and clear doorjamb.	Adjust seal mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(2) Door rotation rod not correctly adjusted	Check that door rotation rod is over- center in door handle shaft when door is closed.	Adjust door mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

Page 101  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 103 (Continued)**

Possible Causes	Isolation Procedure	Correction
(3) Door not adjusted correctly	Check that stopscrews are centered on door- stops within 3/16-inch (4.8 mm) when door is closed. Stop screw strike points should be measured under pressure only. Strike points on upper stops, if measured in static ground, will not portray accurate dimensions (if measurement can only be taken in static ground use stops #5 and #6 for reference).	Adjust door. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(4) Forward stair- well door interlock not adjusted correctly	Check that interlock arm on passenger door clears interlock pin and fitting on doorjamb, door forward stairwell latched.	Adjust interlock in passenger door. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
		Adjust forward stairwell door interlock linkage. (FORWARD STAIRWELL DOOR LATCH MECHANISM - ADJUSTMENT/TEST, PAGEBLOCK 52-62-01/501)

**D. DOOR DOES NOT OPEN AND CLOSE SMOOTHLY**

**Table 104**

Possible Causes	Isolation Procedure	Correction
(1) Torque tube fittings in door misaligned	Check that bolts attaching fittings are tight.	Tighten bolts and check horizontal adjustment. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(2) Snubber incorrectly adjusted	Check snubber operation.	Adjust, or replace snubber. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(3) Torque tube(s) binding in torque tube fitting in door or doorjamb	Check torque tube fittings and torque tubes for burrs and abrasions.	Clean and repair fittings and torque tubes.

Possible Causes Isolation Procedure Correction

**E. HOLD-OPEN HOOK WILL NOT ENGAGE AND/OR DISENGAGE**

**Table 105**

Possible Causes	Isolation Procedure	Correction
(1) Hold-open adjustment tube not correctly adjusted	Check operation of hold-open hook mechanism.	Adjust hold-open hook. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

Page 102  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 105 (Continued)**

Possible Causes	Isolation Procedure	Correction
(2) Hold-open hook release handle incorrectly adjusted	Check operation of hold-open hook release handle.	Adjust hold-open hook release handle. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(3) Hook or fitting in fuselage damaged	Check hook and hook fitting.	Repair or replace.

**F. AIR LEAK AROUND EDGE OF DOOR WHEN COMPARTMENT PRESSURIZED**

**Table 106**

Possible Causes	Isolation Procedure	Correction
(1) Damaged seal	Check seal for damage.	Repair seal. (SRM 52-04)
		Replace seal. (PASSENGER FORWARD ENTRANCE DOOR SEAL - MAINTENANCE PRACTICES, PAGEBLOCK 52-11-02/201)
(2) Upper or lower hinged seal not correctly adjusted	Check that seal contacts seal depressor when door is closed and locked.	Adjust hinged seal. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
		Seal gate rods at top and bottom of door should be adjusted to be straight within 1/16 in. when door is closed. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)

**G. AIR LEAK AROUND EDGE OF DOOR WHEN COMPARTMENT PRESSURIZED (Continued)**

**Table 107**

Possible Causes	Isolation Procedure	Correction
(3) Doorstop screws not correctly adjusted	Check that door fairs with fuselage skin.	Adjust doorstop screws. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(4) Damaged seal depressor	Check seal depressor for nicks, dents, and cracks.	Repair or replace seal depressor.
<b>NOTE:</b> If door has been recently repaired, lack of adequate faying surface sealant between door skin and door pan can cause pressure leak.		

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

Page 103  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger forward entrance door. (Figure 401)
- B. Two methods are provided for the removal and installation of the passenger door. One method (normal) removes the door at the doorjamb hinge attachment with the hinge and torque tubes remaining attached to the door. The other method (alternate) removes the door from the hinge. In the first method the doorjamb lining in the area of the hinge must be removed. The alternate method involves removing the door lining and removable inner door skin. The method selected should be determined by the maintenance required.

#### 2. Removal/Installation Passenger Forward Entrance Door

##### A. Remove Door (Normal)

- (1) Open passenger door.
- (2) Remove evacuation slide from passenger door. (PAGEBLOCK 25-62-00/201)
- (3) Remove panels covering doorjamb in area of door hinge.
- (4) Remove doorjamb torque tube cover plate located between upper and lower sections of hinge.
- (5) Disconnect snubber from doorjamb torque tube.
- (6) Remove lockpin from vertical adjustment nut on torque tube.
- (7) Adjust vertical adjustment nut on doorjamb torque tube until nut bottoms against lower side of hinge.

**CAUTION:** EXERCISE CARE WHEN POSITIONING BLOCKS TO PREVENT POSSIBLE DAMAGE TO DOOR SEAL AND DOOR STRUCTURE.

- (8) Position door outside fuselage, and provide suitable support to relieve hinge of door weight.

**NOTE:** Door can be supported by placing wooden blocks or other suitable material under bottom edge.

**CAUTION:** DOOR MUST BE SUPPORTED WHEN REMOVING BOLTS FROM TORQUE TUBE FITTINGS TO PREVENT POSSIBLE DAMAGE TO TORQUE TUBE FITTINGS.

- (9) Remove bolts from upper and lower doorjamb torque tube fittings.

**WARNING:** PASSENGER FORWARD ENTRANCE DOOR WEIGHS APPROXIMATELY 158 POUNDS (72 KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (10) Remove door by tilting top of door inward, then lifting door upward to free torque tube and lower torque tube fitting from doorjamb.

##### B. Install Door (Normal)

**NOTE:** When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

- (1) Install vertical adjustment nut on torque tube lower end.
- (2) Install spacer on torque tube upper end. Make sure there is 1/16 in. (1.59 mm) max. vertical play.
- (3) Position upper and lower torque tube fittings on torque tube.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-11-00**

Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** PASSENGER FORWARD ENTRANCE DOOR WEIGHS APPROXIMATELY 158 POUNDS (72 KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (4) Tilt top of door inward and insert lower torque tube fitting and torque tube into hole in doorjamb.

**NOTE:** The lower torque tube fitting must be held as far up on the torque tube as possible, while inserting fitting and torque tube into hole in doorjamb.

- (5) Rotate door to position upper torque tube fitting in doorjamb.
- (6) Install bolts attaching upper and lower torque tube fittings.
- (7) Adjust door. (PAGEBLOCK 52-11-00/501)

**NOTE:** If door removed in Paragraph 2.A. is being installed and no changes were made to the structure or hinge adjustment, the door should not require fore-and-aft (horizontal) or fairing adjustment.

- (8) Connect snubber to torque tube.

**NOTE:** If snubber adjustment was changed or a new snubber installed, it must be adjusted. (PAGEBLOCK 52-11-00/501)

- (9) Check door operation. (PAGEBLOCK 52-11-00/601 Config 1)
- (10) Install doorjamb torque tube cover plate.
- (11) Install panels covering doorjamb in area of door hinge.
- (12) Check door warning system. (PAGEBLOCK 52-70-03/201)
- (13) Install evacuation slide on passenger door. (PAGEBLOCK 25-62-00/201)

### C. Remove Door (Alternate)

**CAUTION:** PASSENGER FORWARD ENTRANCE DOOR, NOT INCLUDING HINGE AND LINING, WEIGHS APPROXIMATELY 115 POUNDS (52 KG).

- (1) Remove evacuation slide from passenger door. (PAGEBLOCK 25-62-00/201)
- (2) Remove door lining. (PASSENGER FORWARD ENTRANCE DOOR LINING, SUBJECT 52-11-01, page 201)

**NOTE:** The door lining must be removed to gain access to the torque tube fittings in the door.

- (3) Remove torque tube cover plate located between hinge sections.
- (4) Disconnect door rotation rod from torque tube.
- (5) Disconnect hold-open hook adjustment rod from torque tube.
- (6) Loosen bolts and remove rotation rod crank from torque tube.
- (7) Position door outside fuselage, and provide suitable support to relieve hinge of door weight.

**CAUTION:** DOOR MUST BE SUPPORTED WHEN REMOVING BOLTS FROM TORQUE TUBE FITTINGS TO PREVENT POSSIBLE DAMAGE TO TORQUE TUBE FITTINGS AND DOOR.

- (8) Remove bolts attaching torque tube fittings to door.

**WARNING:** PASSENGER FORWARD ENTRANCE DOOR WEIGHS APPROXIMATELY 115 POUNDS (52 KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (9) Remove door by tilting bottom of door outward, then lifting door upward to free torque tube from door.

EFFECTIVITY  
WJE ALL

# 52-11-00

TP-80MM-WJE

Page 402  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### D. Install Door (Alternate)

**NOTE:** When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

- (1) Position upper and lower torque tube fittings on torque tube.

**WARNING:** PASSENGER FORWARD ENTRANCE DOOR WEIGHS APPROXIMATELY 115 POUNDS (52 KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (2) Tilt bottom of door outward and insert upper torque tube fitting and torque tube into hole provided in door structure.

- (3) Rotate door to position lower torque tube fitting on door.

**NOTE:** The lower torque tube fitting must be held as far up on the torque tube as possible, while inserting fitting and torque tube into hole in door structure.

- (4) Install bolts attaching torque tube fittings to door.

**NOTE:** Torque tube fittings must be adjusted after the door installation is completed.

- (5) Install rotation rod crank on torque tube. Index crank slot 16(±1) serrations clockwise from machined flat when viewed from above.

- (6) Connect rotation rod to crank on torque tube.

- (7) Connect hold-open hook adjustment rod to crank on torque tube.

- (8) Adjust door. (PAGEBLOCK 52-11-00/501)

**NOTE:** If door removed in Paragraph 2.C. is being installed and no changes were made to the structure or hinge adjustment the door should not require vertical or fairing adjustment.

- (9) Adjust door mechanism. (PAGEBLOCK 52-11-00/501).

**NOTE:** Adjustment of the rotation rod for overcenter preload should be the only adjustment required if the door removed in Paragraph 2.C. is being installed and no changes were made to the door mechanisms.

- (10) Check door operation. (PAGEBLOCK 52-11-00/601 Config 1)

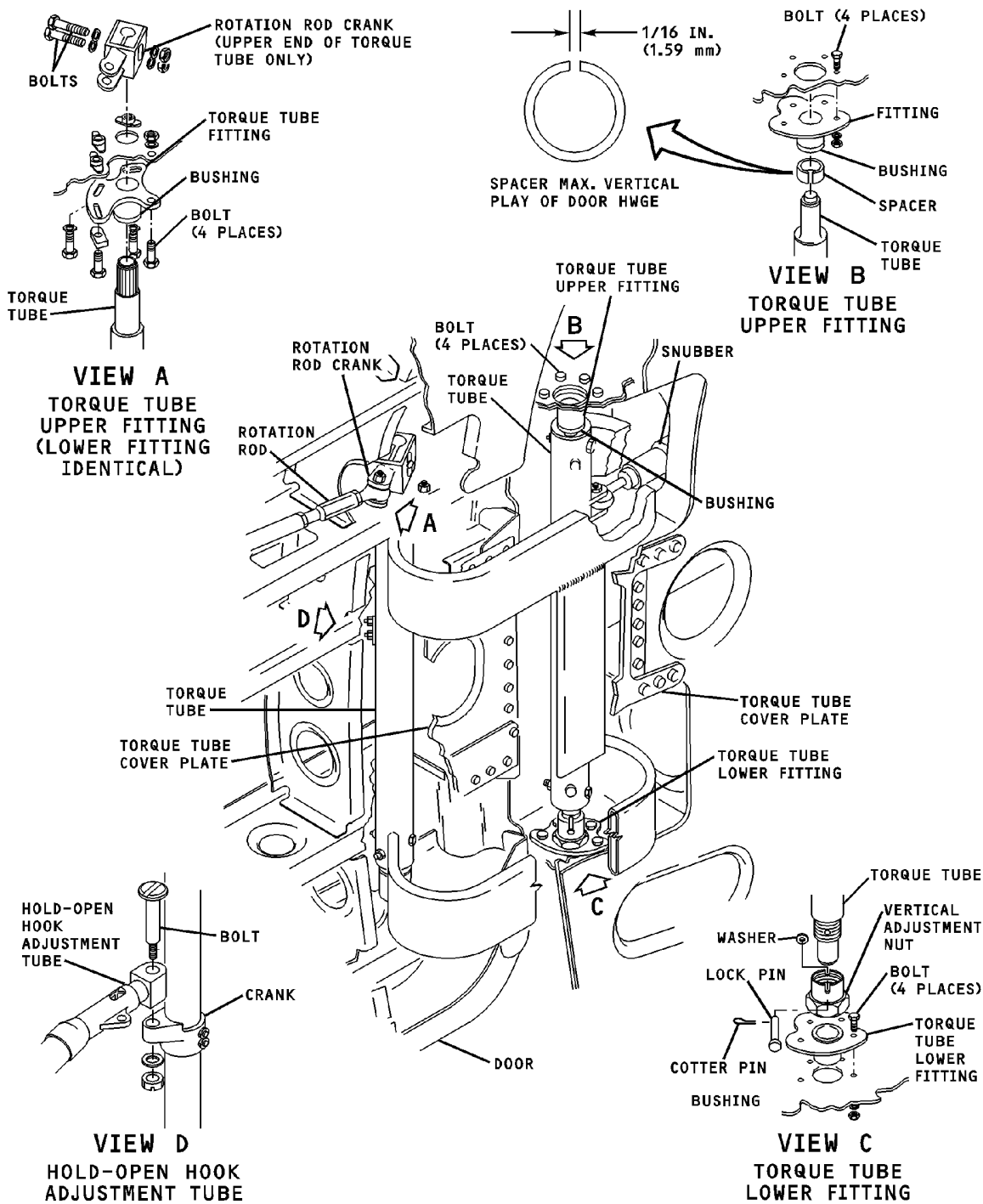
- (11) Install torque tube cover plate.

- (12) Check door warning system. (PAGEBLOCK 52-70-03/201)

- (13) Install door lining. (PASSENGER FORWARD ENTRANCE DOOR LINING, SUBJECT 52-11-01, page 201)

- (14) Install evacuation slide on passenger door. (PAGEBLOCK 25-62-00/201)

MD-80  
AIRCRAFT MAINTENANCE MANUAL



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Passenger Forward Entrance Door -- Installation  
Figure 401/52-11-00-990-807

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

52-11-00

Page 404  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practice provides adjustment/test instructions for the passenger forward entrance door. (Figure 501)
- B. Adjustment procedures consist of positioning the door correctly in the door opening; adjusting the door opening and hinged seal mechanisms to open and close the door; adjusting the hold-open hook to hold the door in the full open position; adjusting the forward stairwell door interlock to prevent locking the door when the stairwell door is open or opening the stairwell door when the passenger door is closed; and adjusting the snubber to prevent slamming the door against the fuselage or doorjamb.
- C. Adjusting the door affects the door mechanism adjustment, which in turn affects the hold-open hook and interlock adjustments. However, adjusting the door mechanism does not affect the door adjustment. Adjusting the hold-open hook, interlock, or snubber does not affect the door mechanism or door adjustments.

NOTE: On some aircraft, the hold-open hook may have a removable end for faster repair.  
(PAGEBLOCK 52-11-04/201)

- D. The fairing adjustment is included in the door adjustment, however, the door mechanism must be adjusted so the door can be closed and locked. The passenger compartment must be pressurized to make the final adjustment to fair the door with the fuselage, only when setscrews have been replaced or when a new door is installed.
- E. Door mechanical adjustment will affect the door when the door rotation rod is adjusted (shortened) to fair the forward side of door outboard. This adjustment will pull top of door slightly forward in most cases. If the rod is adjusted (lengthened) to fair the forward side of door inboard, the door will slightly sag. The top of the door will drop or tilt aft.

NOTE: The amount of door movement is proportional to the amount of (door rotation rod) adjustment made. A slight adjustment of door rotation rod will most likely not move the door forward or aft.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Adapter, torque, passenger and service door latch 4916787-1	Douglas Aircraft Co.
Torque wrench (0-600 inch- pounds range)	Commercially available
Sealant, polysulfide aluminized, AC-632, B2	Advanced Chemistry and Technology Garden Grove, CA

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Passenger Forward Entrance Door

NOTE: If door lining and/or evacuation slide are removed, a weight (approximately 48 pounds (21.8 kg)) must be attached to door beam 7 or 8 near center of door to simulate removed items.

NOTE: The doorjamb lining in the hinge area must be removed to adjust the door vertically.

NOTE: Before adjusting door, check that door is properly lubricated. (PAGEBLOCK 12-21-01/301)

NOTE: When adjusting door, check the integrity of the locknut(s) being tightened for its self locking feature before continuing adjustment procedure. (PAGEBLOCK 20-30-01/201)

#### A. Vertical Adjustment

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 501.

(1) Remove lockpin (1) from vertical adjustment nut (2) on doorjamb torque tube.

(2) Close passenger door.

NOTE: It may be necessary to adjust the door horizontally (Paragraph 3.B.), or the door mechanism (Paragraph 3.D.), before the door can be closed.

(3) Adjust nut (2) on torque tube until setscrews (3) are within 1/4 inch (6.4 mm) (vertically) of center of doorstops (4).

NOTE: Stop screw strike points should be measured under pressure only. Strike points on upper stops, if measured in static ground, will not portray accurate dimensions (if measurement can only be taken in static ground use stops #5 and #6 for reference).

NOTE: The gap between the forward, aft, and bottom edges of the door and aircraft exterior skins shall be 7/32 (+5/32, -3/32) inch (5.557 (+3.967, -2.382) mm). The gap at the top edge shall be 1/8 ( $\pm 3/32$ ) inch (3.175 ( $\pm 2.382$ ) mm). Gaps shall be constant within 1/8 inch (3.175 mm) for any door side or corner.

(4) Check adjustment with door closed and locked.

(5) Secure adjustment nut (2) with lockpin (1). Safety lockpin with cotter pin.

#### B. Fore-and-aft (Horizontal) Adjustment

NOTE: The door lining must be removed to make the fore-and-aft adjustments. (PASSENGER FORWARD ENTRANCE DOOR LINING, SUBJECT 52-11-01, Page 201)

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 501.

(1) Check that door is adjusted vertically. (Paragraph 3.A.)

(2) Loosen bolts which attach torque tube fittings to door.

NOTE: Bolts are referred to in Figure 501 as (7), (8), (9), and (10).

(3) Close passenger door.

(4) Rotate torque tube fittings on bolts (7) until setscrews (3) are within 1/4-inch (6.4 mm) (horizontally) of center of doorstops (4).

NOTE: The gap (vertical or horizontal distance) between the door skin and the fuselage skin must be constant within 1/8-inch (3.2 mm) on any one side or corner of the door and any deviation from the constant gap must be adjusted out within 1/16-inch (1.6 mm) in not less than 15 inches (381 mm). The maximum allowable gap is 3/8 inch (9.5 mm).

(5) Tighten bolts (7) and (8).

NOTE: Make certain that serrated washer (5) at bolt (8) is seated.

(6) Check adjustment with door closed and locked. Readjust if required.

NOTE: It may be necessary to adjust the door mechanism before the door can be locked. (Paragraph 3.D.)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-11-00**

Page 502  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (7) Tighten bolts (9) and (10).
- (8) Adjust door to fair with fuselage. (Paragraph 3.C.)  
NOTE: If fairing adjustment is not required, adjust door mechanism. (Paragraph 3.D.)
- (9) Check door warning system. (PAGEBLOCK 52-70-03/201)

### C. Inboard and Outboard (Fairing) Adjustment

NOTE: Perform Paragraph 3.C.(1) through Paragraph 3.C.(14) only when setscrews are replaced or when a new door is installed.

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 501.

- (1) Remove sealant from doorjamb setscrew access holes on outside skin of doorjamb to gain access to setscrews (3).
- (2) Open passenger door.
- (3) Loosen locknut (6) on setscrews (3).
- (4) Adjust setscrews (3) so distance between inboard end of setscrews (3) and fuselage skin is 1/16 inch (1.6 mm) greater than distance between face of doorstops (4) and door skin.
- (5) Close and lock passenger door.
- (6) Adjust door mechanism. (Paragraph 3.D.)

NOTE: The door mechanism must be adjusted to make the final fairing adjustment.

NOTE: Fairing adjustment of Paragraph 3.D.(3)(c) is in unpressurized condition. Fairing adjustment of Paragraph 3.C.(8) is in pressurized condition.

- (7) Pressurize fuselage until pressure differential of 3 to 4 psi (20 to 28 kPa) is obtained. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)

**CAUTION:** DO NOT ATTEMPT TO FORCE DOOR INWARD WITH SETSCREWS (3) WHEN FUSELAGE IS PRESSURIZED.

- (8) Adjust setscrews (3) until door is faired within acceptable tolerances (Figure 501 (Sheet 2)). All setscrews (3) must contact doorstops (4) when fuselage is pressurized. Setscrews (3) should be recessed 1/16 to 1/4 inch (1.6 mm to 6.4 mm) below outer surface of fuselage skin when door fair adjustments are complete. Longer or shorter screws may be used to comply with this requirement.
- (9) Depressurize fuselage. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)
- (10) Open passenger door.
- (11) Hold setscrews (3) and torque locknuts (6) 95 in-lb (11 N·m) to 115 in-lb (13 N·m).

**CAUTION:** TO PREVENT BENDING OF SETSCREWS WHEN FUSELAGE IS PRESSURIZED, SETSCREWS MUST NOT PROTRUDE MORE THAN 3/16 INCH (4.8 MM) (MAXIMUM) THROUGH NUTS.

- (a) Check that setscrews (3) do not protrude more than 3/16 inch (4.8 mm) (maximum) from inboard surface of locknuts (6).
- (b) The end of the setscrew will be 1/16 - 1/4 inch inboard of fuselage exterior.
- (12) Tape face of all doorstops (4).
- (13) Close and lock door.
- (14) Pressurize fuselage until pressure differential of 3 to 4 psi (20 to 28 kPa) is obtained. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (15) Depressurize fuselage. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)
- (16) Open door and check that setscrews (3) contacted face of all doorstops (4), within 1/4 inch (6.4 mm) of center of doorstop face, when fuselage was pressurized. Setscrews should contact equally. Door should not flex to meet setscrews.
- (17) Remove tape from face of doorstops (4).
- (18) Seal setscrew access holes with aluminized sealant, AC-632, B2.
- (19) Check door operation. (PAGEBLOCK 52-11-00/601 Config 1)
- (20) Check door warning system. (PAGEBLOCK 52-70-03/201)

### D. Door Mechanism Adjustment

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 502.

NOTE: Adjustment of door rotating rod (4) and crank (3) affects door fair at the forward edge, door fore and aft placement in the opening, and handle overcenter placement as follows (with door closed):

- Door rotating rod (4)
- When lengthened, forward edge of door moves inboard toward hinge.
- When shortened, forward edge of door moves outboard away from hinge.
- Crank (3)
- Crank is positioned on hinge shaft with split of inner yoke on 16( $\pm$ 1) serrations, counting clockwise from flat of hinge shaft (looking down at top).
- When shortened, door rotation increases, and top of door is moved forward in opening. There is less engagement of bayonet and cam follower (10).
- When lengthened, door rotation decreases, and top of door is moved aft in the opening. There is more engagement of bayonet and cam follower (10).
- When rotated counterclockwise, increases clearance of door and lining with aft doorjamb.
- When rotated clockwise, increases clearance between bayonet and doorjamb.
- When lowered on hinge shaft, overcenter travel of door handle is increased.
- When raised on hinge shaft, overcenter travel of door handle is decreased.

NOTE: Whenever possible, try to position bellcrank as low as possible on hinge shaft. Due to external amount of torque on bellcrank during operation, it may loosen and drop anyway over time. This will cause door to be severely out of rig.

- (1) Disconnect seal mechanism actuating link from seal mechanism shaft.
- (2) Disconnect door handle shaft lock adjustment rod (1) from lock crank (2).
- (3) Perform following steps as one adjustment.

NOTE: It will be necessary to repeat all or part of these steps several times, and in various sequences to obtain the required results.

- (a) Adjust rotation rod crank (3) to its shortest position.

NOTE: This adjustment controls the amount of rotation of the hinge by the door handle. If rotation is insufficient increase length of crank, one serration at a time, until correct rotation is obtained. Sufficient rotation can be achieved by shortening door rotation rod or rotating bellcrank. It is suggested that the bellcrank be kept at shortest length possible. A shorter bellcrank will ensure that the door will remain tight against the hinge after the rigging is complete.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-11-00

Page 504  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (b) Adjust door rotation rod (4) so maximum hand load required to lock and unlock door with inner handle is 40 pounds (18 kg) (60 pounds (27 kg) for door with new seal). On rod (4) adjustment barrel, check that exposed threads at each end of barrel are equal in length within 1/16 inch (1.6 mm). Rod end on adjustment barrel must be cocked counterclockwise (as viewed from rod end threads) such that door rod end is held perpendicular (and rotation rod does not droop) when jamnuts are tightened. Make sure 0.015 - 0.045 in. (0.381 - 1.14 mm) clearance exists between the door rotation rod and the door handle shaft when door is closed.

NOTE: Hand load on door handle is determined by using torque adapter P/N 4916787-1 and a standard torque wrench. (48 foot-pounds (576 inch-pounds) (65.0 N·m) torque is equivalent to 40 pounds (18 kg) hand load, and 70 foot-pounds (840 inch-pounds) (94.8 N·m) torque is equivalent to 60 pounds (27 kg) hand load measured 12 inches (30.48 mm) from the center of the handle hub.)

NOTE: For computation of indicated torque for a torque wrench using an adapter, refer to BOLT TORQUE DATA - MAINTENANCE PRACTICES, PAGEBLOCK 20-30-01/201.

NOTE: A new door's handle shaft link can be adjusted to achieve proper centering of the external door handle in the handle cutout. This adjustment must be accomplished before the door rotation rod is rigged to achieve 0.015 - 0.045 in. (0.381 - 1.14 mm).

- (c) Check that static fair of door (aircraft depressurized) is within following dimensions (maximum mismatch, excluding external doublers, if installed):
- 1) Forward side--area of interlock mechanism, -1/4 inch (-6.4 mm).  
Area of door warning switch, -3/8 inch (-9.5 mm).
  - 2) Aft side-----area of bayonet, -3/4 inch (-19.05 mm) measured at left line of fuselage skin (excluding external doubler).
  - 3) Top Side-----total area, -9/16 inch (-14.3 mm).
  - 4) Bottom side--total area, -3/8 inch (-9.5 mm).

NOTE: Mismatch is defined as that amount the door is inboard (-) or outboard (+) of flush (faired) condition.

- (d) Adjust bayonet rod (6) until cam followers (7) on bayonet are on flat section of cams (8) when door handle is in closed position, and cam followers (7) seat freely in detent of aft end of cams (8) when door handle is in open position. Bayonet rod should be adjusted as short as possible without binding in detent at aft end of cams. Bayonet should snap back freely when engaged and disengaged on bayonet fitting at aft side of doorjamb.
- (e) Loosen bolts (24) attaching bayonet fitting serrated adjustment plate (25) on aft doorjamb. Adjust plate on doorjamb to center cam follower (10) in bayonet vertically, when door is in closed position, and horizontally so it will hold door seal in contact with seal depressor in unpressurized condition. Tighten bolts. Adjust bayonet fitting horizontally to achieve aft static fair dimension of -0.250 in. (6.35 mm) at bayonet.
- (4) Connect door handle shaft lock adjustment rod (1) to lock crank (2).
- (5) Adjust lock adjustment rod (1), lock crank eyebolt (11), and lockshaft crank (2) so cam follower (13) on lockshaft crank (12) engages detent in door handle shaft (5) when door handle is in door open position.
- (6) Adjust stop in well of outer handle until handle fairs with door skin.
- (7) Remove seal adjustment link (14) from door.

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (8) Adjust seal adjustment link (14) to 4 5/8( $\pm 1/32$ ) inches (117.5( $\pm 0.79$ ) mm) between center of bolt holes with bearing centered in end fittings.

NOTE: Link must be removed to center bearing in the end fittings.

- (9) Connect seal adjustment link (14) to seal mechanism shaft (15) and crank (16).
- (10) Disconnect door rotation shaft (4) from crank on hinge.
- (11) With door handle in door closed position and cam follower (17) on seal mechanism shaft (15) engaged in detent in door handle shaft (5), adjust upper hinged seal as follows:

CAUTION: IF BOLT (19) IS OVERCENTER TOWARD SEAL EXTEND POSITION, EXCESSIVE PRESSURE WILL BE APPLIED TO SEAL CONTROL ROD WHEN DOOR IS CLOSED AND LOCKED.

- (a) Adjust seal control rod (18) to align center of bolt (19) at end of seal actuating link (20) with center of seal control shaft (21) and center of bolt (22) at end of link (23). Center of bolt (19) may be slightly overcenter toward seal retract position.
- (12) Repeat Paragraph 3.D.(11) for lower hinged seal.
- (13) Check that threads of seal control rods (18) cover witness holes in turnbarrels, then secure turnbarrels with clips.
- (14) Connect door rotation rod (4) to door hinge.
- (15) Check maximum hand load, if not within required limits check hinged seal adjustments and door rotation rod adjustment.
- (16) Adjust hold-open hook. (Paragraph 3.E.)
- (17) Adjust forward stairwell door interlock. (Paragraph 3.F.)
- (18) Adjust door snubber. (Paragraph 3.G.)
- (19) Check door operation. (PAGEBLOCK 52-11-00/501)
- (20) Check door warning system. (PAGEBLOCK 52-70-03/201)
- (21) Install door lining. (PASSENGER FORWARD ENTRANCE DOOR LINING, SUBJECT 52-11-01, page 201)

### E. Hold-Open Hook Adjustment

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 503.

- (1) Close and lock passenger door.
- (2) Adjust hold-open hook (1) with adjustment tube (2) until hook is flush with door skin.
  - (a) Loosen jamnut (5) adjacent to clevis, remove bolt (6) from opposite end of straight section of tube, and rotate tube. Reinstall bolt (6).
- (3) Open door and engage hold-open hook with fitting in fuselage. Check that inclined surface of hold-open latch hook will contact pin in fuselage recess aft of center, and that latch hook clears upper and lower sides of fuselage recess cutout by 3/32-inch (2.4 mm) minimum.
- (4) Hold release handle (3) bottomed on door liner, or liner simulated thickness.
- (5) Adjust hold-open hook release handle rod (4) until hook is released.
- (6) Check operation of release several times to make certain that hook is released when handle is bottomed. Readjust release handle rod (4) if required.
- (7) Tighten jamnuts and secure bolts.

NOTE: The functional requirements of the hold-open mechanism take precedence over the requirement for the hook to be flush with the exterior skin when the door is closed.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-11-00

Page 506  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### F. Interlock Adjustment

**NOTE:** Numbers in parentheses ( ) in the following text correspond to callouts in Figure 504.

- (1) Check that forward stairwell door is adjusted. (PAGEBLOCK 52-62-01/501)
- (2) Close and latch stairwell door.
- (3) Position the crank as shown. (Figure 505, View F)
- (4) Adjust the stop bolt (9) to obtain dimensions as shown. (Figure 505, View F)
- (5) Adjust pushrod (11) to position stop (1)  $3/16(\pm 1/32)$  inch (4.8 ( $\pm 0.79$ ))mm from cam (6) on door handle.
- (6) Position crank (11) as shown. (Figure 505, View F)
- (7) Check that pushrod (12) measures  $12\ 7/8(\pm 1/16)$  inches (327 ( $\pm 1.6$ ))mm between center of attach bolts. Adjust as required.
- (8) Check that stop (1) will clear cam (6) on door handle shaft when handle is rotated to closed position.

**NOTE:** It might be necessary to adjust pushrod (11) to obtain clearance.

**WARNING:** FORWARD AND AFT CLEARANCE REQUIREMENTS ON INTERLOCK ARM ARE CRITICAL. THE INCORRECT CLEARANCES CAN CAUSE THE AIRSTAIR DOOR TO OPEN DURING FLIGHT.

- (9) Check the forward and aft face clearance of the interlock arm (2) as you close the door as follows: (Figure 504)
  - (a) Make sure that the exterior handle for the airstair door is fully latched and flush with the fuselage.
  - (b) With the interior door handle, slowly close the passenger door and make sure that the interlock arm (2) clearances are as follows:
    - 1) The aft face of the interlock arm (2) is 0.030 in. (0.76 mm) to 0.045 in. (1.14 mm) away from the lockpin retainer (4) as the door is closing.
    - 2) The forward face of the interlock arm (2) is 0.030 in. (0.76 mm) to 0.045 in. (1.14 mm) away from the interlock pin (3) with the door closed.
- (10) If adjustment is required on the interlock arm (2), proceed as follows:
  - (a) Adjust interlock lockpin (3) to obtain 0.030 to 0.045 inch (0.76 to 1.14 mm) clearance between lockpin (3) and interlock arm (2). (PAGEBLOCK 52-62-01/501)

**NOTE:** The doorjamb lining must be removed to adjust the lockpin.
  - (b) Add or remove washers (5) between lockpin retainer (4) and doorjamb to obtain proper clearance between interlock arm (2) and lockpin retainer (4).

**NOTE:** If adjustment of the lockpin retainer (4) is necessary, make sure that there is sufficient clearance between the retainer and the door structure with the door closed.
  - (c) If proper clearance cannot be obtained in Paragraph 3.F.(10)(a) and Paragraph 3.F.(10)(b), bend interlock arm (2) slightly to obtain proper clearance. (Figure 505, View D)

**NOTE:** Arm may be bent forward or aft a maximum of 0.12 inch (3.18 mm) from vertical. Total maximum deflection forward of aft must not exceed 0.25 inch (6.35 mm).

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (11) Adjust eccentric bumper (8) so when passenger door is closed and locked, end of interlock arm (2) is 9/32( $\pm$ 1/32) inch (7.14 ( $\pm$ 0.79) mm) from bottoming in lockpin retainer (4).  
**NOTE:** It might be necessary to adjust stop bolt (9) to permit interlock arm rotation.
- (12) With passenger door closed and locked and interlock arm (2) contacting bumper (8), adjust stopscrew (9) to clear cam (10) by 0.004 to 0.006 inch (0.10 to 0.15 mm).
- (13) With the interlock arm (2) fully rotated inboard and held, the lock drive cam (10) and the interlock CAM should have no less than 0.020 inch face contact. (Figure 505, View G)
- (14) Open passenger door.
- (15) Unlatch stairwell door.
- (16) Close passenger door, rotating handle to locked position. Check that stop (1) prevents handle from being rotated to locked position.
- (17) Latch stairwell door.
- (18) Rotate passenger door handle to locked position, and check that stop (1) clears cam (6) on door handle shaft by 3/16 ( $\pm$ 1/32) inch (4.8( $\pm$ 0.79) mm).
- (19) Tighten all jamnuts and secure pushrod bolts.
- (20) Install doorjamb lining.
- (21) Install door lining. (PASSENGER FORWARD ENTRANCE DOOR LINING, SUBJECT 52-11-01, page 201)

### G. Snubber Adjustment

- (1) Disconnect snubber from crank on torque tube. Completely retract snubber piston.
- (2) With bolt hole in crank on doorjamb torque tube at minimum distance from snubber attach fitting, adjust end fitting on snubber until bolt hole in end fitting is aligned with bolt hole in crank. Turn fitting in one additional turn and connect fitting to crank.
- (3) Tighten jamnut on end fitting.

### H. Lower Door Bumper Block Adjustment.

- (1) Open door perpendicular to fuselage.
- (2) Measure and record gap between door bumper angle and hinge.
- (3) Trip bayonet on aft edge of door and pivot door aft on hinge.
- (4) Add shims to bumper block to make up noted dimension.
- (5) Swing door forward on hinge until bayonet trips.
- (6) Add shims to bumper block until bayonet will no longer trip.

**CAUTION:** DOOR HINGE SHOULD FIT TIGHTLY AGAINST BUMPER BLOCK. DO NOT MAKE TOO TIGHT, OR DOOR PAN MAY CRACK.

- (7) Adjust shims using 0.062 inch (1.58 mm) (standard) or 0.020 inch (0.51 mm) (locally manufactured) shims until bayonet will just trip when door is swung forward on hinge.
- (8) Close door.

### I. Door Hinge Bumper Pad Adjustment

- (1) Make certain that door bumper block has been properly adjusted. (Paragraph 3.H.)
- (2) Open door and latch hold-open hook.
- (3) Add or subtract shims on hinge bumper pad so it is not possible to dislodge hold-open hook from fuselage by rocking door fore and aft on its hinges.

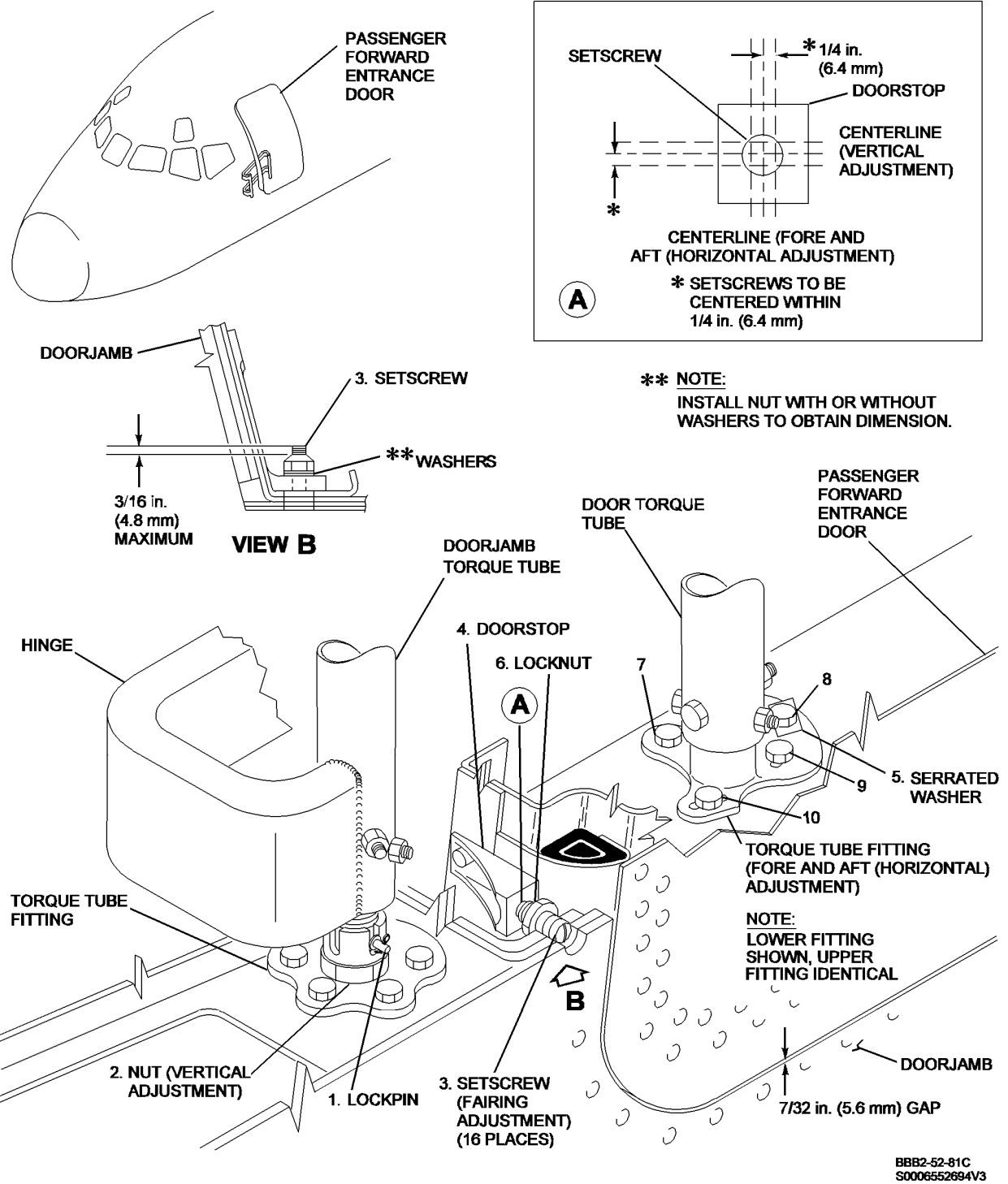
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**52-11-00**

Page 508  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



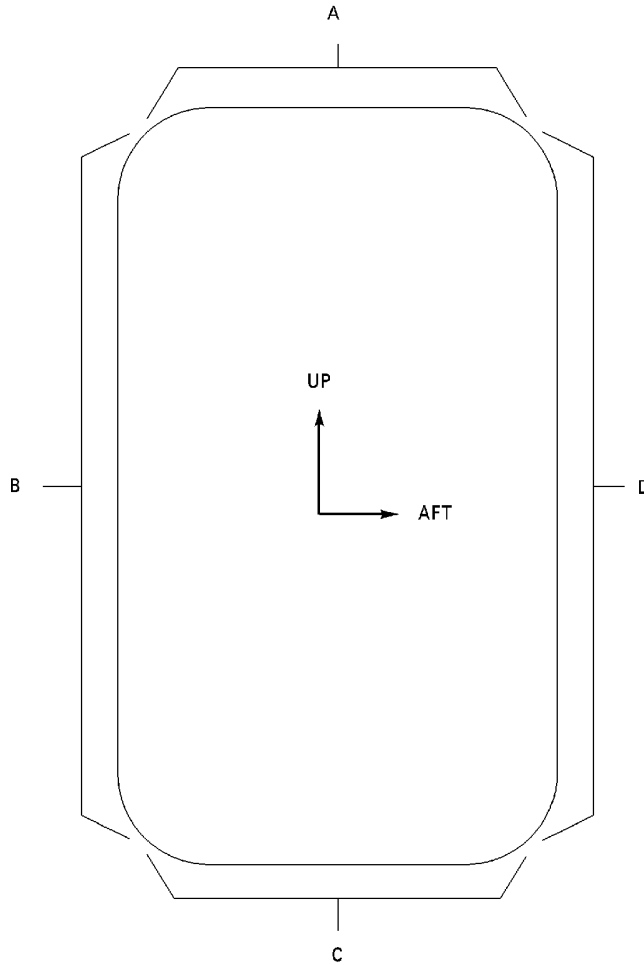
Passenger Forward Entrance Door -- Adjustment  
Figure 501/52-11-00-990-808 (Sheet 1 of 2)

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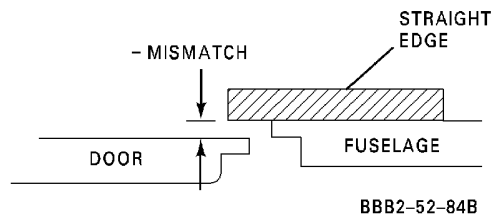
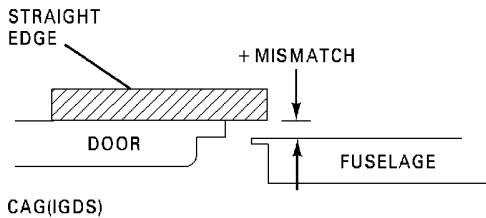
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52-11-00

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



LOCATION	MAXIMUM ACCEPTABLE MISMATCH (FUSELAGE PRESSURIZED)
A	+ 0.120 INCH (3.05 MM) -0.035 INCH (0.89 MM) (EXCLUDES DOUBLER, IF INSTALLED)
B AND D	± 0.035 INCH (0.89 MM)
C	+ 0.032 INCH (0.81 MM) -0.110 INCH (2.79 MM) (EXCLUDES SCUFF PLATE, IF INSTALLED)



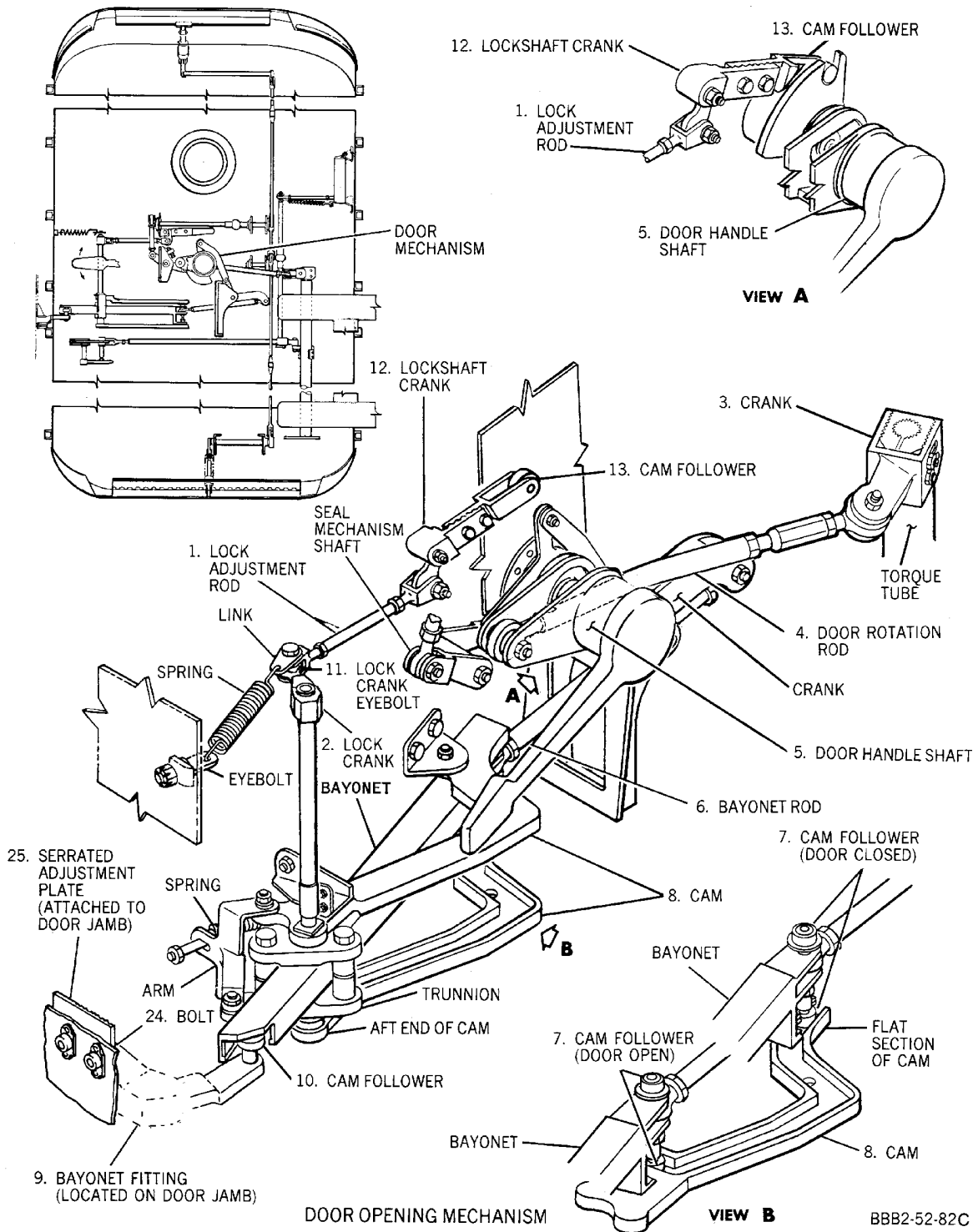
**Passenger Forward Entrance Door -- Adjustment  
Figure 501/52-11-00-990-808 (Sheet 2 of 2)**

EFFECTIVITY  
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TP-80MM-WJE

**52-11-00**

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Mechanism -- Adjustment  
Figure 502/52-11-00-990-809 (Sheet 1 of 2)**

EFFECTIVITY  
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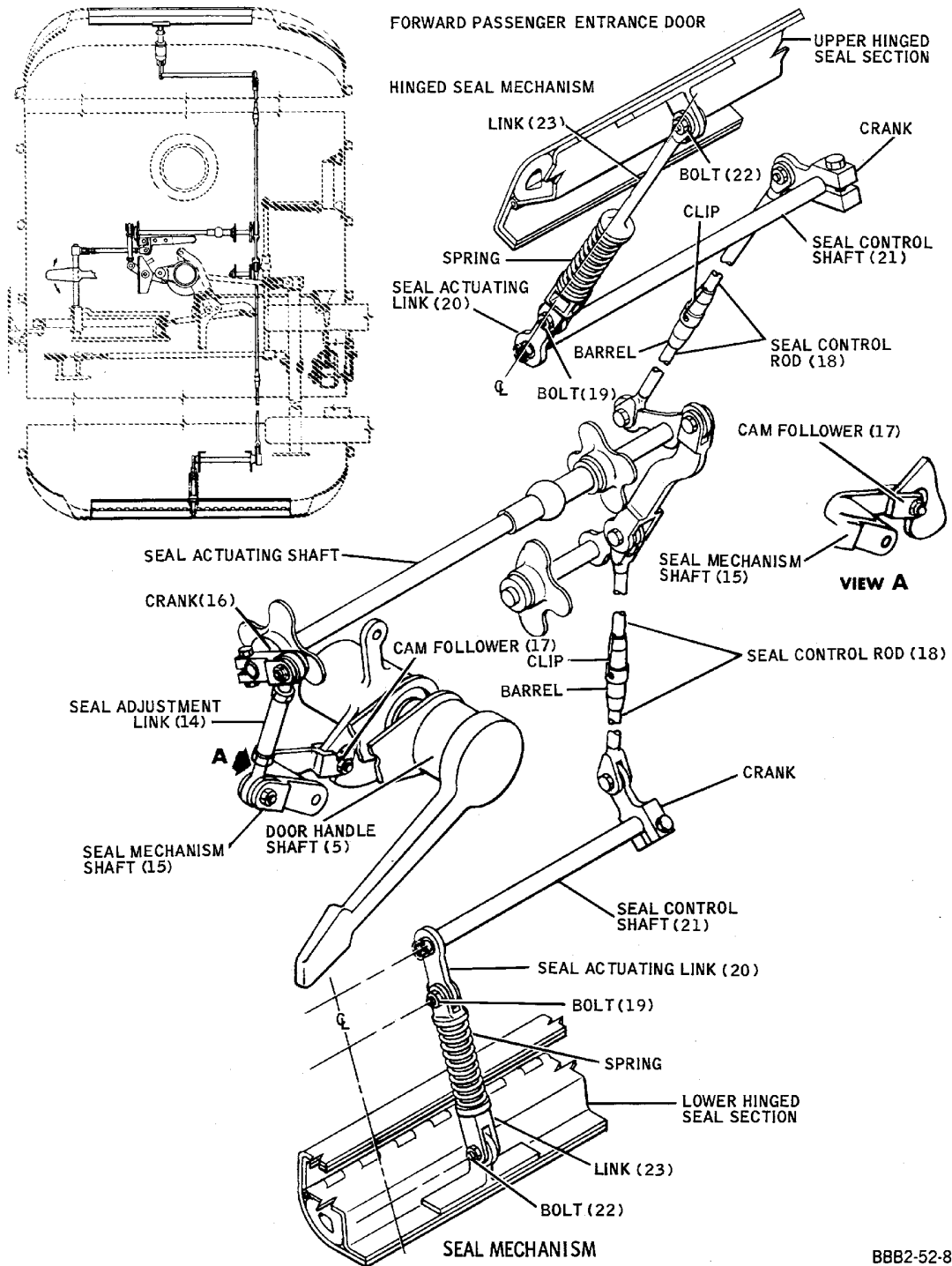
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TP-80MM-WJE

Page 511  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Forward Entrance Door Mechanism -- Adjustment  
Figure 502/52-11-00-990-809 (Sheet 2 of 2)**

EFFECTIVITY  
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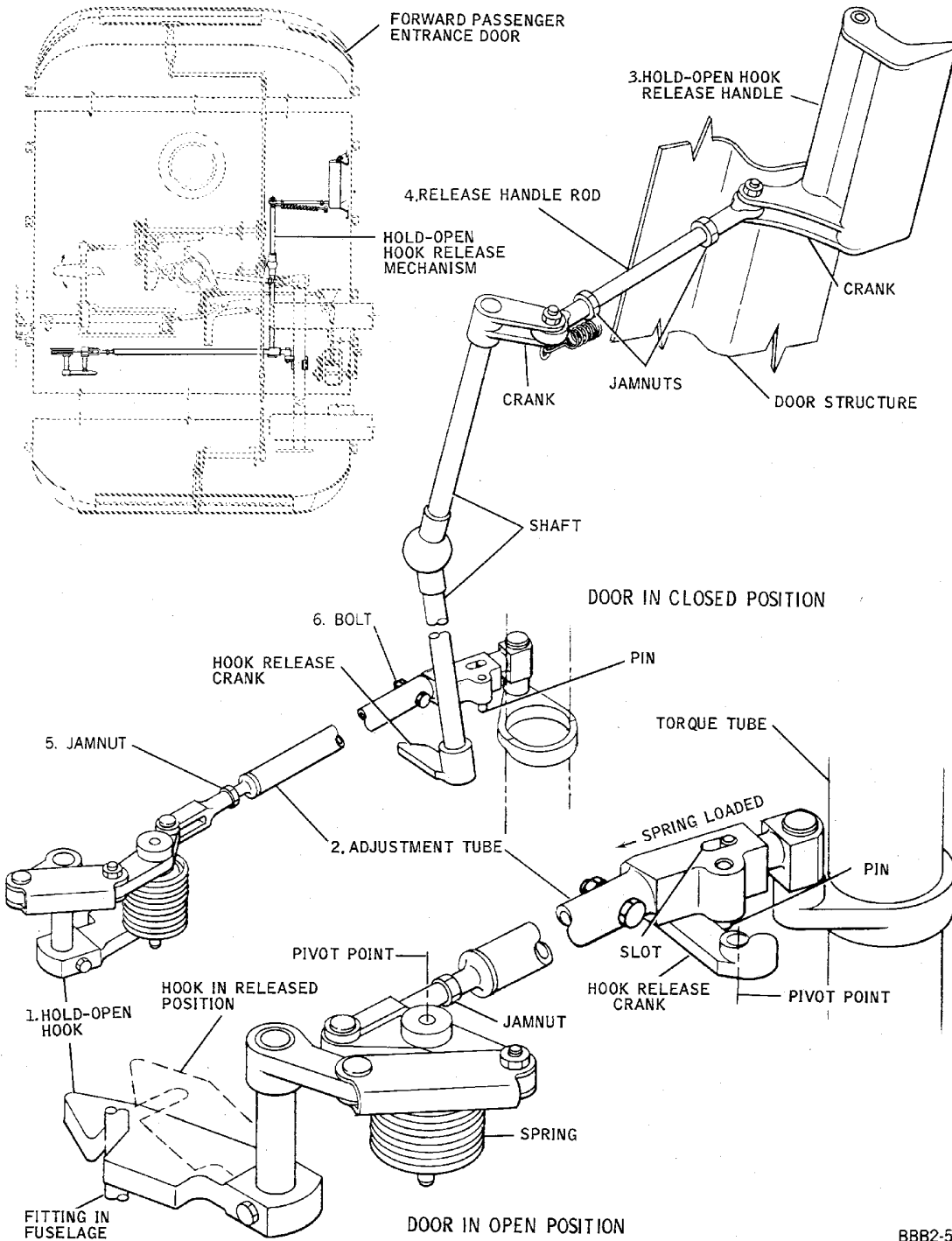
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TP-80MM-WJE

Page 512  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Forward Entrance Door Hold-Open Hook -- Adjustment  
Figure 503/52-11-00-990-810**

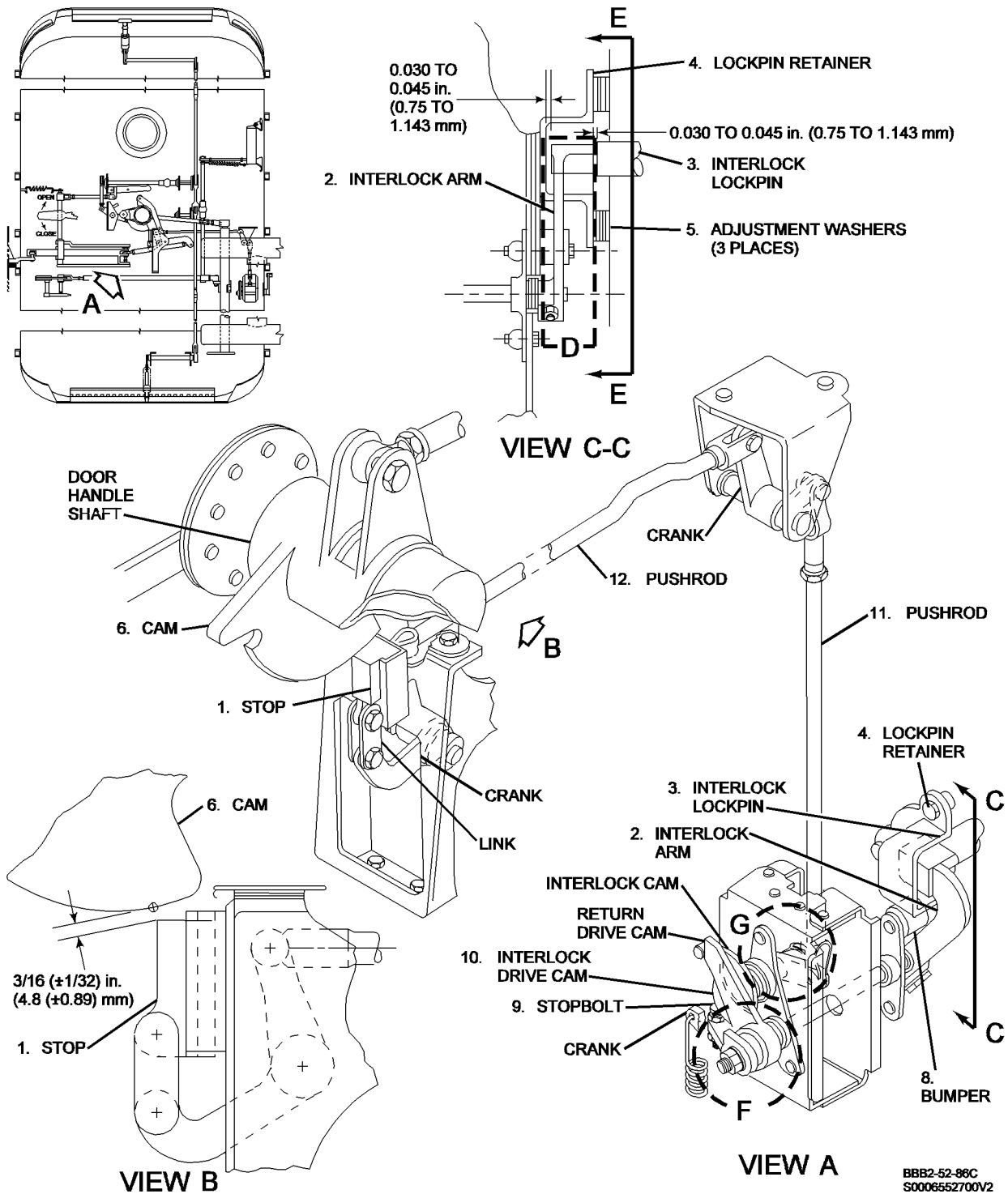
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**52-11-00**

TP-80MM-WJE

Page 513  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Passenger Forward Entrance Door Interlock -- Adjustment  
Figure 504/52-11-00-990-811

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TP-80MM-WJE

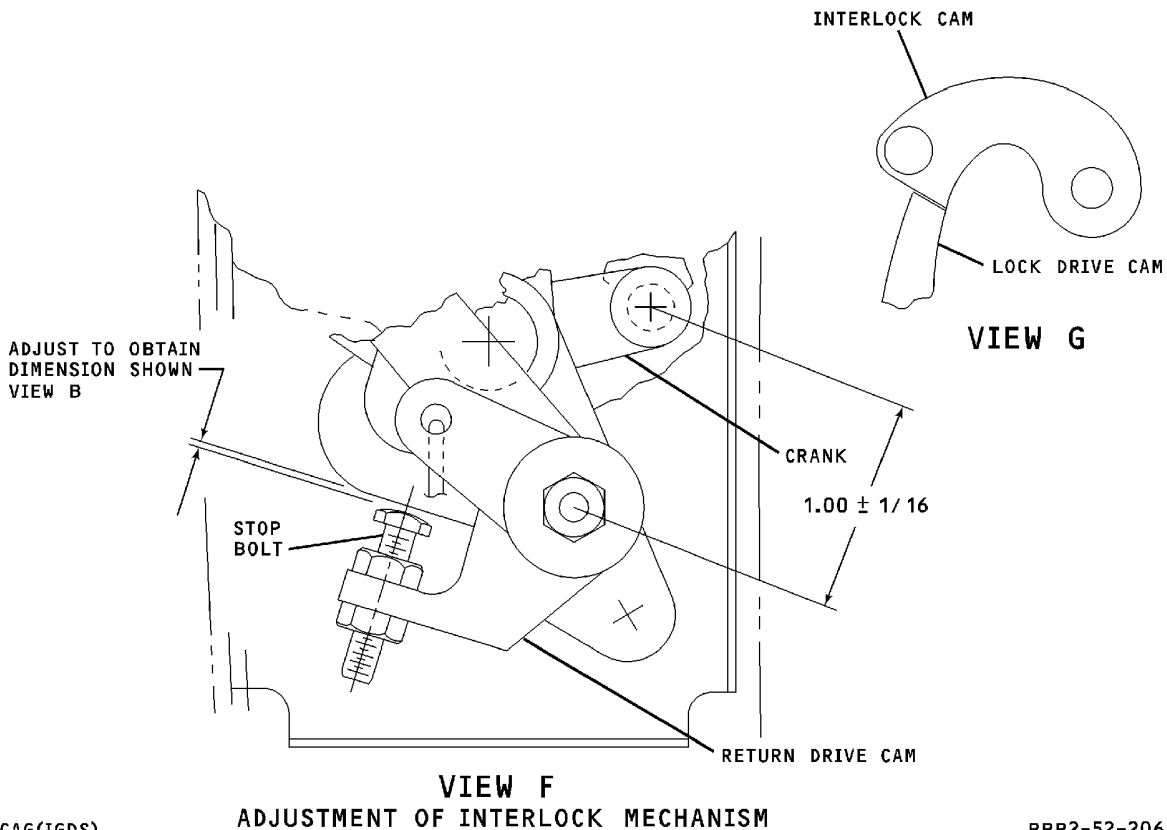
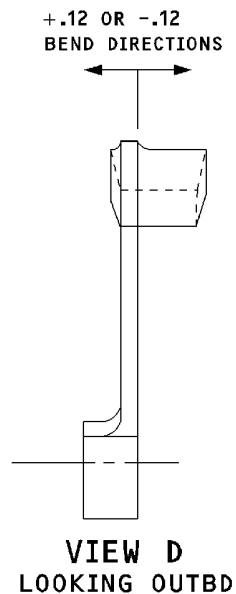
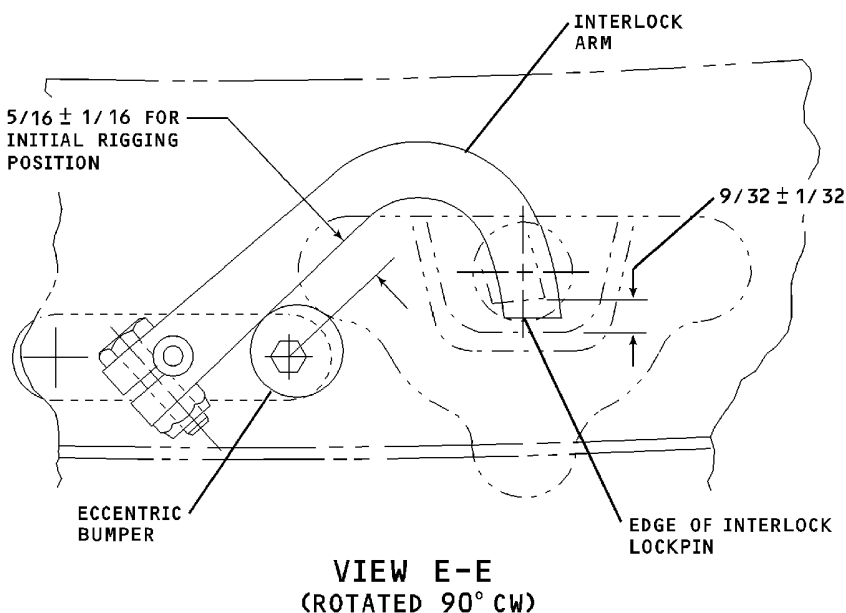
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52-11-00

Page 514  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Interlock -- Adjustment  
Figure 505/52-11-00-990-812**

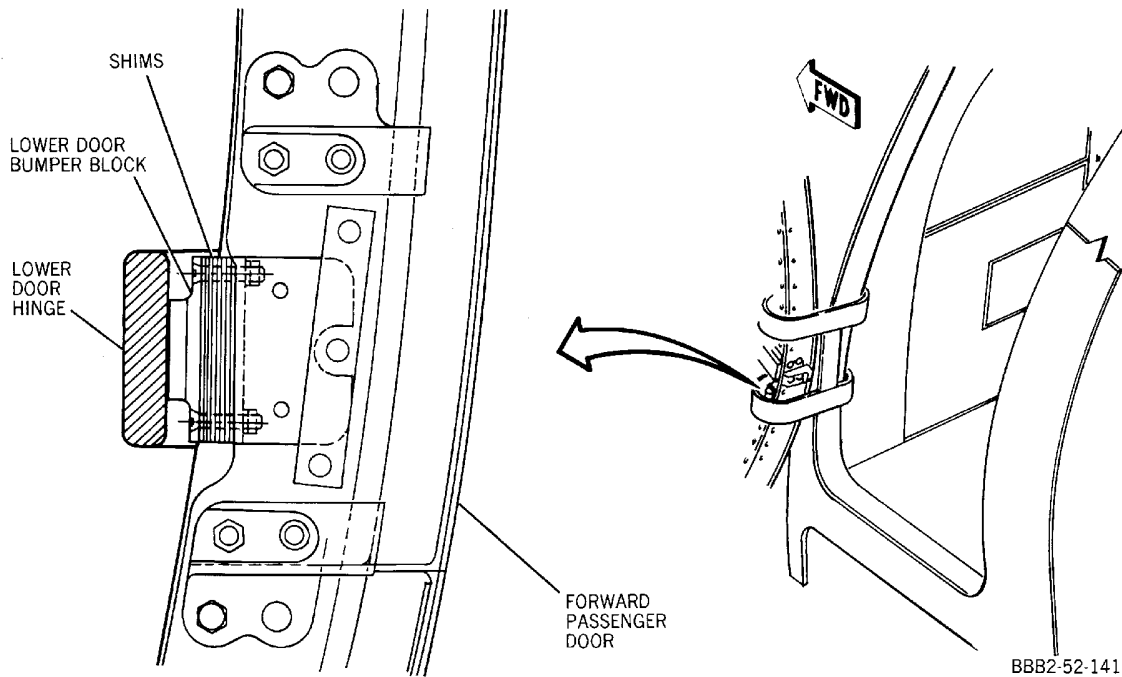
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**52-11-00**

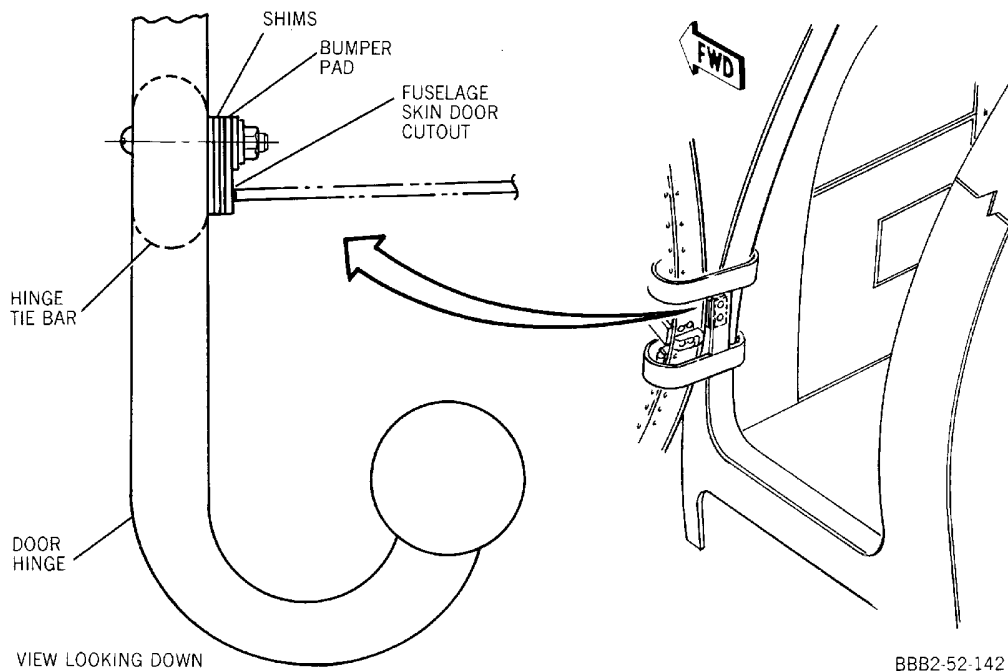
Page 515  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Lower Door Bumper Block - Adjustment  
Figure 506/52-11-00-990-813**



BBB2-52-142

**Door Hinge Bumper Pad - Adjustment  
Figure 507/52-11-00-990-814**

EFFECTIVITY  
WJE ALL

**52-11-00**

TP-80MM-WJE

Page 516  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST

### 1. General

A. This procedure contains MSG-3 task card data.

#### TASK 52-11-00-720-801

### 2. Functional Check of the Locking Device for the Passenger Forward Entrance Door Set Screws

NOTE: This procedure is a scheduled maintenance task.

#### A. References

Reference	Title
52-11-00 P/B 501	PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST

#### B. Tools/Equipment

Reference	Description
STD-1016	Wrench - Torque, 0 to 300 in-lbs (0 to 33.89 N·m)

#### C. Consumable Materials

NOTE: Equivalent replacements are permitted for the items that follow.

NOTE: It is possible that some materials in the Consumable Materials chart cannot be used for some or all of the necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Reference	Description	Specification
A60127	Sealant - Polysulfide, Aluminized	DMS 1819
B60104	Solvent - Sealant Remover	DPM 6410
G60085	Cloth - Low Lint	MIL-C-24671

#### D. Prepare for the Functional Check of the Locking Device for the Passenger Forward Entrance Door Set Screws

SUBTASK 52-11-00-010-001

(1) Open the passenger forward entrance door.

#### E. Functional Check of the Locking Device for the Passenger Forward Entrance Door Set Screws

SUBTASK 52-11-00-100-002

**WARNING**: SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-11-00

Config 1  
Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (1) If necessary, using a low lint cloth, G60085 moist with sealant remover solvent, B60104 remove the sealant from the set screw access holes on the doorjamb.

SUBTASK 52-11-00-720-002

- (2) Check torque on setscrew.
- (a) Loosen the locknuts on each of the setscrews.
  - (b) Apply approximately 2 in-lb (0.23 N-m) torque to each set screw.
    - 1) If no movement noticed, proceed to SUBTASK 52-11-00-720-004.
    - 2) If movement noticed, threads are worn-out and setscrew must be replaced and door adjusted. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501) Proceed to SUBTASK 52-11-00-942-001.

SUBTASK 52-11-00-720-004

- (3) Check torque on locknut.
- (a) Locknut should not be able to run down without resistance to flat portion of the door.
    - 1) If resistance is noticed, proceed to step (b).
    - 2) If no resistance is noticed, locknut has lost torquing ability and should be replaced.

**CAUTION:** TO PREVENT BENDING OF SETSCREWS WHEN FUSELAGE IS PRESSURIZED, SETSCREWS MUST NOT PROTRUDE MORE THAN 3/16 INCH (4.8 MM) MAXIMUM THROUGH NUTS.

- (b) With a torque wrench, STD-1016, check that the locknuts are torqued to 260 ±20 in-lb (29 ±3 N-m). End of setscrew will be 1/16 - 1/4 inch inboard of fuselage exterior.

SUBTASK 52-11-00-390-001

**WARNING:** POLYSULFIDE ALUMINIZED SEALANT IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN POLYSULFIDE ALUMINIZED SEALANT IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET POLYSULFIDE ALUMINIZED SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-11-00

Config 1  
Page 502  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(4) If removed, seal the setscrew access holes with aluminized polysulfide sealant, A60127.

### F. Job Close-up

SUBTASK 52-11-00-942-001

(1) Remove all the tools and equipment from the work area. Make sure the area is clean.

SUBTASK 52-11-00-410-001

(2) Close the passenger forward entrance door.

————— **END OF TASK** —————

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-11-00**

Config 1  
Page 503  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR - CHECK

#### 1. General

- A. This maintenance practice provides check instructions for the passenger forward entrance door.
- B. The applicable checks should only be performed when the door is reinstalled, a new seal is installed on the door, or the door or door mechanism is adjusted. The entire check should be performed when a new door is installed.

NOTE: Normally only those functions affected by maintenance need be checked.

#### 2. Check Passenger Forward Entrance Door

- A. Check Door

**Table 601**

Operation	Result	Correction	
<u>NOTE</u> : If the result in the Result column is not obtained, refer to the Correction column for corrective action.			
(1)	Close and lock door.	Door faired with fuselage skin when passenger compartment is pressurized.	Adjust doorstop screws. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
		Gaps between opposite edges of door skin and fuselage skin do not exceed 3/8 inch (9.5 mm).	Adjust door hinges. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
		Cam follower on doorjamb is centered on bayonet.	Adjust bayonet fitting on door jamb. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
		Stopscrews on doorjamb centered within 1/4 inch (6.4 mm) on doorstops.	Adjust door. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
<u>NOTE</u> : The gap between the door skin and the fuselage skin must be constant within 1/8 inch (3.1 mm) on any one side or corner of the door and any deviation from the constant gap must be faired out within 1/16 inch (1.6 mm) in not less than 15 inches (381 mm).			
<u>NOTE</u> : When passenger compartment is pressurized, bayonet should not pick up door stop loads.			
(2)	Lock and unlock door several times.	Maximum force applied to door handle to unlock door mechanism from over center position is 40 pounds (18 kg).	Adjust door mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)
(3)	Open and close door several times.	Upper and lower seals retract to clear doorjamb structure when door is opened and closed. Seal contacts seal depressor when door is closed and locked.	Adjust seal mechanism. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-11-00

Config 1  
Page 601  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 601 (Continued)**

	Operation	Result	Correction
		<p>Hold-open hook engages fitting in fuselage when door is full open. Hook disengages when release handle is actuated. Hook retracts flush with door skin when door is closed and locked.</p> <p>Resistance to sudden movement of door toward open or close position.</p>	<p>Adjust hold-open hook. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)</p> <p>Adjust snubber. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)</p>
<p><b>CAUTION:</b> WHEN STAIRWELL DOOR IS UNLATCHED, POWER IS APPLIED TO STAIRWAY OPERATING CIRCUIT.</p>			
(4)	Open passenger door and unlatch forward stairwell door.	Passenger door cannot be locked while stairwell door is unlatched.	<p>Adjust interlock. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)</p> <p>Adjust stairwell door interlock linkage. (PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST, PAGEBLOCK 52-61-01/501 Config 1 or PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST, PAGEBLOCK 52-61-01/501 Config 2)</p>
(5)	Close and lock passenger door, and latch forward stair well door.	Check that stairwell door cannot be unlatched.	<p>Adjust interlock. (PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501)</p> <p>Adjust stairwell door interlock linkage. (PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST, PAGEBLOCK 52-61-01/501 Config 1 or PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST, PAGEBLOCK 52-61-01/501 Config 2)</p>

EFFECTIVITY  
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TP-80MM-WJE

**52-11-00**

Config 1  
Page 602  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR LINING - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger forward entrance door lining center, upper, and lower panels. (Figure 201)
- B. The door lining is divided into three parts to permit access to various parts of the door mechanisms and door structure for maintenance without removing all the lining.
- C. The center panel of the lining contains the window and covers the main components of the door actuating mechanism. The panel may be removed without opening the door.
- D. The upper panel covers the upper seal linkage, hold-open hook release handle linkage, bayonet, and the upper section of the hinge.
- E. The lower panel covers the lower seal linkage, hold-open hook mechanism, interlock linkage and cams, and the lower section of the hinge.
- F. The evacuation slide compartment is removed with the lower panel.

#### 2. Removal/Installation Passenger Forward Entrance Door Lining

- A. Remove Door Lining Center Panel
  - (1) Remove pin which attaches door handle to door mechanism shaft, and remove handle.
  - (2) Remove attach screws located along lower edge of panel.
  - (3) Push panel upward to disengage dowel at upper edge of panel and pull away from door.
- B. Install Door Lining Center Panel
  - (1) Engage dowel at upper end of center panel with slot in upper panel and push center panel downward to lock upper end of panel in place.
  - (2) Install attach screws along lower edge of panel.
  - (3) Position door handle on door mechanism shaft and install door handle pin.
- C. Remove Door Lining Upper Panel
  - (1) Open door.
  - (2) Remove center panel. (Paragraph 2.A.)
  - (3) Remove panel attach screws along edge of center panel opening.
  - (4) Remove screws in assist handle recess, and remove handle.
  - (5) Remove screws in hold-open hook release handle cup, and remove cup.
  - (6) Remove screws at upper section of door hinge.
  - (7) Remove attach screws along outer edge of panel, and pull panel away from door.
- D. Install Door Lining Upper Panel
  - (1) Position upper panel on door and install attach screws along outer edge of panel.
  - (2) Install attach screws along edge of center panel opening.
  - (3) Install attach screws at upper hinge section.
  - (4) Position hold-open hook release handle cup on panel and install attach screws.
  - (5) Position assist handle on panel and install attach screws.
  - (6) Install center panel. (Paragraph 2.B.)
- E. Remove Door Lining Lower Panel
  - (1) Remove evacuation slide. (PAGEBLOCK 25-62-00/201)
  - (2) Remove evacuation slide compartment attach screws and remove compartment.

EFFECTIVITY  
WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862,  
868, 874, 884, 891

TP-80MM-WJE

**52-11-01**

Config 1  
Page 201  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (3) Open passenger door.
  - (4) Remove attach screws along outer edge of panel and around lower section of door hinge, and pull panel away from door.
- F. Install Door Lining Lower Panel
- (1) Open passenger door.
  - (2) Position lower panel on door and install attach screws along outer edge of panel and hinge section.
  - (3) Position evacuation slide compartment on door and install attach screws.
  - (4) Install evacuation slide. (PAGEBLOCK 25-62-00/201)

### EFFECTIVITY

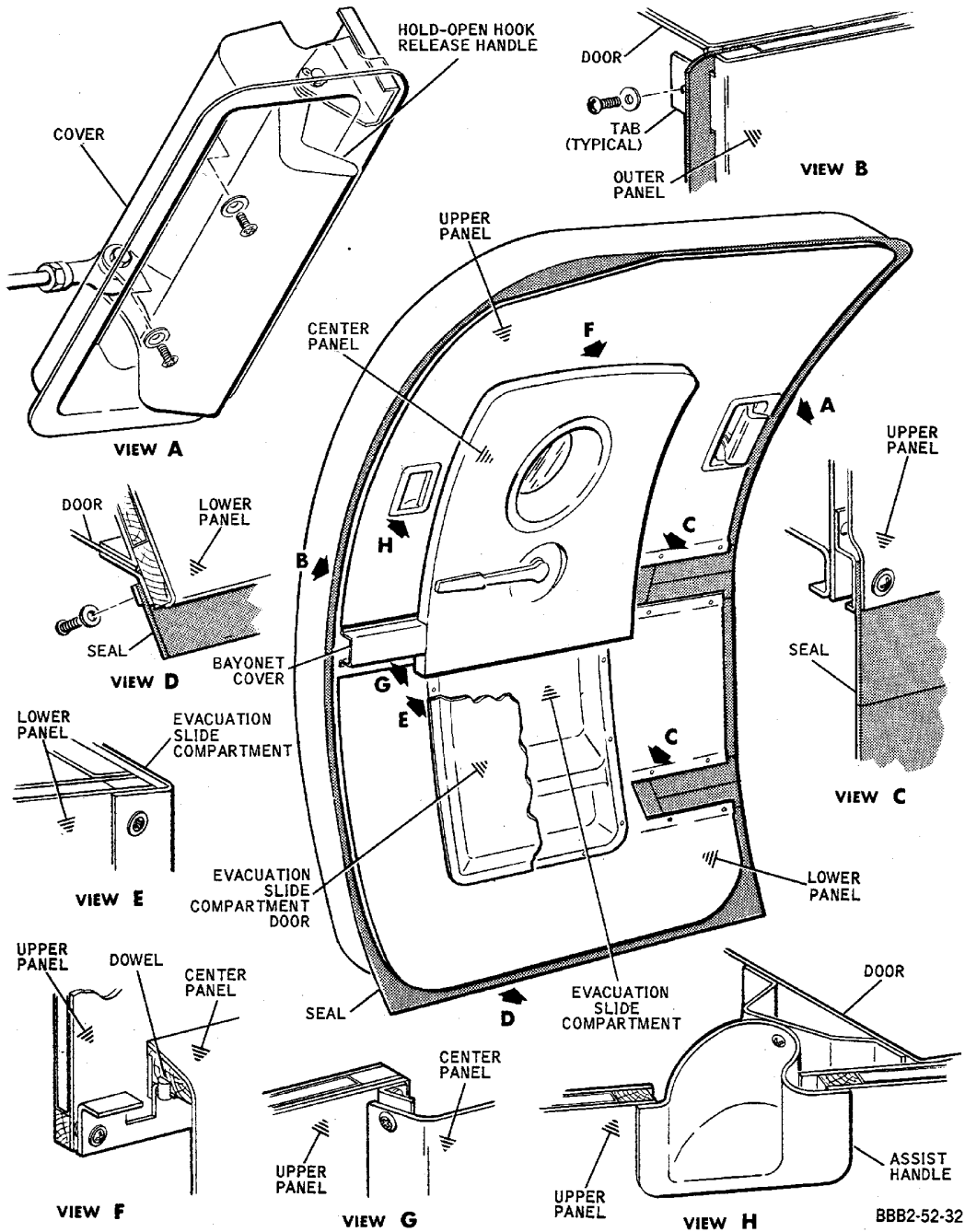
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868, 874, 884, 891

TP-80MM-WJE

# 52-11-01

Config 1  
Page 202  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Forward Entrance Door Lining -- Installation  
Figure 201/52-11-01-990-801**

EFFECTIVITY  
WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862,  
868, 874, 884, 891

TP-80MM-WJE

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**52-11-01**

Config 1  
Page 203  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR LINING - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger forward entrance door lining. (Figure 201)
- B. The door lining is a single piece with a hinged cover for the evacuation slide compartment.

#### 2. Removal/Installation Passenger Forward Entrance Door Lining

##### A. Remove Door Lining

- (1) Remove evacuation slide. (PAGEBLOCK 25-62-00/201)
- (2) Open door.
- (3) Remove pin attaching door handle to door mechanism shaft, and remove handle.
- (4) Remove screws in assist handle recess, and remove handle.
- (5) Remove screws in hold-open hook release handle cup, and remove cup.
- (6) Remove attach screws at upper section of door hinge.
- (7) Remove attach screws at lower section of door hinge.
- (8) Remove attach screws in evacuation slide compartment
- (9) Remove attach screws along outer edge of lining, and pull lining away from door.

##### B. Install Door Lining

- (1) Position liner on door and install attach screws along outer edge of panel.
- (2) Install attach screws at upper hinge section.
- (3) Install attach screws at lower hinge section.
- (4) Install attach screws in evacuation slide compartment.
- (5) Position hold-open hook release handle cup on panel and install screws.
- (6) Position assist handle on panel and install screws.
- (7) Position door handle on door mechanism shaft and install door handle pin.
- (8) Install evacuation slide. (PAGEBLOCK 25-62-00/201)

#### EFFECTIVITY

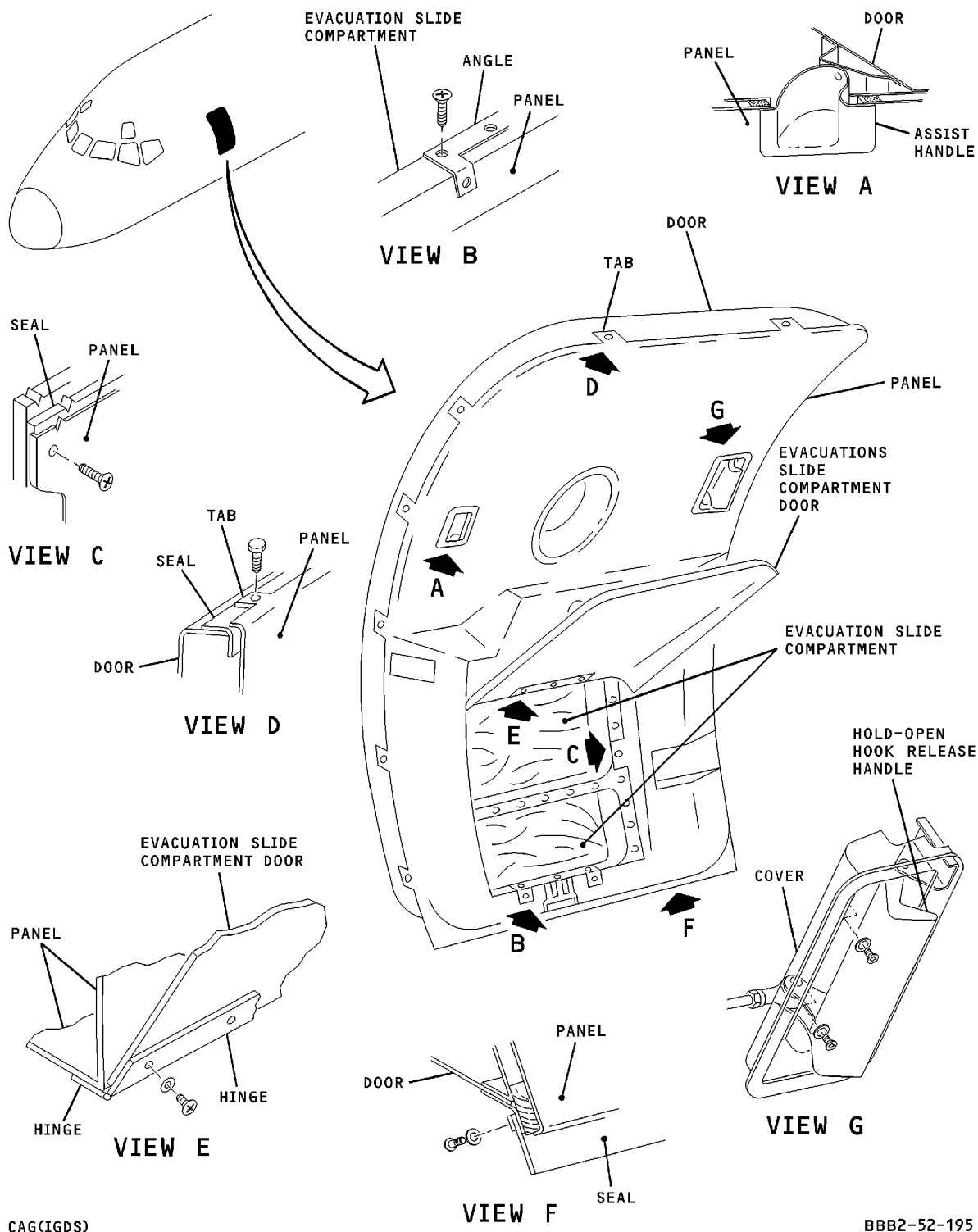
WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421,  
423, 863-866, 869, 871, 872, 875-881, 883, 886, 887,  
892, 893

TP-80MM-WJE

# 52-11-01

Config 2  
Page 201  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Forward Entrance Door Lining -- Installation**  
**Figure 201/52-11-01-990-803**

**EFFECTIVITY**

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

TP-80MM-WJE

**52-11-01**

Config 2  
Page 202  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR SEAL - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger forward entrance door seal. (Figure 201)
- B. The passenger forward entrance door seal can be removed with the door installed. However, it can be difficult to install the seal without removing the door.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Punch, leather	Commercially available
Ice pick	Commercially available

#### 3. Removal/Installation Passenger Forward Entrance Door Seal

##### A. Remove Seal

- (1) Remove passenger forward entrance door. (PAGEBLOCK 52-11-00/401).

**CAUTION:** PLACE DOOR ON FELT PAD OR SIMILAR MATERIAL TO PROTECT FINISH ON OUTBOARD SIDE OF DOOR.

- (2) Position door on suitable support with inboard side up.
- (3) Remove outer retainers.  
NOTE: Retainers should be identified to facilitate installation.
- (4) Remove interlock arm. Note number of adjustment washers installed between arm and fitting.  
NOTE: The arm and shaft can be indexed by marking a line across the arm and shaft with paint or other suitable material to facilitate installation.
- (5) Remove interlock fitting.
- (6) Disconnect push-pull rods from cranks on upper and lower hinged seal sections.
- (7) Fold seal back and remove sponge rubber filler.
- (8) Remove inner retainers.
- (9) Remove screws attaching hinge of upper and lower hinged seal sections to door and remove sections.
- (10) Pull seal away from door.

##### B. Install Seal

- (1) Check that door frame area where seal is to be installed is clean and free of chips and burrs, that may cause wear or damage to seal.
- (2) Check seal retainers for nicks and burrs that may cause wear or damage to seal.

NOTE: When new seal retainers are to be installed, check that holes in retainers align with nutplates in door, and that retainers are flush with door frame.

EFFECTIVITY  
WJE ALL

# 52-11-02

TP-80MM-WJE

Page 201  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (3) Place seal in position on door frame.  
NOTE: The seal may be clamped at the corners to hold it in place.  
NOTE: Position seal so the two splices (identified by cross stitching) approximately 17 inches (43.2 cm) apart are at top of door and two splices approximately 21 inches (53.3 cm) apart are at bottom of door.
- (4) Lay inner retainers in place along aft edge of door.
- (5) Starting with center retainer, locate nutplates at upper and lower ends of retainer, and pin retainer in place.
- (6) Pin retainer in third hole from each end.  
NOTE: Ice pick or similar tool may be used to locate nut-plates and pin retainers in place.
- (7) Locate second hole from each end and install attach screws.  
NOTE: If new seal is being installed, the holes should be cut with leather punch or similar tool.
- (8) Locate remaining nutplates and pin retainer in place. Make certain that seal is not stretched or bunched up between holes.
- (9) Install retainer attach screws. Make certain that pins are not removed until adjacent screw has been installed.
- (10) Repeat Paragraph 3.B.(5) through Paragraph 3.B.(9) for remaining retainers on aft edge of door.
- (11) Repeat Paragraph 3.B.(4) through Paragraph 3.B.(10) for forward edge of door.
- (12) Position hinge of upper hinged seal section on seal.
- (13) Using ice pick or similar tool, locate nutplates at each end of hinge and pin hinge in place.
- (14) Locate remaining holes and pin hinge in place. Make certain that seal is tight and is not stretched or bunched up between holes.
- (15) Locate (or cut) holes in seal and install screws. Make certain that pins are not removed until adjacent screws have been installed.
- (16) Repeat Paragraph 3.B.(12) through Paragraph 3.B.(15) for lower hinged seal section.
- (17) Position sponge rubber filler on seal.  
NOTE: Filler can be clamped at the corners to hold it in place.
- (18) Starting at center of aft edge of door, pull seal evenly in place, locate nutplates, and pin in place. Seal should be tight but not stretched.
- (19) Install center retainer.  
NOTE: When a new seal is being installed, cut seal to clear shims under doorstops and adjacent huckbolts, located on fore-and-aft edges of door frame.
- (20) Pull seal evenly in place on both sides of installed retainer, locate nutplates, and pin seal in place.
- (21) Install remaining retainers on aft edge of door.
- (22) Repeat Paragraph 3.B.(18) through Paragraph 3.B.(21) for forward edge of door.
- (23) Install interlock arm fitting.
- (24) Install interlock arm and adjustment washers noted in Paragraph 3.A.(4).
- (25) Connect push-pull rods to upper and lower hinged seal sections.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-11-02**

Page 202  
Feb 01/2015



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

- (26) Actuate bayonet to unlock door handle. Rotate handle to door closed and locked positions.

NOTE: The hinged seal sections must be in the door closed position to install the seal at the upper and lower edges of the door.

- (27) Work seal evenly around corners and along top and bottom edges of door. Seal must be taut but not tight, at corners. Locate nutplates and pin in place.

- (28) Install remaining retainers. Use care not to stretch, wrinkle, or allow bulges in seal.

CAUTION: EXERCISE CARE WHEN TRIMMING SEAL TO PREVENT CUTTING OR SCRATCHING DOOR FRAME.

- (29) When all retainers have been installed, trim edge of seal flush with edge of retainers.

- (30) Install passenger forward entrance door. (PAGEBLOCK 52-11-00/401)

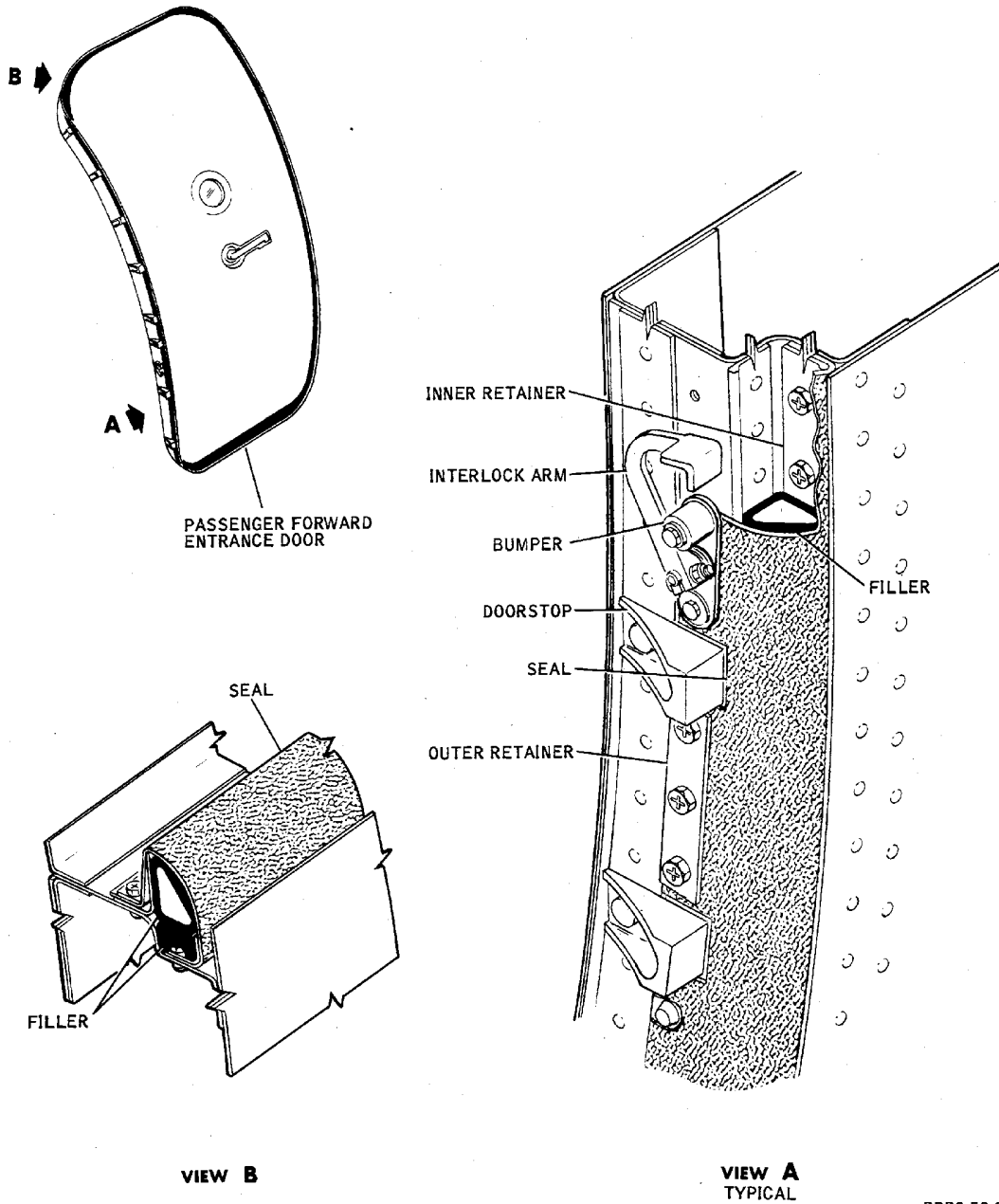
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TP-80MM-WJE

**52-11-02**

Page 203  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Passenger Forward Entrance Door Seal -- Installation  
Figure 201/52-11-02-990-801

EFFECTIVITY  
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TP-80MM-WJE

## 52-11-02

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER DOOR FORWARD ENTRANCE DOOR HOLD-OPEN HOOK - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger door forward entrance door hold-open hook. (Figure 201)
- B. On earlier aircraft the hook is a solid one-piece unit. On later aircraft, the hook is a two-piece unit with a replaceable hook. Procedures are given for replacing both.
- C. This procedure can be performed without removing the door from the aircraft.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Compound, sealing PR-1422GK, B-2	Products Research and Chemical Corp.
Adhesive, Silicone, sealant (white), Silastic 732 RTV, white	Dow Corning Corp.
Solvent, 1,1,1 trichloroethane (stabilized vapor degreasing)	Commercially available

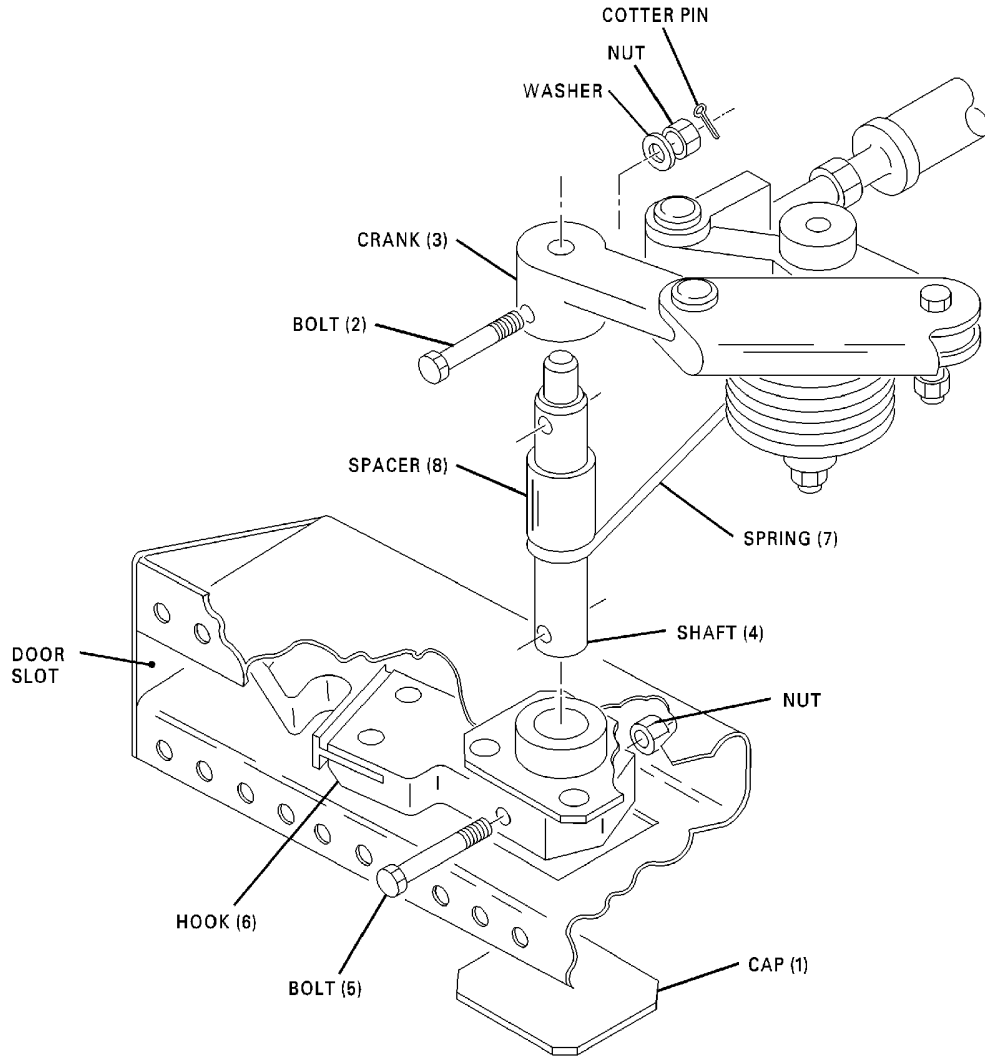
EFFECTIVITY  
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**52-11-04**

TP-80MM-WJE

Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Forward Entrance Door Hold-Open Hook -- Removal/Installation  
Figure 201/52-11-04-990-801**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-11-04**

Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Removal/Installation Door Hold-Open Hook and Shaft

#### A. Remove Hook and Shaft

- (1) Remove evacuation slide. (PAGEBLOCK 25-62-00/201)
- (2) Remove door lining lower panel.

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891**  
(PAGEBLOCK 52-11-01/201 Config 1)

**WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

PASSENGER FORWARD ENTRANCE DOOR LINING - MAINTENANCE PRACTICES,  
PAGEBLOCK 52-11-01/201 Config 2

#### WJE ALL

- (3) For aircraft without inspection holes in inner skin, remove door inner skin and blankets to gain access to hold-open hook.

NOTE: Note type and size of attachments for installation of parts.

- (4) Carefully remove cap (1) with sharp knife.

NOTE: Cap is attached with sealant.

- (5) Remove bolt (2) attaching crank (3) to shaft (4), and bolt (5) attaching hook (6) to shaft (4).

NOTE: Door must be repositioned several times during bolt removals.

- (6) Push shaft (4) downward.

NOTE: Door panel must be protected if using prying tool.

- (7) Remove shaft (4) and spacer (8).

NOTE: Push shaft all the way through hook.

- (8) Remove hook (6) from door slot.

#### B. Install Hook and Shaft

- (1) Position hook (6) in door slot.

- (2) Move long leg of spring (7) past shaft (4), and push shaft up through hook and spacer (8).

NOTE: Long leg of spring will rest on shaft below spacer.

- (3) Install bolts (2) and (5).

NOTE: Door must be repositioned several times during bolt installations.

- (4) Using nonmetallic tool, remove old sealant from surfaces to be sealed.

**WARNING:** WHEN USING TRICHLOROETHANE, MAKE CERTAIN THAT WORK AREA IS WELL VENTILATED. VAPORS CAN BE HARMFUL IF INHALED BY PERSONNEL.

- (5) Using cloth dampened with 1,1,1 trichloroethane, wipe surfaces to be sealed.

- (6) Apply bead of PR-1422 sealant around access hole and press cap (1) into sealant.

- (7) Apply fillet of PR-1422 sealant around edges of cap (1).

### 4. Removal/Installation Replaceable Hold-Open Hook

#### A. Remove Hook

- (1) Open door until hook extends.
- (2) Remove screws attaching hook to base.
- (3) Remove hook.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-11-04**

Page 203  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**B. Install Hook**

- (1) Clean screws, lockwashers, and base of old adhesive.
- (2) Insert hook into base.
- (3) Fill screw holes with adhesive.
- (4) Install screws.
- (5) Wipe off excess adhesive.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-11-04**

Page 204  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER AFT ENTRANCE DOOR - DESCRIPTION AND OPERATION

#### 1. General

- A. The passenger aft entrance door is of the a plug-type design and is located in the aft pressure bulkhead. The door provides the means for entering and leaving the passenger compartment through the passenger aft entrance door stairway. The door also is used during an emergency to leave the compartment by the aft end of the fuselage. When the tailcone is jettisoned (when the door is opened in the emergency mode), the walkway on the ceiling of the ventral stairway is used to get to the tailcone slide.

#### 2. Passenger Aft Entrance Door

##### A. Description

- (1) The passenger aft entrance door is constructed of hat sections, beams, doublers, channels, angles, fittings, skin, and panels. A pressure seal is installed along the outer edge of the door. When the door is closed the seal contacts a seal depressor installed on the doorjamb. Stops installed on the door are designed to permit the seal depressor to depress the door seal far enough to seal the door when the compartment is pressurized. A viewing lens is installed in the upper section of the door. The lens permits viewing of the stairwell before opening the door. (Figure 1)
- (2) Two hinges attached to the right side of the door permit the door to swing forward and to the right. The hinges are designed to allow the door to move aft when the passenger compartment is pressurized. The door can be opened and closed from the passenger compartment and the aft stairwell by handles attached to a common shaft. The door is held in the closed position by studs and lockpins. The lockpins are actuated by the handles through rods and cranks. The lock-pin linkage is held in the open and closed positions by a stop. The stop is spring-loaded to hold the linkage over-center in either the door open or door closed positions. The studs are attached to the right side of the door, opposite the lockpins. When the door is closed the studs and lockpins pick up any forward loading of the door.
- (3) The forward and aft surfaces of the door are covered by a lining. The lining is constructed of insulation batts of glass fiber cemented to the door structure, plastic panels, and hardwood blocking. The exposed surfaces of the lining are finished to blend with the aircraft interior decor.
- (4) An emergency handle is mounted on the upper interior of the door. When the emergency handle is in the OPEN position, and the door is opened normally, the tailcone will jettison.
- (5) A hold-open hook is mounted on the aft right lavatory inboard door or partition. The hold-open hook is spring-loaded and holds the passenger aft entrance door in the open position. When the door is opened, the hook slides over and engages a stricker mounted on top of the door. To release the door, the door is pushed toward the lavatory until the hook can be manually raised to free the door.
- (6) A door warning proximity switch is installed in the left doorjamb. The lower lockpin acts as a target, which actuates the switch. When the door is open, the proximity switch completes a ground circuit to the aft cabin door open indicating light on the annunciator panel, and the light will come on. When the door is closed the light goes off. For a complete description and operation of door warning. (DOOR WARNING, SUBJECT 52-70-00)

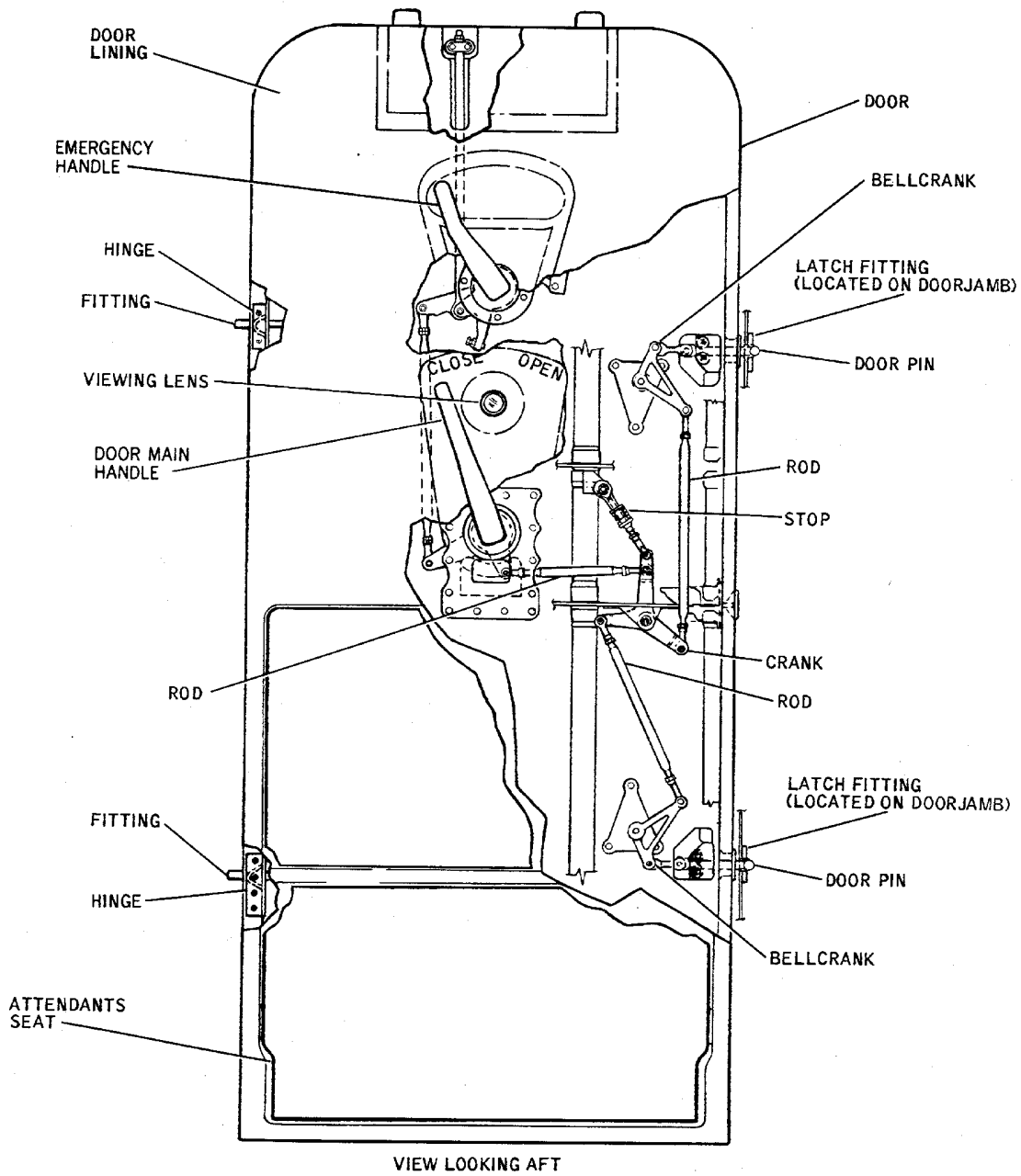
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TP-80MM-WJE

**52-12-00**

Page 1  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Aft Entrance Door  
Figure 1/52-12-00-990-801**

EFFECTIVITY  
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TP-80MM-WJE

**52-12-00**



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER AFT ENTRANCE DOOR - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practices provides removal/installation and adjustment/test instructions for the passenger aft entrance door (Figure 201).
- B. The door can be removed and installed without removing the door lining and attendant's seat. To adjust the door the attendant's seat and back and the door lining must be removed. All adjustments to the door are made with the passenger compartment unpressurized.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Adapter, torque, passenger and service door latch 4916787-1	Douglas Aircraft Co.
Torque wrench (0-600 inch pounds range)	Commercially available
Fish scale, 0-50 pound (0-22.7 kg) pull	Commercially available
Cleaner, Douglas solvent #2 P-D-680, Type 1	Commercially available
Cotton cloth wipers, Type I, Class A	Commercially available
Decal P/N 9956906-509 (self-adhesive)	Douglas Aircraft Co., Inc.

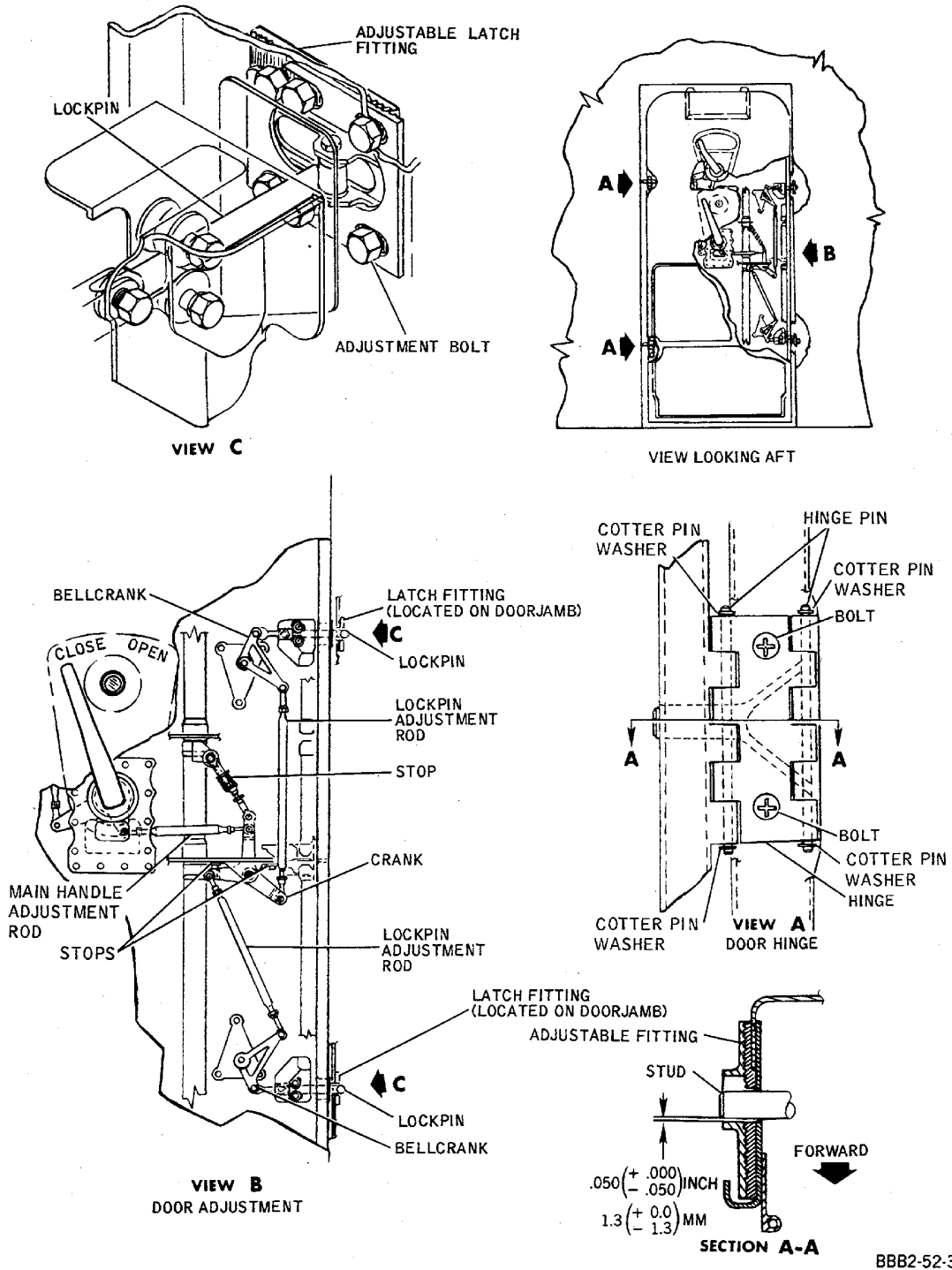
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TP-80MM-WJE

**52-12-00**

Page 201  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



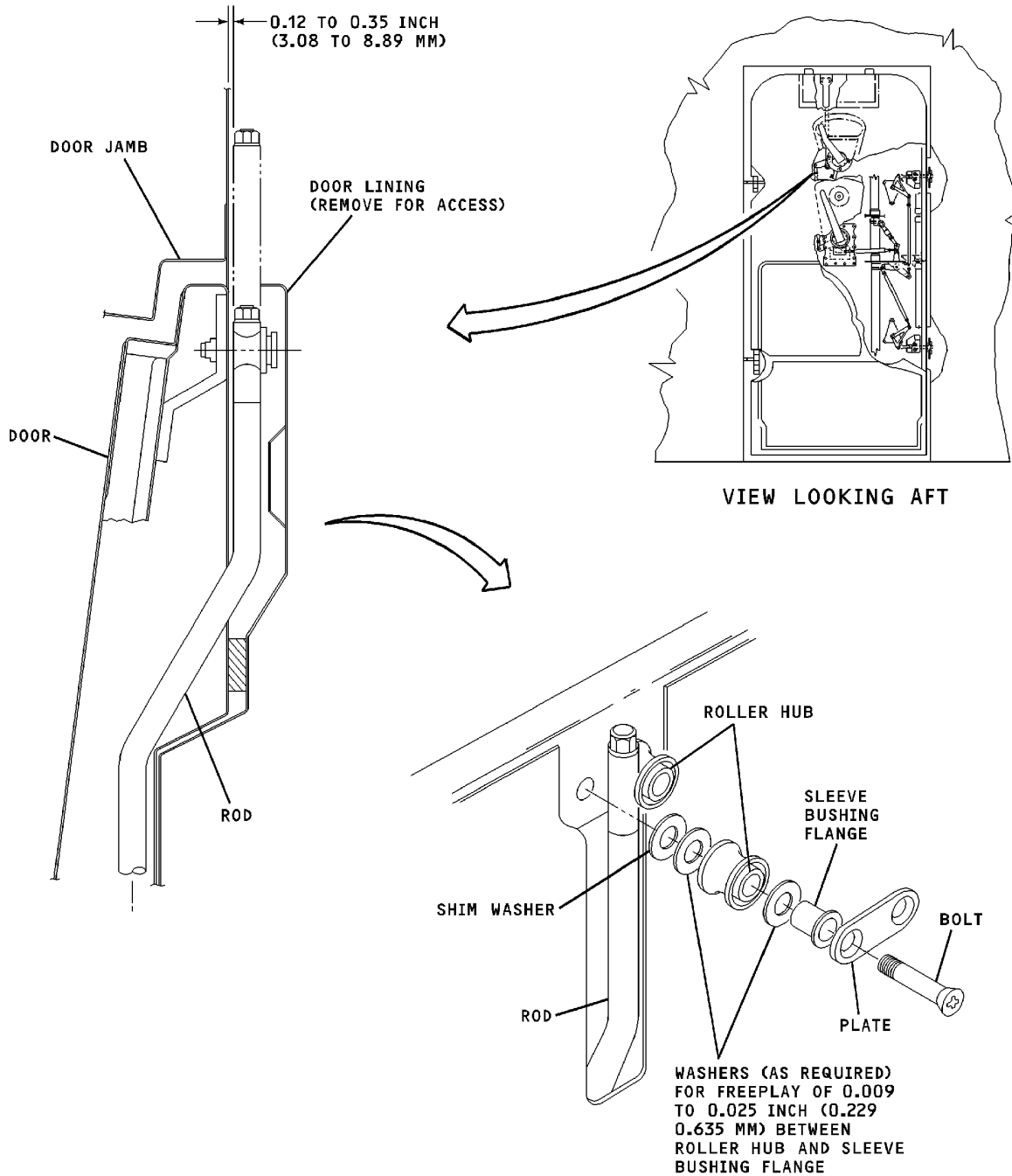
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Passenger Aft Entrance Door -- Installation and Adjustment  
Figure 201/52-12-00-990-802 (Sheet 1 of 2)

EFFECTIVITY  
WJE ALL

52-12-00

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Aft Entrance Door -- Installation and Adjustment**  
Figure 201/52-12-00-990-802 (Sheet 2 of 2)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-12-00**

Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Removal/Installation Passenger Aft Entrance Door

#### A. Remove Door

- (1) Open door.
- (2) Remove cotter pin and washer from each end of inboard hinge pins.

**WARNING:** PASSENGER AFT ENTRANCE DOOR WEIGHS APPROXIMATELY 124 POUNDS (56 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (3) Support door and remove hinge pins and remove door.

#### B. Install Door

**WARNING:** PASSENGER AFT ENTRANCE DOOR WEIGHS APPROXIMATELY 124 POUNDS (56 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (1) Mate hinge section on door with hinge link on structure and install hinge pins.
- (2) Install cotter pin and washer on each end of hinge pins.
- (3) Close door.

### 4. Adjustment/Test Passenger Aft Entrance Door

**NOTE:** Before adjusting door, check that door is properly lubricated. (PAGEBLOCK 12-21-01/301)

**NOTE:** When adjusting door, check the integrity of the locknut(s) being tightened for its self locking feature before continuing adjustment procedure. (PAGEBLOCK 20-30-01/201)

#### A. Adjust Door

- (1) Remove attendant's seat and seat back. (PAGEBLOCK 25-23-02/201)
- (2) Open door.
- (3) Remove door lining.
- (4) Remove panels covering door linkage.

**NOTE:** When installing new door, adjustment of pin on tailcone release mechanism arm above door may be affected. Refer to TAILCONE, SUBJECT 53-53-00, Page 501 for adjustment of this pin.

- (5) Adjust main door handle rod for equal travel of handle from center of viewing lens.

**NOTE:** Door mechanism linkage crank will contact stops on door structure in open and closed positions.

**NOTE:** Force required to actuate main door handle must not exceed 30 pounds (13.61 kg). Torque wrench with 4916787-1 adapter may be used. For computation of indicated torque for a torque wrench using an adapter, refer to PAGEBLOCK 20-30-01/201.

**NOTE:** Removal or alteration of filler inside seal at upper and lower ends of door is permitted, as long as positive compression is maintained with seal depressor.

- (6) With handle in closed position, adjust spring-loaded stop so spring compressed length is 1 1/4 inches (31.75 mm).
- (7) Adjust lockpin rods until end of door lockpins extend 0.375 ±0.032 in. (9.52 ±0.81 mm) beyond rollers when door is closed.
- (8) Adjust lockpin fittings on doorjamb so that when door is closed, outboard end of bevel of lockpins will just contact rollers with no appreciable hand load on handle.

EFFECTIVITY  
WJE ALL

**52-12-00**

TP-80MM-WJE

Page 204  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (9) Adjust door stud fittings on right side of doorjamb until studs clear fittings by 0.050 (+0.000, -0.050) inch (1.3 (+0.0, -1.3) mm) when door is closed and locked.
- (10) Add shims to ensure that all door stops contact jamb bearing pads within 1/16 to 0 inch (1.6 to 0.0 mm) gap.  
NOTE: Check should be made while applying sufficient pressure, near the center area of the door, to compress the seal and deflect the hinge springs enough to cause at least three stops to contact the jamb pads.
- (11) Close door.

**CAUTION:** DO NOT OPEN DOOR WHEN EMERGENCY HANDLE IS IN OPEN POSITION.

- (12) Rotate emergency handle to open.  
NOTE: Force required to actuate door emergency handle must not exceed 20 pounds (9.07 kg), using fish scale 2 inches (50.8 mm) from free end of handle. (TAILCONE, SUBJECT 53-53-00, Page 501)
  - (13) Measure gap between doorjamb and rod. If gap is 0.12 to 0.35 inch (3.08 to 8.89 mm) rotate emergency handle to closed and proceed to Paragraph 4.A.(17).  
NOTE: If gap is less than 0.12 inch (3.08 mm) perform Paragraph 4.A.(14), Paragraph 4.A.(15), Paragraph 4.A.(16).
  - (14) Rotate emergency handle to closed.
  - (15) Install shim washers equally under sleeve bushings of both rollers to obtain 0.12 to 0.35 inch (3.08 to 8.89 mm) gap between doorjamb and rod.
  - (16) Install washers equally on both sides of rollers on sleeve bushings to obtain roller freeplay of 0.009 to 0.025 inch (0.229 to 0.635 mm) between roller hub and sleeve bushing flange.
  - (17) Open door.
  - (18) Install panels covering door linkage.
  - (19) Check WARNING decal on shroud above rod for damage. If damaged or missing, install new decal as follows:
    - (a) Peel off damaged decal (if installed).
    - (b) If required, clean area with Douglas solvent, wipe dry with clean cotton wipers.
    - (c) Remove paper backing from decal and install. Slight wrinkling along aft edge of decal in corner of shroud is acceptable.
  - (20) Install door lining.
  - (21) Install seat back and attendant's seat. (PAGEBLOCK 25-23-02/201)
  - (22) Close door.
  - (23) Check door warning system. (AFT PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-04/201 Config 1 or AFT PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-04/201 Config 3)
- B. Door Stop Adjustment.
- (1) Adjust door stop (at floor) so door will engage hold-open latch (at top of door) without warping door.
- C. Door Centering Adjustment
- (1) For lateral door adjustment, shims may be removed or added to door hinges.
  - (2) For fore and aft adjustment, hinges are serrated and hinge attach bolt holes are slotted.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-12-00**

Page 205  
Aug 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### SEAL, AFT PASSENGER ENTRANCE DOOR - REMOVAL/INSTALLATION

#### 1. General

- A. This procedure has removal and installation instructions for aft passenger entrance door seal.
- B. The pressure seal is installed along outer edge of door. When door is closed the seal contacts a seal depressor installed on doorjamb.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

**Table 401**

Name and Number	Manufacturer
Pen - Marking, Large Fine Point (Permanent) DPM 5274	
Tape - Masking, Economy DPM 884-21	

#### 3. Removal/Installation Passenger Aft Entrance Door Seal

- A. Remove Passenger Aft Entrance Door Seal

**WARNING:** GET SUFFICIENT AID FROM PERSONS AND EQUIPMENT TO HOLD THE COMPONENT DURING REMOVAL AND INSTALLATION. THIS COMPONENT WEIGHS APPROXIMATELY 124 LBS (56 KG). THIS WILL HELP PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Remove aft cabin bulkhead door. (PASSENGER AFT ENTRANCE DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-12-00/201)
  - (a) Place passenger aft entrance door, with seal facing up, on a padded surface.
- (2) Remove aft passenger entrance door seal (1) as follows: (Figure 401) (Figure 402)

NOTE: Mark and identify all hardware as it is removed. Use the identification for installation.

- (a) Identify each retainer and its hardware as to its location on door for installation.
  - (b) Remove 102 screws (2), (3), (4), and (5) from each of ten outer seal retainers (6), (7), (8), (9), (10), (11), (12) and (13). Remove retainers.
  - (c) Open passenger aft entrance door seal (1) fold and remove 114 screws (2), (3), (4), (5), (14), (15), (16), (17), and (18) from each of 10 inner seal retainers (19), (20), (21), (22), (23), (24), (25), (26), (27) and (28). Remove retainers.
  - (d) Open passenger aft entrance door seal (1) fold and remove 12 screws (2), (5), (17), and (18) from inner seal retainer (29).
  - (e) Open passenger aft entrance door seal (1) fold and remove 12 screws (2), (5), (17), and (18) from inner seal retainer (29).
  - (f) Remove passenger aft entrance door seal (1) from door.
- B. Install Passenger Aft Entrance Door Seal
    - (1) Install aft passenger entrance door seal (1) as follows: (Figure 401)(Figure 402)
      - (a) Make sure door frame area is clean and free of chips and burrs that may cause wear or damage to seal (1).
      - (b) Check seal retainers for nicks and burrs that may cause wear or damage to seal (1).

NOTE: If new seal retainers are installed, holes in the retainers must align with nutplates in door, and retainers must be flush with door frame.

EFFECTIVITY  
WJE ALL

# 52-12-01

TP-80MM-WJE

Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (c) Position passenger aft entrance door seal (1) on door.

NOTE: The seal may be clamped at corners to hold it in place.

- (d) Install seal inner retainers as follows:

- 1) Lay inner retainer (20) in place along upper aft edge of door.
- 2) Locate nutplates at upper and lower ends of retainer, and pin retainer in place.
- 3) Use an ice pick or similar tool to locate and pin retainer in third hole from each end.
- 4) Locate second hole from each inner retainer end and loosely install two screws (3).

NOTE: If a new seal is being installed, holes should be cut with a leather punch or similar tool.

- 5) Loosely install 18 screws (3). Make sure that pins are not removed until adjacent screw has been installed.
- 6) Make certain that seal (1) is not stretched or bunched up between holes.
- 7) Tighten all of screws.
- 8) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainer (19) with 20 screws (3), on lower aft edge of door.
- 9) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainers (24), (25) and (26) with 8 screws (2) and screw (15), on forward edge of door.
- 10) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainer (22) with 10 screws (4), on upper edge of door.
- 11) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainer (21) with five screws (16), two screws (15) and screw (14), on upper corner edge of door.
- 12) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainer (23) with seven screws (14), and screw (15), on upper corner edge of door.
- 13) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainer (29) on lower edge of door as follows:
  - a) Install seven nuts (30), (31) and (32), and 12 washers (33), (34), (35), and (36) on lower inner seal retainer (29).
  - b) Install screws (2 each), (18) and (17), and screws (4 each) (2) and (5) on lower inner seal retainer (29).
- 14) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainer (28) with screws (one each) (18), (14) and (15) and two screws (3), on lower corner edge of door.
- 15) Repeat Paragraph 3.B.(1)(d)1 through Paragraph 3.B.(1)(d)7 for inner retainer (27) with screws (two each) (2), (15), and (18) and screw (5), on lower corner edge of door.

- (e) Install seal outer retainers as follows:

- 1) Lay inner retainer (8) in place along upper aft edge of door.
- 2) Locate nutplates at upper and lower ends of retainer, and pin retainer in place.
- 3) Use an ice pick or similar tool to locate and pin retainer in third hole from each end.
- 4) Locate second hole from each outer retainer end and loosely install two screws (3).

NOTE: If a new seal is being installed, holes should be cut with a leather punch or similar tool.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-12-01**

Page 402  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- 5) Loosely install 11 screws (3) and four screws (4). Make sure that pins are not removed until adjacent screw has been installed.
- 6) Make certain that seal (1) is not stretched or bunched up between holes.
- 7) Tighten all of screws.
- 8) Repeat Paragraph 3.B.(1)(e)1 through Paragraph 3.B.(1)(e)7 for outer retainer (7) with screws (9 each) (2) and (3) and screw (4) on lower aft edge of door.
- 9) Repeat Paragraph 3.B.(1)(e)1 through Paragraph 3.B.(1)(e)7 for outer retainer (11) with 14 screws (3), three screws (4), on upper forward edge of door.
- 10) Repeat Paragraph 3.B.(1)(e)1 through Paragraph 3.B.(1)(e)7 for outer retainer (12) with 8 screws (2), nine screws (3) and screw (4), on lower forward edge of door.
- 11) Repeat Paragraph 3.B.(1)(e)1 through Paragraph 3.B.(1)(e)7 for outer retainer (10) with 8 screws (3), on upper edge of door.
- 12) Repeat Paragraph 3.B.(1)(e)1 through Paragraph 3.B.(1)(e)7 for two inner retainers (9) with 12 screws (6 each) (3), on upper corner edges of door.
- 13) Repeat Paragraph 3.B.(1)(e)1 through Paragraph 3.B.(1)(e)7 for inner retainer (13) with 8 screws (2) and 6 screws (5) on lower edge of door.
- 14) Repeat Paragraph 3.B.(1)(e)1 through Paragraph 3.B.(1)(e)7 for two inner retainers (6) with three screws (2), screw (3), on lower corner edges of door.

**WARNING:** GET SUFFICIENT AID FROM PERSONS AND EQUIPMENT TO HOLD THE COMPONENT DURING REMOVAL AND INSTALLATION. THIS COMPONENT WEIGHS APPROXIMATELY 124 LBS (56 KG). THIS WILL HELP PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Install aft passenger entrance door. (PASSENGER AFT ENTRANCE DOOR - MAINTENANCE PRACTICES, PAGEBLOCK 52-12-00/201)
- (3) Do a pressurization leak test of aft passenger entrance door as follows:

**CAUTION:** UNDER NO CIRCUMSTANCES PRESSURIZE AIRCRAFT WITH FORWARD STAIRWELL DOOR OPEN AND PASSENGER DOOR CLOSED. FAILURE TO COMPLY WILL RESULT IN COLLAPSE OF STAIRWELL SHROUD.

- (a) Fully retract forward entrance door stairway.
- (b) Close aircraft doors and windows. Do not block any vents that are normally open.
- (c) Start left or right air conditioning system. Pressurize aircraft to 2.0 psi (13.79 kPa). (DISTRIBUTION - ADJUSTMENT/TEST, PAGEBLOCK 21-20-00/501)
- (d) With aircraft pressurized, check door area for air pressure leaks.
- (e) Depressurize aircraft. (DISTRIBUTION - ADJUSTMENT/TEST, PAGEBLOCK 21-20-00/501)

EFFECTIVITY  
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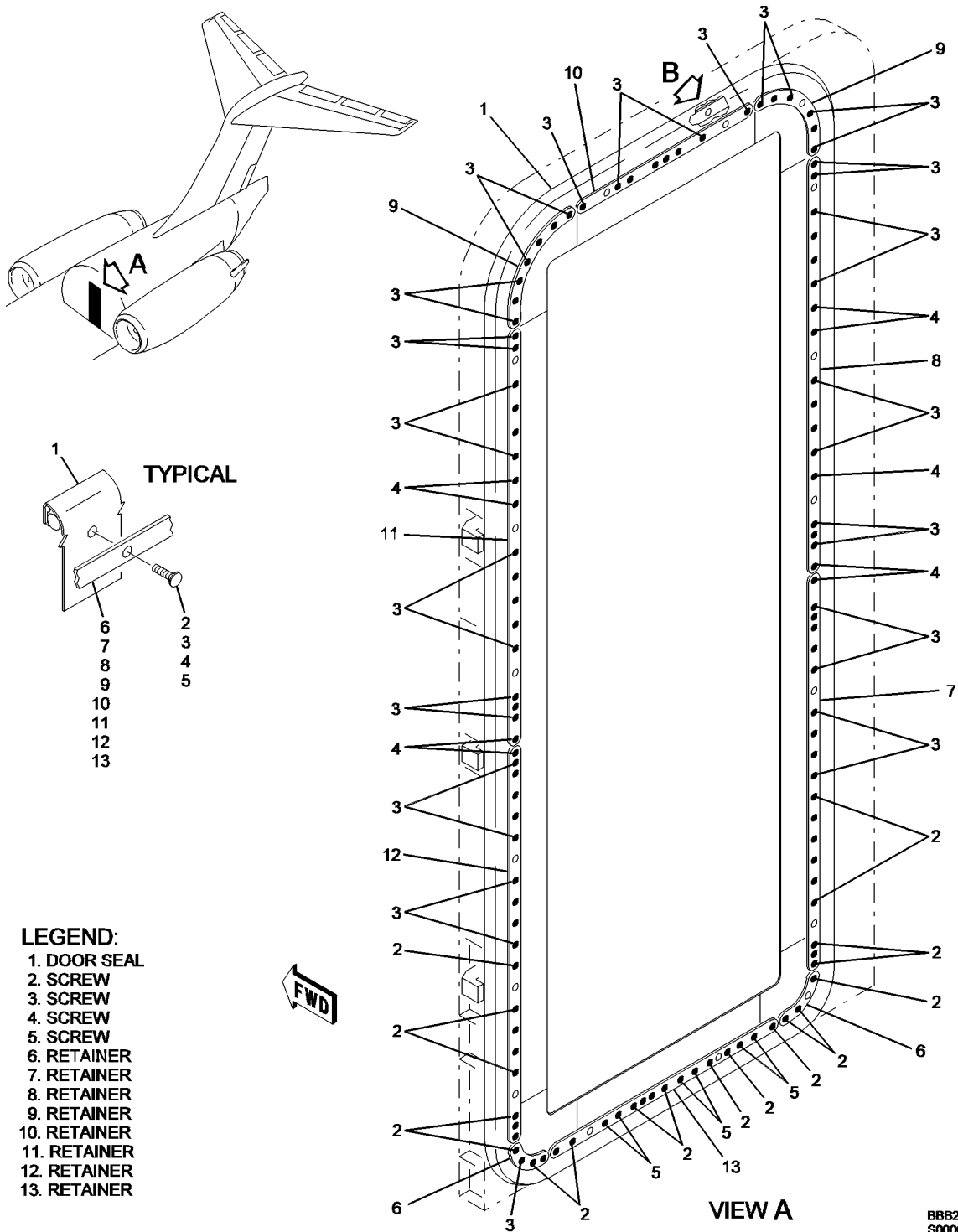
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# 52-12-01

Page 403  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



- LEGEND:**
- 1. DOOR SEAL
  - 2. SCREW
  - 3. SCREW
  - 4. SCREW
  - 5. SCREW
  - 6. RETAINER
  - 7. RETAINER
  - 8. RETAINER
  - 9. RETAINER
  - 10. RETAINER
  - 11. RETAINER
  - 12. RETAINER
  - 13. RETAINER

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**AFT Passenger Entrance Door Seal (Outer Retainer) - Removal/Installation**  
Figure 401/52-12-01-990-801

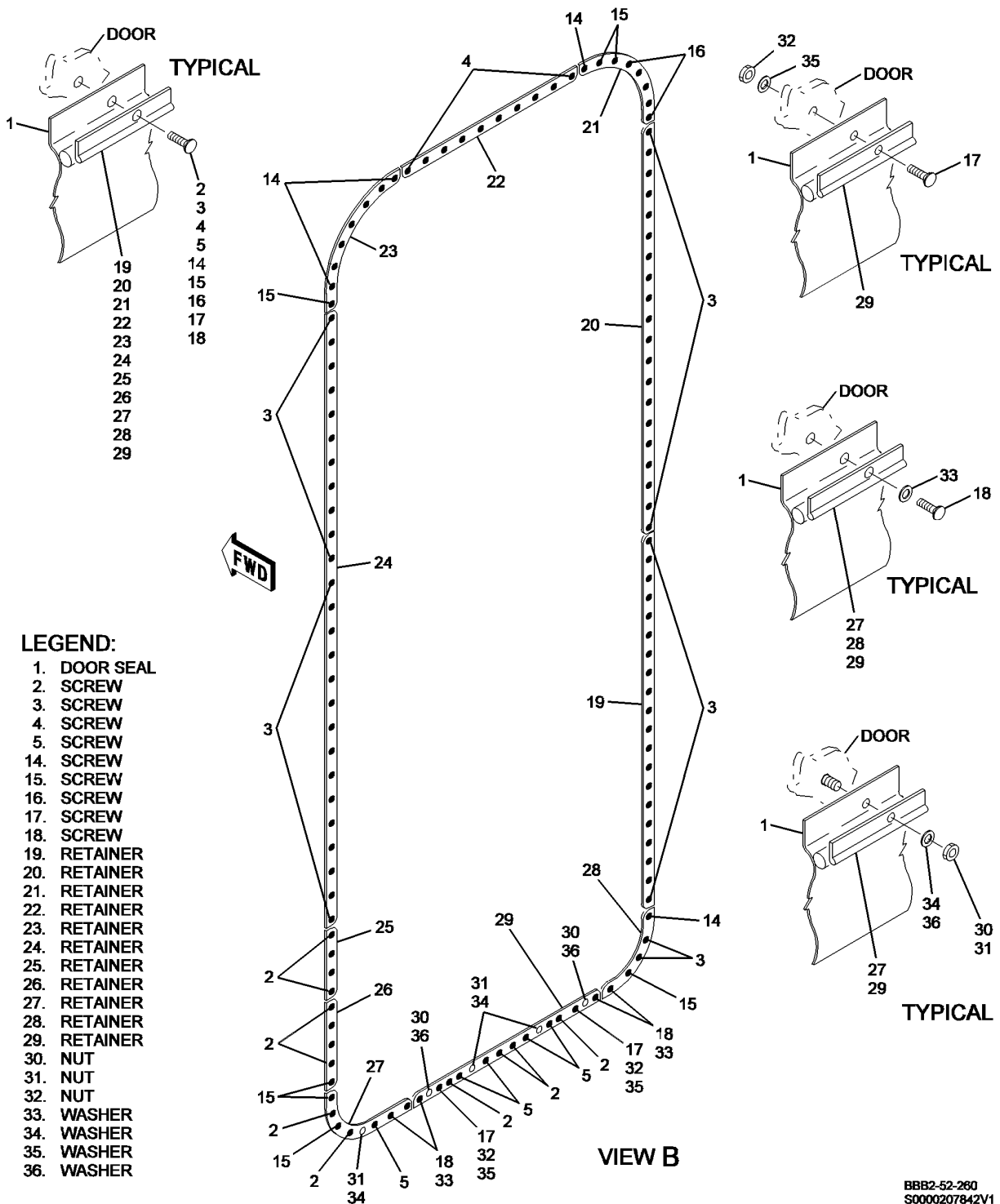
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**52-12-01**

TP-80MM-WJE

Page 404  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**AFT Passenger Entrance Door Seal (Inner Retainer) - Removal/Installation  
Figure 402/52-12-01-990-802**

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EFFECTIVITY  
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**52-12-01**

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### EMERGENCY EXIT - DESCRIPTION AND OPERATION

#### 1. General

- A. Four emergency exit doors provide for evacuation of the passenger compartment. The doors are located two on each side of the fuselage, in the overwing area. The doors are of the plug-type design and are identical in size, construction, and operation. However, they are not interchangeable without adjustment.
- B. In addition to the four overwing emergency exit doors, emergency exit from the passenger cabin is afforded through the passenger forward entrance door, the forward and aft galley service doors, and the passenger aft entrance door to the jettisonable tail cone. (Figure 1)

#### 2. Emergency Exit

##### A. Description

- (1) Overwing Emergency Exit Doors - The overwing emergency exit doors open inward, lift out, and are secured at the bottom by rigid bayonet type lockpins which fit into sockets located in the doorjamb. The doors are secured at the top by a mechanical latch which locks into the upper section of the doorjamb. The latch is actuated from inside or outside the aircraft by handles attached to a common shaft. (Figure 2)
  - (a) Each door consists of hat sections, beams, intercostals, inner pan, outer skin, a latching mechanism, and lockpins. Each door contains a normal size cabin window. A bulb-type pressure seal is installed in a recess around the edge of each door. The doors are secured at the bottom by the lockpins, which engage sockets in the lower section of the doorjamb, and at the top by the latching mechanism. The latching mechanism is actuated by handles installed in recesses on the inner and outer sides of the door. When the door is installed, the outer handle is flush with the outer skin, and the inner handle flush with the door lining. A pull of approximately 17 to 45 pounds on either handle will release the latch and allow the door to fall inward into the compartment. Removed door can be jettisoned overboard through the door opening.
- (2) Latch Mechanism - The latch mechanism consists of a latch shaft, detent plate, lockpin, and outer handle release and release spring. The latch, on the upper end of the latch shaft, engages a latch bar in the doorjamb when the door is in the installed position. The detent plate is attached to the lower end of the latch shaft. The lockpin is spring-loaded and engages a detent in the detent plate to hold the latch in the engaged position until either the inner or outer handle is actuated.
- (3) A lining is attached to the inner surface of each door. The lining consists of plywood honeycomb panels, insulation batts of glass fiber, hardwood blocking, and plastic panels. The lower section of the lining is cemented to the door structure and is not readily removable. A window shade similar to the shades installed at the normal windows, is attached to the lining.

##### B. Operation

- (1) The inner handle is attached to the latch shaft, when actuated the handle rotates the latch to the unlatched position. The outer handle, when released, springs out-ward far enough to grasp the handle, at the same time the opposite end of the handle springs inward and contacts the detent plate. When the handle is rotated the detent plate rotates moving the latch to the unlatched position. When the outer handle is rotated the inner handle also rotates. When the inner handle is rotated the outer handle remains stationary. The outer handle is held in the flush position by the spring-loaded release plate.

##### C. To Operate System

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-20-00**

Page 1  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** DO NOT ATTEMPT TO OPEN DOOR WHEN PASSENGER COMPARTMENT IS PRESSURIZED.

- (1) Remove Door.
  - (a) Unlatch door by pulling inner or outer handle.
  - (b) Remove door by rotating top of door inward and lifting door upward to disengage lockpins from sockets in doorjamb.

- (2) Install Door

**NOTE:** Doors are not interchangeable without adjustment, and should be installed in their original locations.

- (a) Align and place door lockpins in doorjamb sockets.
- (b) Push door into place.
- (c) Lock door by pushing in on inner handle until latch engages latch bar in doorjamb.

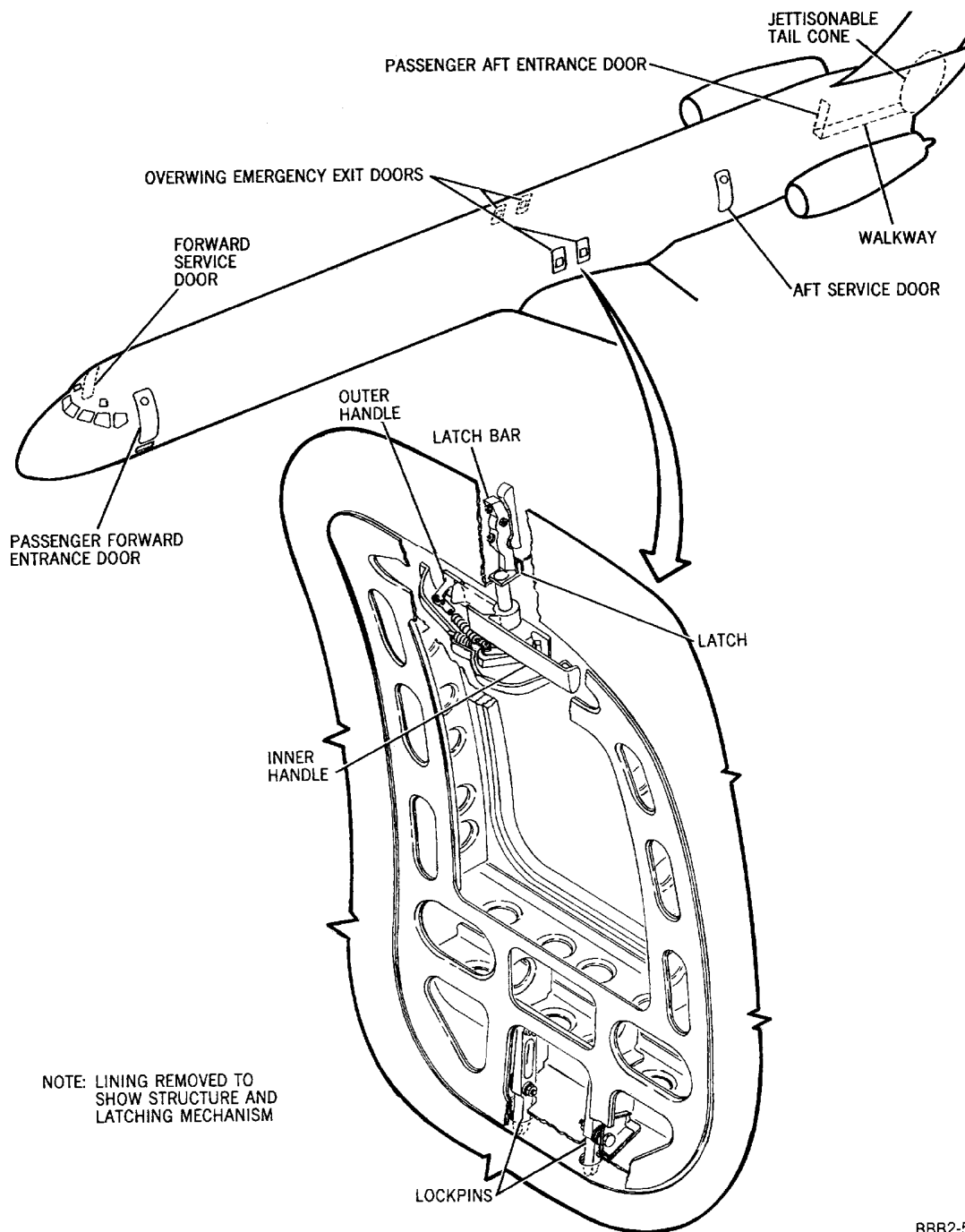
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TP-80MM-WJE

**52-20-00**

Page 2  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL



NOTE: LINING REMOVED TO SHOW STRUCTURE AND LATCHING MECHANISM

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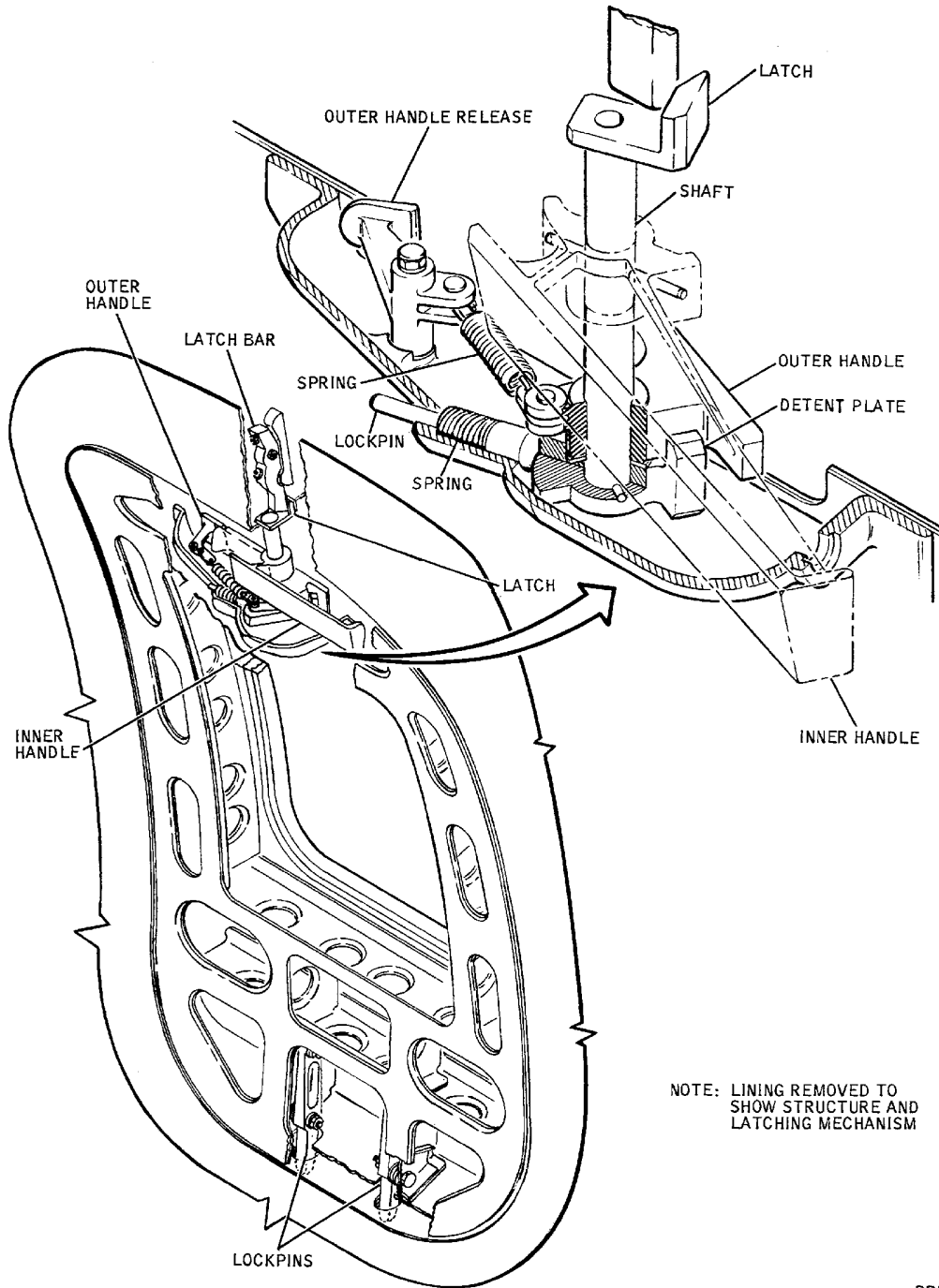
**Emergency Exit Doors**  
Figure 1/52-20-00-990-802

EFFECTIVITY  
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TP-80MM-WJE

## 52-20-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BB82-52-13

Overwing Emergency Exit Door  
Figure 2/52-20-00-990-803

EFFECTIVITY  
WJE ALL

52-20-00

TP-80MM-WJE

Page 4  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERWING EMERGENCY EXIT DOORS - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practice provides removal/installation instructions for all overwing emergency exit doors. The doors are located in the overwing area of the passenger compartment.

#### 2. Removal/Installation Overwing Emergency Exit Doors

(Figure 401)

##### A. Remove Door

**NOTE:** The doors are identical in size, construction, and operation. However, they are not interchangeable without adjustment, and should be marked for identification and location when removed.

- (1) Unlatch door by pulling inside or outside handle.

**WARNING:** SUPPORT OVERWING EMERGENCY EXIT DOOR ADEQUATELY WHEN REMOVING. DOOR WEIGHS APPROXIMATELY 41 POUNDS (18.6 KG).

- (2) Remove door by rotating top of door inward and lifting door upward to disengage lockpins from sockets in doorjamb.

##### B. Install Door

- (1) Before installing door check the following.

- (a) Pressure seal for wear and proper installation.
- (b) Nicks and burrs on door and doorjamb.
- (c) Lockpins properly aligned and free from burrs.

**WARNING:** SUPPORT OVERWING EMERGENCY EXIT DOOR ADEQUATELY WHEN INSTALLING. DOOR WEIGHS APPROXIMATELY 31 POUNDS (14 KG).

- (2) Place lockpins in sockets in doorjamb.
- (3) Push door into place.
- (4) Lock door by pushing in on inside handle until latch engages latch bar in doorjamb.
- (5) Check door (PAGEBLOCK 52-21-00/601).

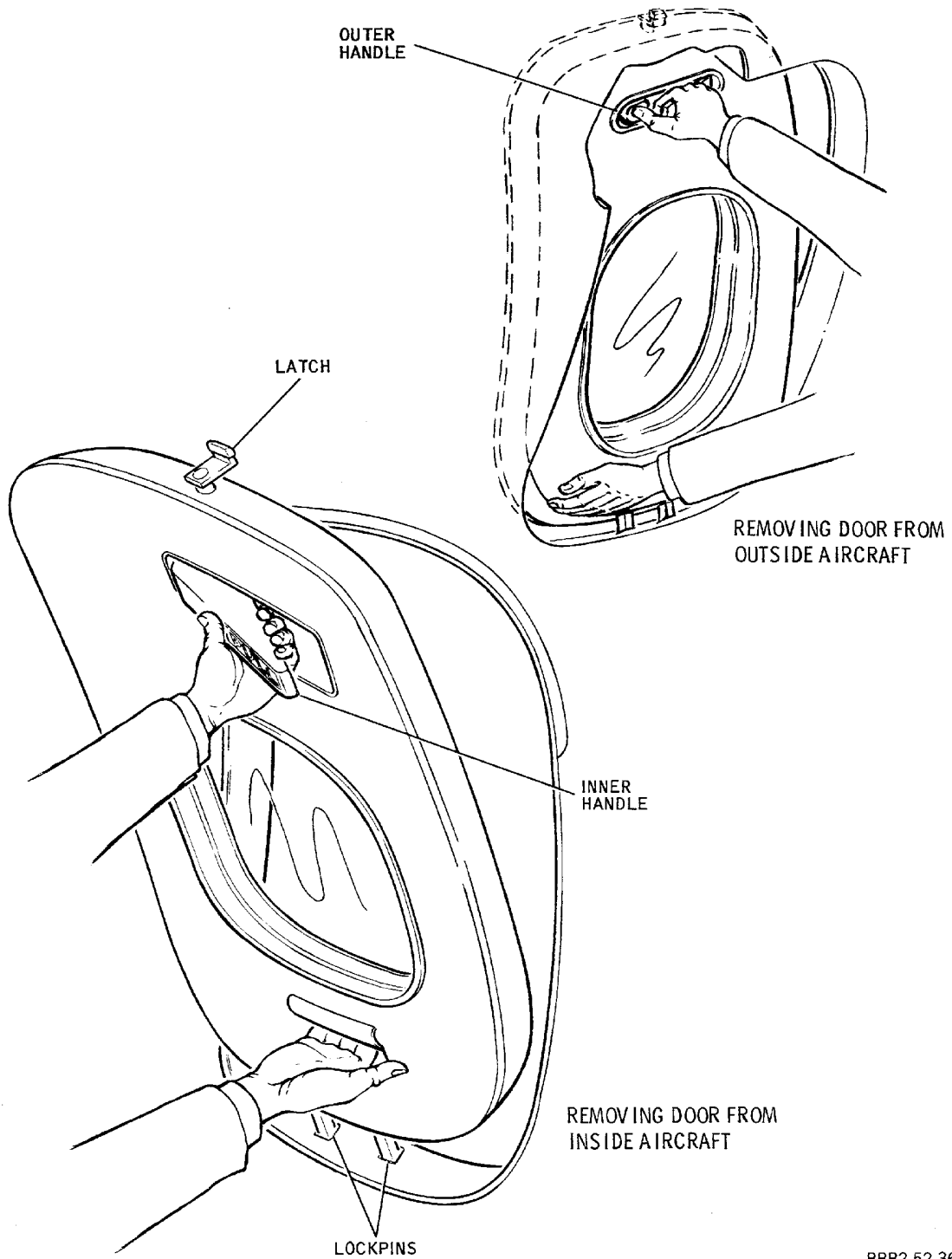
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**52-21-00**

Page 401  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Overwing Emergency Exit Door -- Installation  
Figure 401/52-21-00-990-801**

EFFECTIVITY  
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TP-80MM-WJE

**52-21-00**

Page 402  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERWING EMERGENCY EXIT DOORS - ADJUSTMENT/TEST

**1. General**

- A. This maintenance practice provides adjustment/test instructions for the overwing emergency exit doors. (Figure 501)
- B. Adjustment instructions for all overwing emergency exit doors are identical. The up-and-down and fore-and-aft positions of the lower section of the door are adjusted by the lockpins installed in the lower section of the door. The upper section of the door is centered in the doorjamb by blocks installed on the doorjamb. The in-and-out position of the door is adjusted by the lockpins and the latch bar located in the doorjamb. Normally fairing adjustment is not required as the door is permanently faired when originally installed.

**2. Equipment and Materials**

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Fish scale, 0-50 pound (0-22.7 kg) pull	

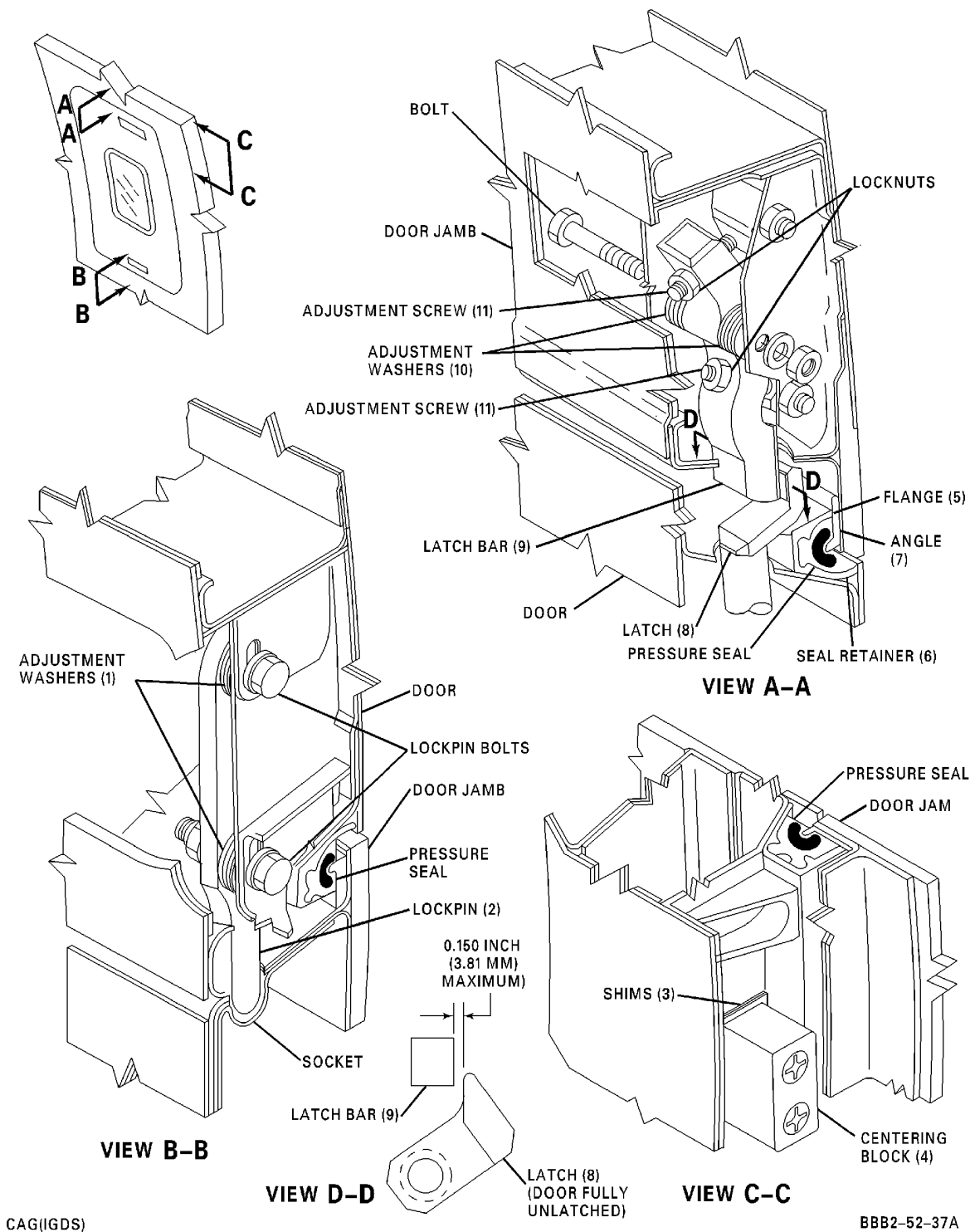
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TP-80MM-WJE

**52-21-00**

Page 501  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Overwing Emergency Exit Doors -- Adjustment  
Figure 501/52-21-00-990-802

EFFECTIVITY  
WJE ALL

**52-21-00**

TP-80MM-WJE

Page 502  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Overwing Emergency Exit Doors

NOTE: The emergency exit door lining must be removed to adjust the lockpins.  
(PAGEBLOCK 52-21-01/201)

#### A. Adjust Door

NOTE: The numbers in parentheses in the following text correspond to callouts. (Figure 501)

##### (1) Adjust lockpins as follows:

NOTE: Door should be adjusted vertically and horizontally to obtain a constant gap of  $5/32(\pm 3/32)$  inch ( $4.0(\pm 2.4)$  mm) between door skin and fuselage skin. Gaps between upper and lower edges, and forward and aft edges of door skin and fuselage skin must be equal and parallel within  $1/16$  inch (1.6 mm).

NOTE: The seal depressor must contact the seal within  $3/16$  inch (4.8 mm) of center at all points on the seal.

(a) Adjust door horizontally by adding or removing washers (1) between lockpins (2) and lower structure of door and by adding or removing shims (3) between centering block (4) and upper structure of door.

NOTE: Adjustment washers should be changed at each adjustment if dimpling of washers occurs.

(b) Adjust door vertically by loosening lockpin bolts, moving lockpins (2) up or down on door structure, and tightening lockpins bolts.

(c) With the door latched, adjust the in and out position of lockpins (2) so that door fairs consistently along the entire edge.

NOTE: It may be necessary to adjust the latch bar before making this adjustment.  
(Paragraph 3.A.(2)(g))

(d) Adjust door inboard or outboard to fair door skin with fuselage skin within tolerances specified. (Figure 502)

NOTE: Aircraft must be pressurized when measuring tolerances. (Figure 502)

NOTE: Outboard adjustment is accomplished by machining flange (5) and inboard adjustment is accomplished by adding shim or shims under angle (7) on doorjamb.

NOTE: The outboard section of the seal retainer channel is used as a pressure stop. Slight wear or marking of the paint, or metal portion of doorjamb inner surface is considered normal. Wear limits are 0.030 inch (.762 mm) in 1.0 inch (25 mm) radius.

##### (2) Adjust latch bar as follows:

(a) Install door, but do not latch door.

(b) With centering block (4) contacting doorjamb and door latching mechanism in full unlatched position, check for clearance up to 0.150 inch (3.81 mm)(maximum) between latch (8) and latch bar (9). If clearance is acceptable, proceed to Paragraph 3.A.(2)(g). If not, proceed with next step.

(c) Remove grill above doorjamb by releasing fasteners along top of grill.

(d) Remove valance above door by releasing fasteners along top of valance.

(e) Remove door.

(f) Reposition adjustment washers (10) so clearance between latch (8) and latch bar (9) is acceptable.

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

- (g) Adjust latch bar adjustment screws (11) until force required to lock or unlock door does not exceed 45 pounds (20.4 kg) and is not less than 10 pounds (4.5 kg), when force (fish scale) is applied 1 1/2 inches (38 mm) from end of inside door handle.

NOTE: With passenger compartment unpressurized, the door may be underfaired 3/16 inch (4.8 mm) maximum provided a watertight condition exists. If grill and valance were not removed; remove the cover from the emergency exit light fixture above the door to gain access to the latch bar adjustment screws.

- (3) Tighten lockpin bolts and locknuts on latch bar adjustment screws.  
(4) Check door. (PAGEBLOCK 52-21-00/601)  
(5) Install grill and valance and/or emergency exit light cover.  
(6) Install door lining. (PAGEBLOCK 52-21-01/201)

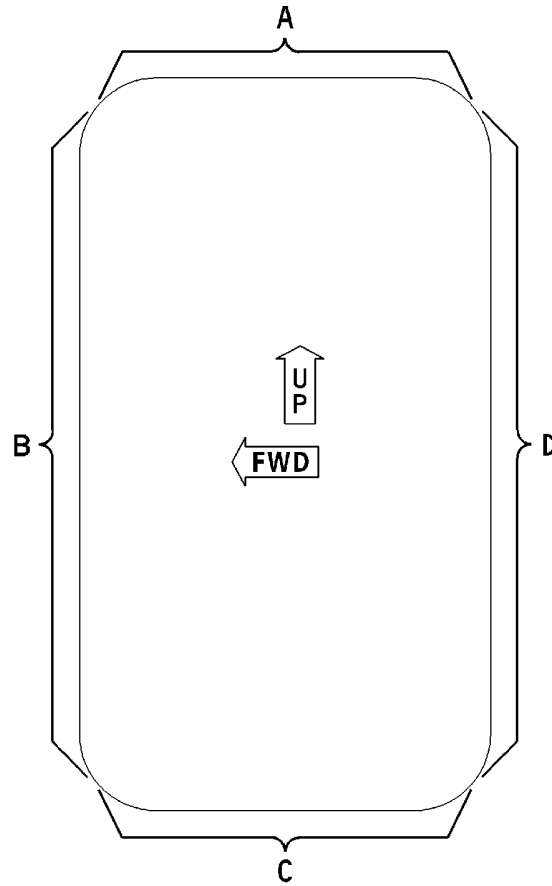
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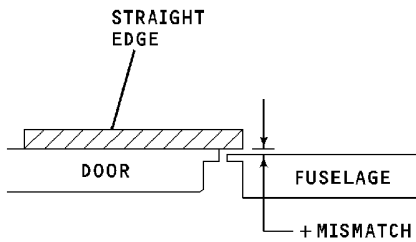
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Page 504  
Feb 01/2015

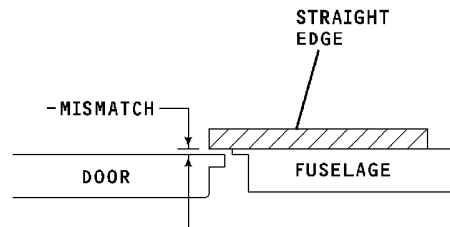
**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



LOCATION	MAXIMUM ACCEPTABLE MISMATCH
A AND C	+0.030 INCH (0.76 MM) -0.080 INCH (2.03 MM)
B AND D	± 0.020 INCH (0.51 MM)



CAG(IGDS)



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**Overwing Emergency Exit Door -- Fair Adjustment  
Figure 502/52-21-00-990-803**

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TP-80MM-WJE

**52-21-00**

Page 505  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERWING EMERGENCY EXIT DOOR - ADJUSTMENT/TEST

#### 1. General

- A. This procedure contains MSG-3 task card data.

#### **TASK 52-21-00-710-801**

#### 2. Operational Check of the Overwing Emergency Exit Door Mechanism

##### A. Operational Check of the Overwing Emergency Exit Door Mechanism

SUBTASK 52-21-00-710-001

- (1) Make sure the internal and external areas around the emergency exit door are clear of obstructions.
- (2) Using the external door handle, open the emergency exit door and remove the door from the door jamb.
  - (a) Make sure the external door handle does not bind on the door skin.
  - (b) Make sure the door is free to move from the door jamb and does not bind on the fuselage skin or interior lining.
- (3) Install the emergency exit door and return the external door handle to the closed and locked position.
  - (a) Make sure the external door handle is flush with the door skin.
- (4) Using the internal door handle, open the emergency exit door and remove the door from the door jamb.
  - (a) Make sure the internal door handle does not bind on the door lining.
  - (b) Make sure the door is free to move from the door jamb and does not bind on the fuselage skin or interior lining.
- (5) Install the emergency exit door and return the internal door handle to the closed and locked position.
  - (a) Make sure the internal door handle is flush with the door lining.

##### B. Job Close-up

SUBTASK 52-21-00-940-001

- (1) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

EFFECTIVITY  
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TP-80MM-WJE

**52-21-00**

Config 1  
Page 501  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**OVERWING EMERGENCY EXIT DOORS - CHECK**

**1. General**

A. This maintenance practice provides check instructions for the overwing emergency exit doors.

**2. Equipment and Materials**

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 601**

Name and Number	Manufacturer
6 GPM sprinkler type water applicator	

**3. Check Overwing Emergency Exit Doors**

A. Check Door

- (1) Check operation of inside and outside handle. Latch must release within following force values applied on inside handle 1 1/2 inches (38 mm) from end of inside handle:
  - (a) If new door or pressure seal is installed; 17 pounds (7.7 kg) minimum, 45 pounds (20.4 kg) maximum.
  - (b) If same door and pressure seal is installed and has been subjected to one or more pressure cycles; 10 pounds (4.5 kg) minimum, 45 pounds (20.4 kg) maximum.
- (2) Check pressure seal for defects and evidence of leaks.
- (3) Check seal depressor for nicks, dents, and distortion.
- (4) Check for constant gap of 5/32(±3/32) inch (4.0(±2.4) mm) between door skin and fuselage skin.

NOTE: Gaps between upper and lower edges, and forward and aft edges of door skin and fuselage skin must be equal and parallel within 1/16 inch (1.6 mm).

- (5) Check that clearance between door latch and latch bar is 0.150 inch (3.81 mm) maximum when handle is in full unlatched position.
- (6) Check that outside handle is flush with door skin, and that inside handle is flush with door lining, when door is installed.

B. Door Static Water Leak Check

- (1) Perform water leak check of applicable door as follows:
  - (a) Close and latch applicable overwing emergency exit door and exit door adjacent to it.
  - (b) Apply water at 6 gallons per minute (GPM) with a sprinkler type applicator for 3 minutes to exterior of door.
  - (c) From aircraft interior, examine door for leaks at seals. No leaks are permitted.
    - 1) Repair all leaks. (OVERWING EMERGENCY EXIT DOOR SEAL - MAINTENANCE PRACTICES, PAGEBLOCK 52-21-02/201)
    - 2) Leak check door again after all repairs.

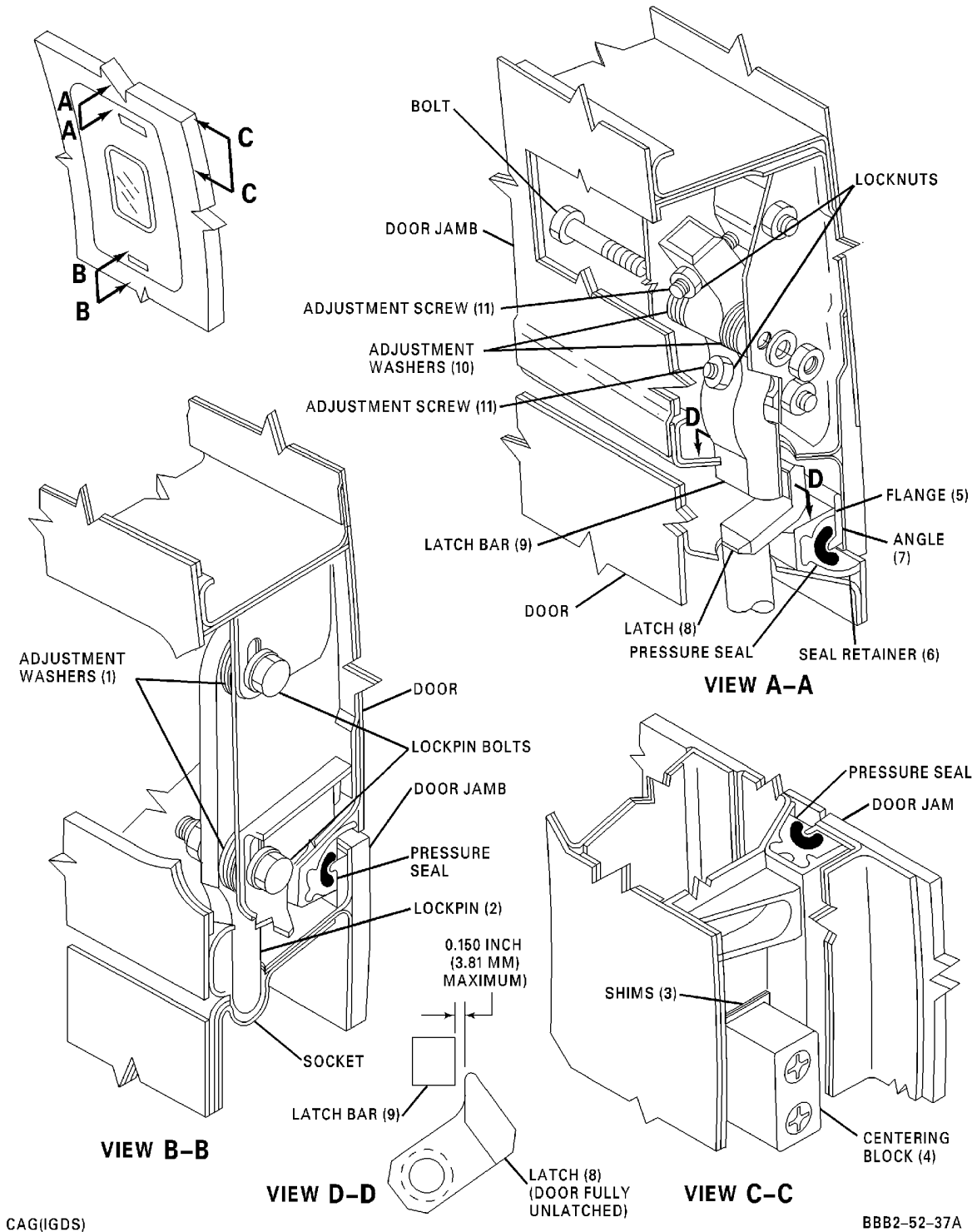
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**52-21-00**

TP-80MM-WJE

Page 601  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Overwing Emergency Exit Doors -- Adjustment  
Figure 601/52-21-00-990-804

EFFECTIVITY  
WJE ALL

52-21-00

TP-80MM-WJE

Page 602  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERWING EMERGENCY EXIT DOOR LINING - MAINTENANCE PRACTICES

**1. General**

A. This maintenance practice provides removal/installation and adjustment instructions for the overwing emergency exit door lining. The procedures for all overwing emergency exit door linings are identical. (Figure 201)

**2. Equipment and Materials**

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Adhesive, Epoxy EA-9309.3NA DPM 3279-3	Courtaulds Aerospace Inc. Sealants, Adhesives, & Coatings Div. Glendale, CA
Adhesive, air drying, Dapco 3301 DMS QPL 1880	Stabond Corp. Gardena, CA

**3. Removal/Installation Overwing Emergency Exit Door Lining**

A. Remove Lining (Figure 201)

- (1) Remove Door. (PAGEBLOCK 52-21-00/401)
- (2) Carefully pry handle cup from lining.
- (3) Remove assist handle cup.
- (4) Remove arm rest.
- (5) Remove screws attaching lining to door.
- (6) Remove lining from door.

B. Install Lining

- (1) Position lining on door.
- (2) Install screws and fasten lining to door.
- (3) Install arm rest.
- (4) Install assist handle cup.

**WARNING:** EPOXY ADHESIVE IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN EPOXY ADHESIVE IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET EPOXY ADHESIVE IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

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**52-21-01**

TP-80MM-WJE

Page 201  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (5) Cement handle cup to lining with adhesive, EA-9309.
- (6) Install door. (PAGEBLOCK 52-21-00/401)

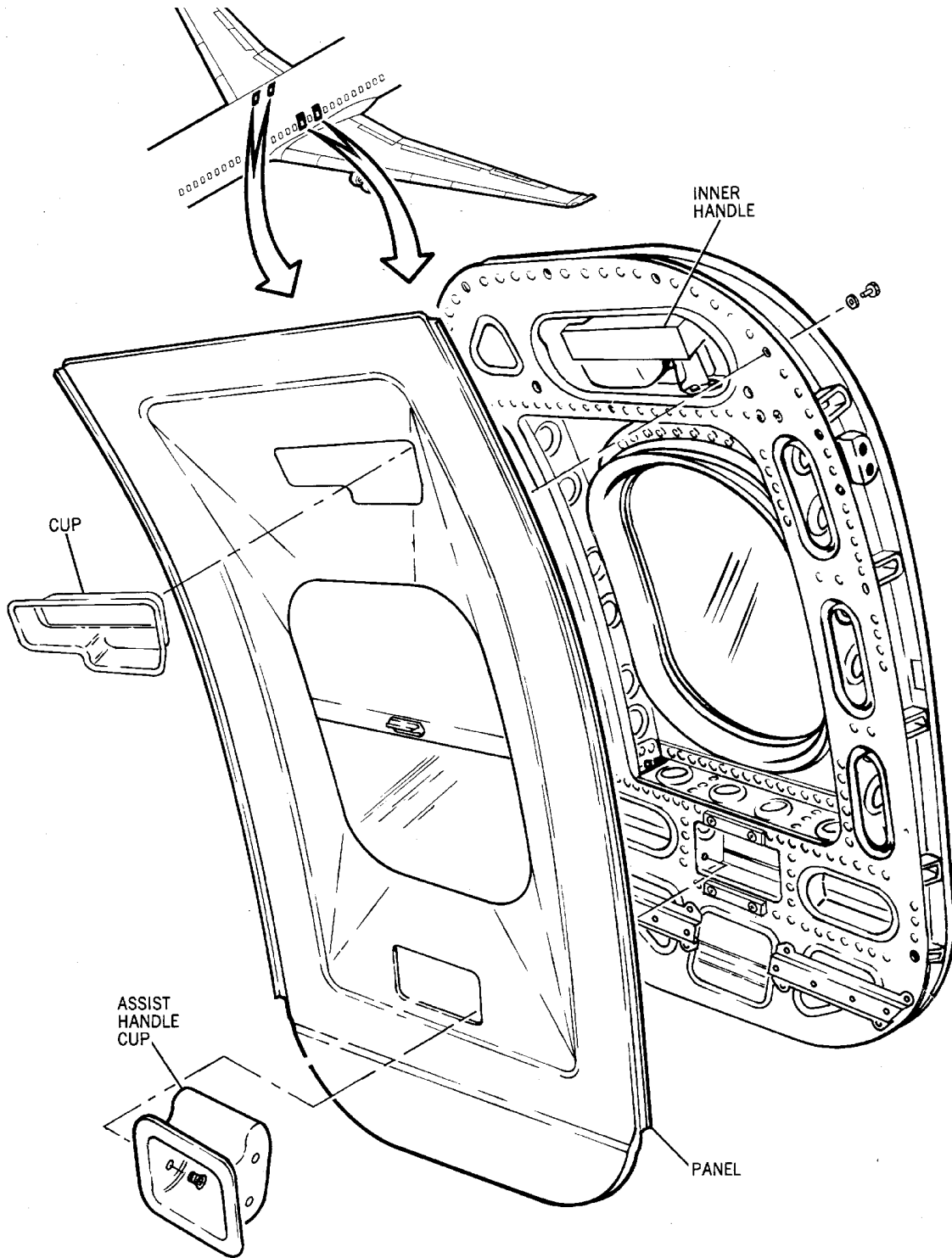
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TP-80MM-WJE

# 52-21-01

Page 202  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Overwing Emergency Exit Door Lining -- Installation  
Figure 201/52-21-01-990-801**

EFFECTIVITY  
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**52-21-01**

TP-80MM-WJE

Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 4. Adjustment/Test Overwing Emergency Exit Door Lining

#### A. Adjust Lining. (Figure 202)

- (1) After installation of lining, with edge trim removed, temporarily install door. (PAGEBLOCK 52-21-00/401)
- (2) Check clearances between door liner and side panels.
- (3) Remove door. (PAGEBLOCK 52-21-00/401)
- (4) Trim liner as necessary.

**WARNING:** SILICONE RUBBER ADHESIVE IS AN AGENT THAT IS EXPLOSIVE, FLAMMABLE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE RUBBER ADHESIVE IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SILICONE RUBBER ADHESIVE IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (5) When prefit clearances have been obtained, install liner trim using Dapco 3301 adhesive.
- (6) Check clearances between trim and side panels.
- (7) When clearances have been obtained, install door. (PAGEBLOCK 52-21-00/401)

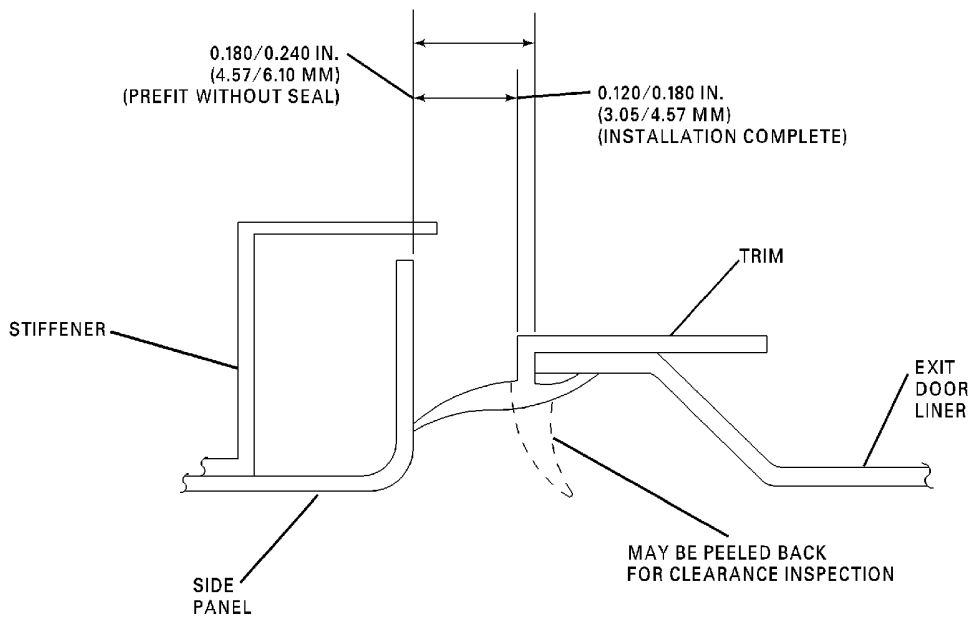
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TP-80MM-WJE

**52-21-01**

Page 204  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Overwing Emergency Exit Door Lining -- Adjustment**  
Figure 202/52-21-01-990-802

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TP-80MM-WJE

## 52-21-01

Page 205  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERWING EMERGENCY EXIT DOOR SEAL - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides the removal and installation instructions for the overwing emergency exit door seal.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

**Table 201**

Name and Number	Manufacturer
Spoon seal tool (DZZ7377-1)	
Sealant PR-1422 B 1/2 DPM 2292-2	
Cleaner handwipe DPM 6380-1	
Solvent, Sealant remover DPM 6410	
Cloth, (low lint) MIL-C-85043 (Type II)	

#### 3. Removal/Installation Overwing Emergency Exit Door Seal

- A. Remove door seal as follows: (Figure 201)

- (1) Remove overwing emergency exit door. (PAGEBLOCK 52-21-00/401)

**CAUTION:** PLACE DOOR ON FELT PAD OR SIMILAR MATERIAL TO PROTECT FINISH ON OUTBOARD SIDE OF DOOR.

- (2) Position overwing emergency exit door on a suitable support with inboard side up.  
 (3) Using tool with smooth surfaces and no sharp edges, grasp door seal.  
 (4) Pull unserviceable door seal from retainer.

- B. Install door seal as follows: (Figure 201)

**WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A SENSITIZER, AN ASPHYXIAN, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

EFFECTIVITY  
WJE ALL

# 52-21-02

TP-80MM-WJE

Page 201  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (1) Use solvent (DPM 6380-1) and clean cloth to remove unwanted hydraulic fluid, dirt and grease.
- (2) Check that door frame in area where seal is to be installed and retainer are clean and free of chips and burrs which may cause wear or damage to door seal.
- (3) Align door seal with overwing emergency exit door retainer.
- (4) Install door seal into door retainer. Use seal-spoon hand tool to push seal into retainer. Make sure door seal is properly seated in retainer at all points and the seal is not wrinkled.
- (5) Make sure there are no seal splices within the bottom 8 in. (20.32 cm) of the retainer.
- (6) Do not apply too much hand force to door seal. Too much force can stretch or shrink seal and cause an incorrect fit.

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

**WARNING:** LOW VISCOSITY POLYSULFIDE SEALANT IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LOW VISCOSITY POLYSULFIDE SEALANT IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LOW VISCOSITY POLYSULFIDE SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (7) Apply a small quantity of sealant to the concave portion of door seal between retainer beads to ensure retention of the seal. Fill the voids between overwing emergency exit door seal and door seal retainer with sealant.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-21-02**

Page 202  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

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**WARNING:** SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (8) Make sure the sealant is dry and remove any excess sealant with cleaner (DPM 6410) before you install the door back.
- (9) Install overwing emergency exit door. (OVERWING EMERGENCY EXIT DOORS - REMOVAL/INSTALLATION, PAGEBLOCK 52-21-00/401)
- (10) Remove all tools and equipment from the work area. Make sure area is clean.

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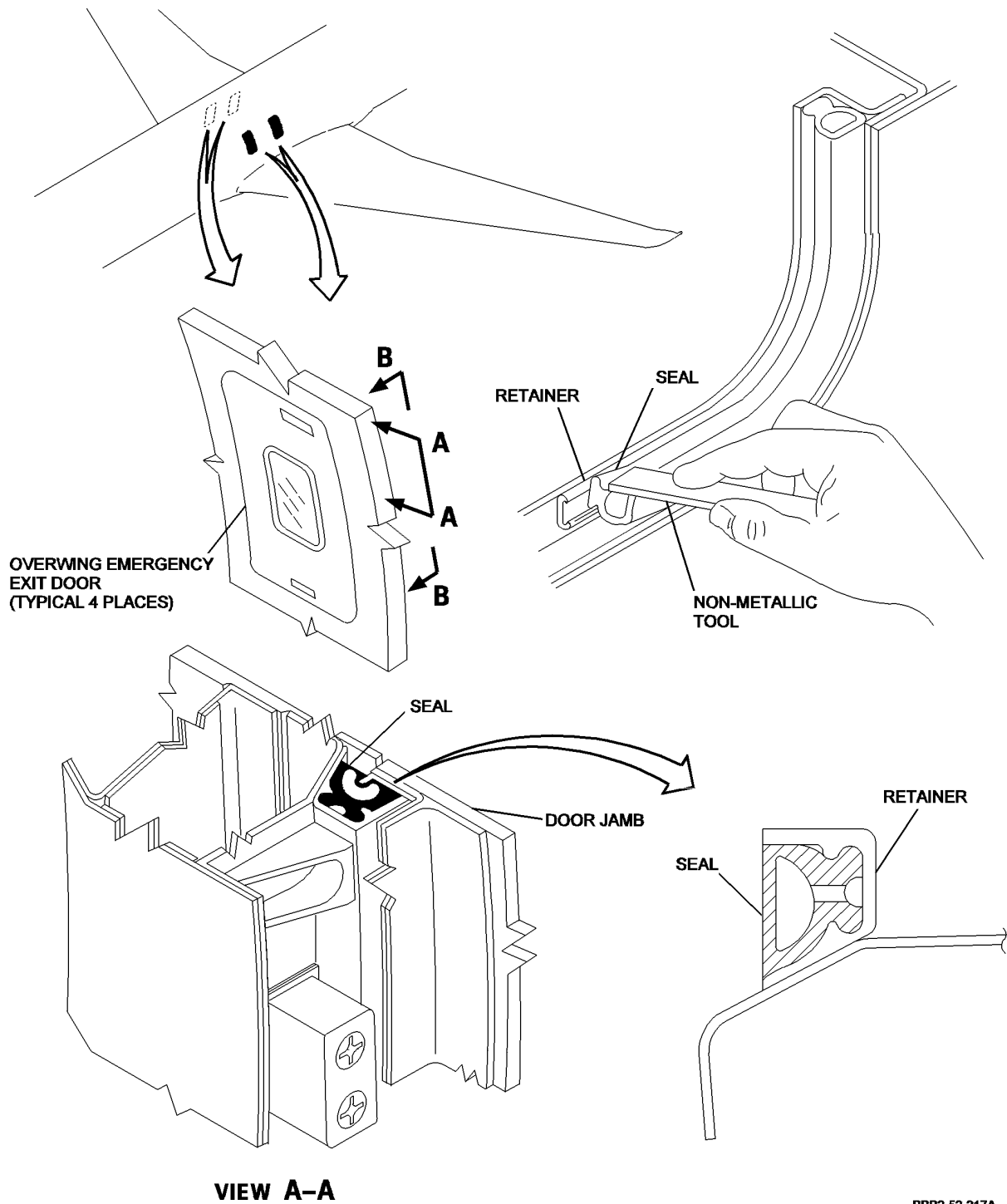
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**52-21-02**

Page 203  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Overwing Emergency Exit Door Seal - Removal/Installation**  
Figure 201/52-21-02-990-801 (Sheet 1 of 2)

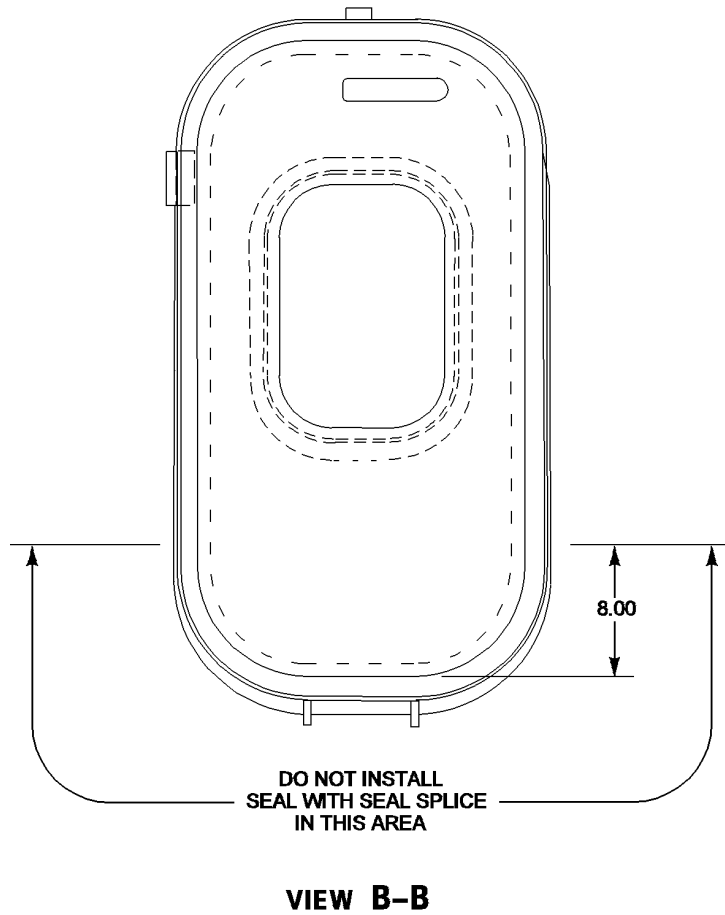
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**52-21-02**

Page 204  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Overwing Emergency Exit Door Seal - Removal/Installation  
Figure 201/52-21-02-990-801 (Sheet 2 of 2)

EFFECTIVITY  
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TP-80MM-WJE

## 52-21-02

Page 205  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### CARGO - DESCRIPTION AND OPERATION

#### 1. General

- A. Three cargo doors are provided for access to the cargo compartments located in the lower section of the fuselage right side. Two forward and one aft of the wing. The doors are of the plug-type design and are similar in construction except for location. Each door is attached to the fuselage structure by two hinges designed to permit the doors to open inward and upward. The doors are secured in the closed position by a latching mechanism actuated by an external handle and in the open position by hold-open hooks which are engaged and released by actuating the door handle. (Figure 1)

#### 2. Forward, Mid, and Aft Lower Cargo Compartment Doors

##### A. Description

- (1) Each door consists of inner and outer pans, beams, frames, doublers, intercostals, and fittings. The outer pan is covered by a skin, and the inner pan by a vinyl sheet foam insulation. Two hinges attached by pivot bolts to the door and the doorjamb, permit the door to open inward and upward. Springs attached to the pivot bolts allow up-and-down movement of the pivot bolts in elongated holes to permit proper door seal. The springs, installed in recesses in the hinges, and held in place by bolts secured to the door and hinge, permit the door to move outward against the doorjamb when the compartment is pressurized.
- (2) The door is secured in the closed position by cam-type latches. The latch mechanism is actuated by a handle located in a recess in the outer skin. When the door is closed and latched, the handle is flush with the door skin. The door is held in the open position by hold-open hooks which engages the door latching mechanism cams on the edges of the door. Setscrews installed in the doorjamb are provided for adjusting the door to fair the outer surface with the fuselage skin from outside the aircraft. Two reel-type bungees are provided to counterbalance the weight of the door. Access panels are provided in the outer skin to gain access to the door latching mechanism when the door is closed and latched.
- (3) A door warning proximity switch installed on the doorjamb of each door is actuated by a target attached to the door. When the door is opened, the switch completes a ground circuit to the door warning indication in the flight compartment. On later aircraft, a centering guide is installed on the aft doorjamb to keep the door from shifting aft and activating the proximity switch. For a complete description and operation of door warning, refer to DOOR WARNING, SUBJECT 52-70-00, page 1.
- (4) A hinged cargo barrier is installed inboard of the cargo door to prevent cargo from spilling into the cargo door operating area. The lower end of the barrier has spring-loaded latches on both ends. The barrier is opened and latched under the cargo door after the cargo door has been latched in the open position.

##### B. Operation

EFFECTIVITY  
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TP-80MM-WJE

**52-30-00**

Config 1

Page 1

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** CARGO DOOR WEIGHS APPROXIMATELY 115 POUNDS (51.75 KG). BOTH CARGO DOOR AND BARRIER MUST BE LATCHED PROPERLY IN OPEN POSITION TO PREVENT ACCIDENTAL RELEASE, WHICH COULD CAUSE POSSIBLE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) The cargo door is opened by pushing the circular section of the door handle inward to raise the handle. The handle is then rotated counterclockwise (downward). When the handle is rotated, links attached to the door handle shaft rotate two torque tubes, one in each side of the door. The cams on the outboard ends of the torque tubes rotate around latch pins, installed in the doorjamb, to a position where the cams will clear the latch pins. The door can then be raised upward. When the door is raised to the full up position, the door handle is rotated to the door latched position. The cams on the torque tubes engage the hold-open hooks, securing the door in the up position. (Figure 2)
- (2) With the cargo door open and latched, the barrier is rotated outboard and up, covering the cargo door. Hooks on the barrier latches engage catches to hold the barrier in the open position.
- (3) The barrier must be closed before the cargo door can be closed. The latch buttons on the outboard ends of the barrier are pressed to unlatch the barrier, and the barrier is lowered into closed position.
- (4) The cargo door is closed by turning the door handle to the door unlatched position. This releases the cams from the hold-open hooks, permitting the door to drop. When the door is dropped, the reel-type bungees tighten, and cushion the last third of the door drop to help prevent slamming of the door against the doorjamb. Two extensions on the lower end of the barrier are held between the door and doorjamb to prevent outward movement of the barrier by loose baggage. With the door closed, the door handle is turned to the door latched position. Upon release, the spring-loaded handle goes into the handle recess and becomes flush with the skin.

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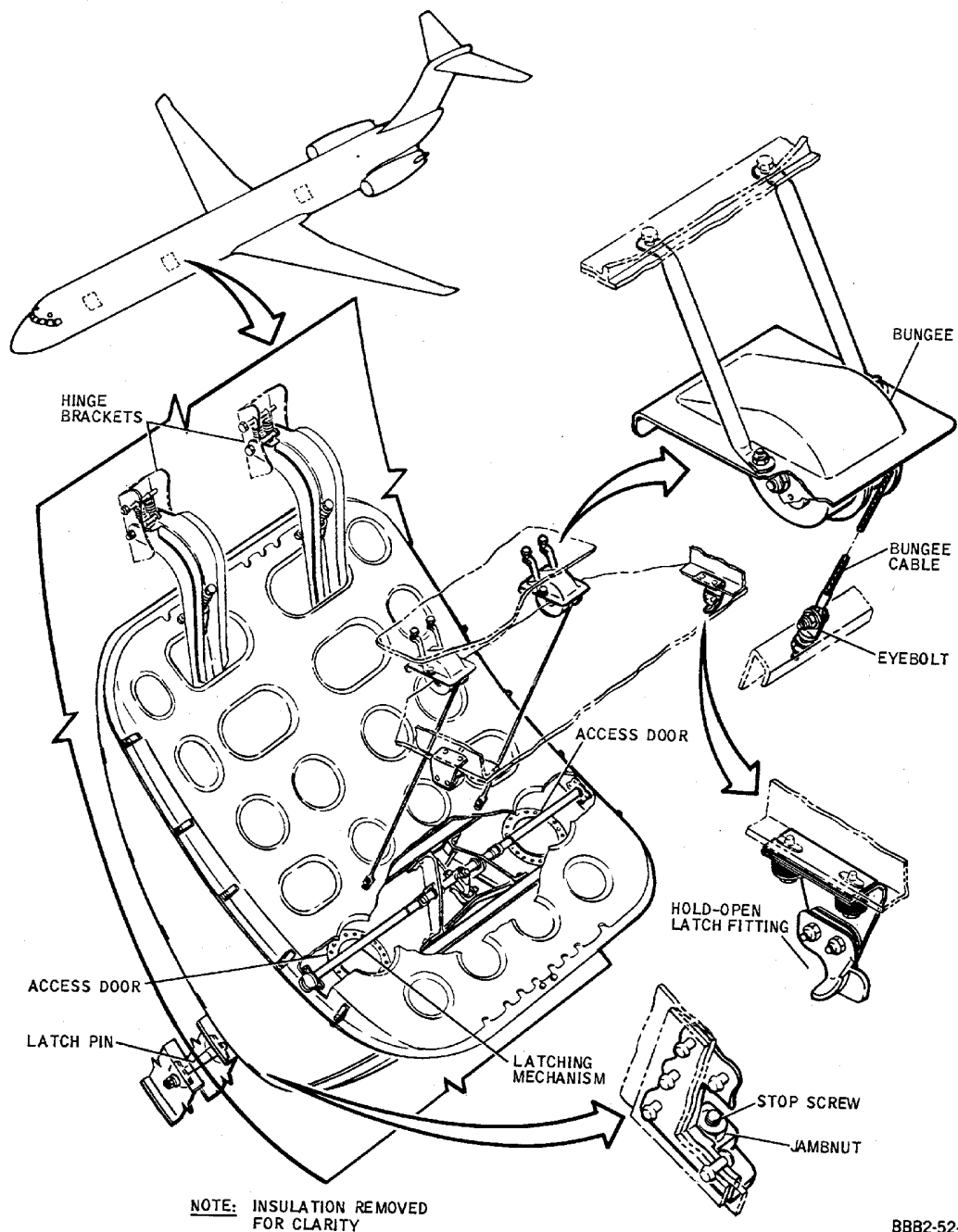
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**52-30-00**

Config 1  
Page 2

Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Forward, Mid, and Aft Lower Cargo Compartment Doors  
Figure 1/52-30-00-990-801

EFFECTIVITY  
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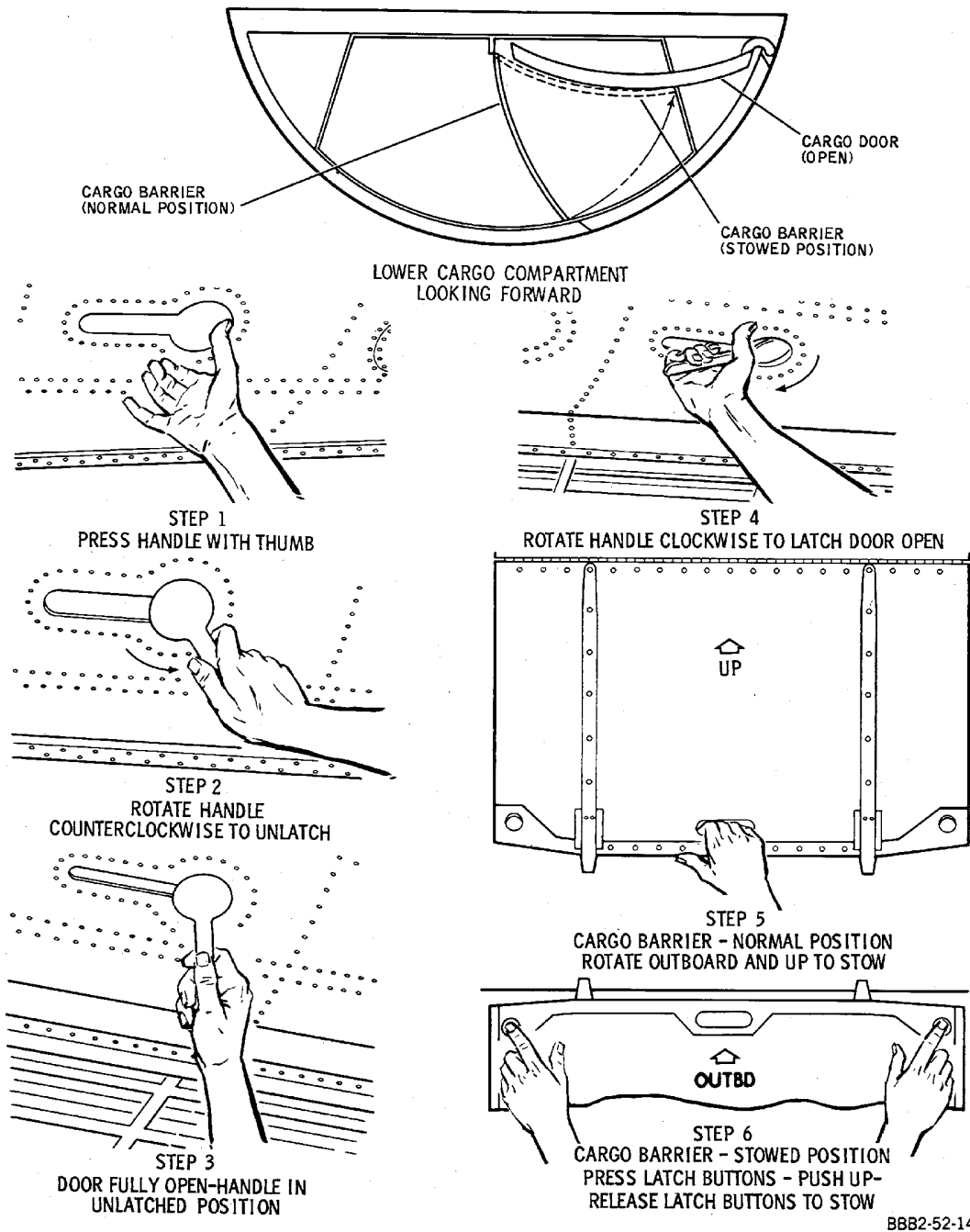
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Config 1

Page 3

Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Lower Cargo Compartment Door -- Operation  
Figure 2/52-30-00-990-802**

EFFECTIVITY  
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TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the forward, mid, and aft lower cargo compartment doors. (Figure 401)
- B. The removal and installation procedures for the forward, mid, and aft lower cargo compartment doors are identical, except as noted.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 401**

Name and Number	Manufacturer
Tape, adhesive transfer, Scotch 9568 DPM 5363	Minn. Mining & Mfg. Corp. Los Angeles, CA
Solvent, ethyl alcohol, denatured	
Wipers, cotton, cleaning, Type 1, Class A	
Grease, wide temperature range, MIL-G-81322	

#### 3. Removal/Installation Forward, Mid, and Aft Lower Cargo Compartment Doors

- A. Remove Door (Primary Method)
  - (1) Open door.

**CAUTION:** EXERCISE CARE WHEN DISCONNECTING BUNGEE CABLES TO PREVENT POSSIBLE INJURY TO PERSONNEL, SINCE DOOR IS NO LONGER COUNTERBALANCED WHEN BUNGEE CABLES ARE DISCONNECTED.

- (2) Disconnect bungee cables from door.

NOTE: The door can be left partially open to relieve tension on the bungee cables.

NOTE: To retain bungee rigging when cables are disconnected at cargo door, install a bolt or equivalent through cable end to prohibit cable end from passing through reel, thus eliminating rerigging when connecting cable to reel.

- (3) Determine and note number and placement of adjustment washers installed on hinge bolts attaching hinges to hinge brackets.
- (4) Remove springs from hinge attach bolts and bolts through hinge brackets.
- (5) Support door and remove hinge bolts. Retain adjustment washers and spacers for installation.

EFFECTIVITY  
WJE ALL

**52-31-00**

TP-80MM-WJE

Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** CARGO DOOR WEIGHS APPROXIMATELY 115 POUNDS (51.75 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (6) Remove door by lifting hinges out of hinge brackets. Tilt door on diagonal and lower through door opening.

### B. Install Door (Primary Method)

**NOTE:** When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

- (1) Before installing door, check following:
  - (a) Pressure seal for wear, cuts, and proper installation.
  - (b) Seal depressor, door, and doorjamb edges for nicks, dents, and burrs.
  - (c) Check that edges of insulation adheres to edges of door structure.
- (2) If edges of insulation do not adhere to door structure, proceed as follows:

**WARNING:** ETHYL ALCOHOL IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, AND POISONOUS. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN ETHYL ALCOHOL IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET ETHYL ALCOHOL IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- (a) Clean area to be cemented with clean cotton cloth dampened with denatured ethyl alcohol.
  - (b) Apply 1 inch wide strip of tape (DPM 5363) to door structure.
  - (c) Carefully position insulation over door structure and press onto surfaces with firm hand pressure.

**WARNING:** CARGO DOOR WEIGHS APPROXIMATELY 115 POUNDS (51.75 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (3) Position door hinges in hinge brackets and install hinge bolts temporarily.
- (4) If door removed in Paragraph 3.A., is being installed, and position of hinges on door has not been changed, proceed with Paragraph 3.B.(5). If new door is being installed or location of door hinges have changed, proceed with Paragraph 3.B.(5).
- (5) Lubricate hinge bolts with MIL-G-81322 grease, then install hinge bolts, spacers, and adjustment washers, as noted in Paragraph 3.A.(3).
- (6) Install springs to hinge attach bolts and bolts through hinge bracket.
- (7) Connect and adjust bungee cables. (PAGEBLOCK 52-31-00/501)
- (8) Check door. (PAGEBLOCK 52-31-00/601)
- (9) Check door warning system. (PAGEBLOCK 52-70-02/201)

### C. Remove Door (Alternate Method)

EFFECTIVITY  
WJE ALL

**52-31-00**

TP-80MM-WJE

Page 402  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (1) Open door.

**CAUTION:** EXERCISE CARE WHEN DISCONNECTING BUNGEE CABLES TO PREVENT POSSIBLE INJURY TO PERSONNEL, SINCE DOOR IS NO LONGER COUNTERBALANCED WHEN BUNGEE CABLES ARE DISCONNECTED.

- (2) Disconnect bungee cables from door.

**NOTE:** The door can be left partially open to relieve tension on the bungee cables.

**NOTE:** To retain bungee rigging when cables are disconnected at cargo door, install a bolt or equivalent through cable end to prohibit cable end from passing through reel, thus eliminating rero rigging when connecting cable to reel.

- (3) Remove screws attaching upper section of insulation to door. (PAGEBLOCK 52-31-02/201)
- (4) Pull insulation away from door to gain access to hinge lower attach bolts.
- (5) Remove nuts securing spring bolts to door.
- (6) Support door and remove hinge attach bolts from door hinge fittings. Retain spacers for installation.

**WARNING:** CARGO DOOR WEIGHS APPROXIMATELY 115 POUNDS (51.75 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (7) Remove door by lifting hinges out of door hinge fittings. Tilt door on diagonal and lower through door opening.

### D. Install Door (Alternate Method)

**NOTE:** When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

- (1) Before installing door, check following:
  - (a) Pressure seal for wear, cuts, and proper installation.
  - (b) Seal depressor, door, and doorjamb edges for nicks, dents, and burrs.
  - (c) Check that edges of insulation adheres to edges of door structure.
- (2) If edges of insulation do not adhere to door structure, proceed as follows:

**WARNING:** ETHYL ALCOHOL IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, AND POISONOUS. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN ETHYL ALCOHOL IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET ETHYL ALCOHOL IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- (a) Clean area to be cemented with clean cotton cloth dampened with denatured ethyl alcohol.
  - (b) Apply 1 inch wide strip of tape (DPM 5363) to door structure.

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (c) Carefully position insulation over door structure and press onto surfaces with firm hand pressure.

**WARNING:** CARGO DOOR WEIGHS APPROXIMATELY 115 POUNDS (51.75 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (3) Position door, and insert hinge spring bolts into bolt holes in door. Install, but do not tighten nuts.
- (4) Position hinges in door fittings, and install hinge bolts and spacers.  
**NOTE:** Coat bolts with MIL-G-81322 grease before installation.
- (5) Position insulation on door and install attach screws.
- (6) Adjust door. As a minimum, hinge spring bolt and door fair must be adjusted.  
(PAGEBLOCK 52-31-00/501)
- (7) Connect and adjust bungee cables. (PAGEBLOCK 52-31-00/501)
- (8) Check door. (PAGEBLOCK 52-31-00/601)
- (9) Check door warning system. (PAGEBLOCK 52-70-02/201)

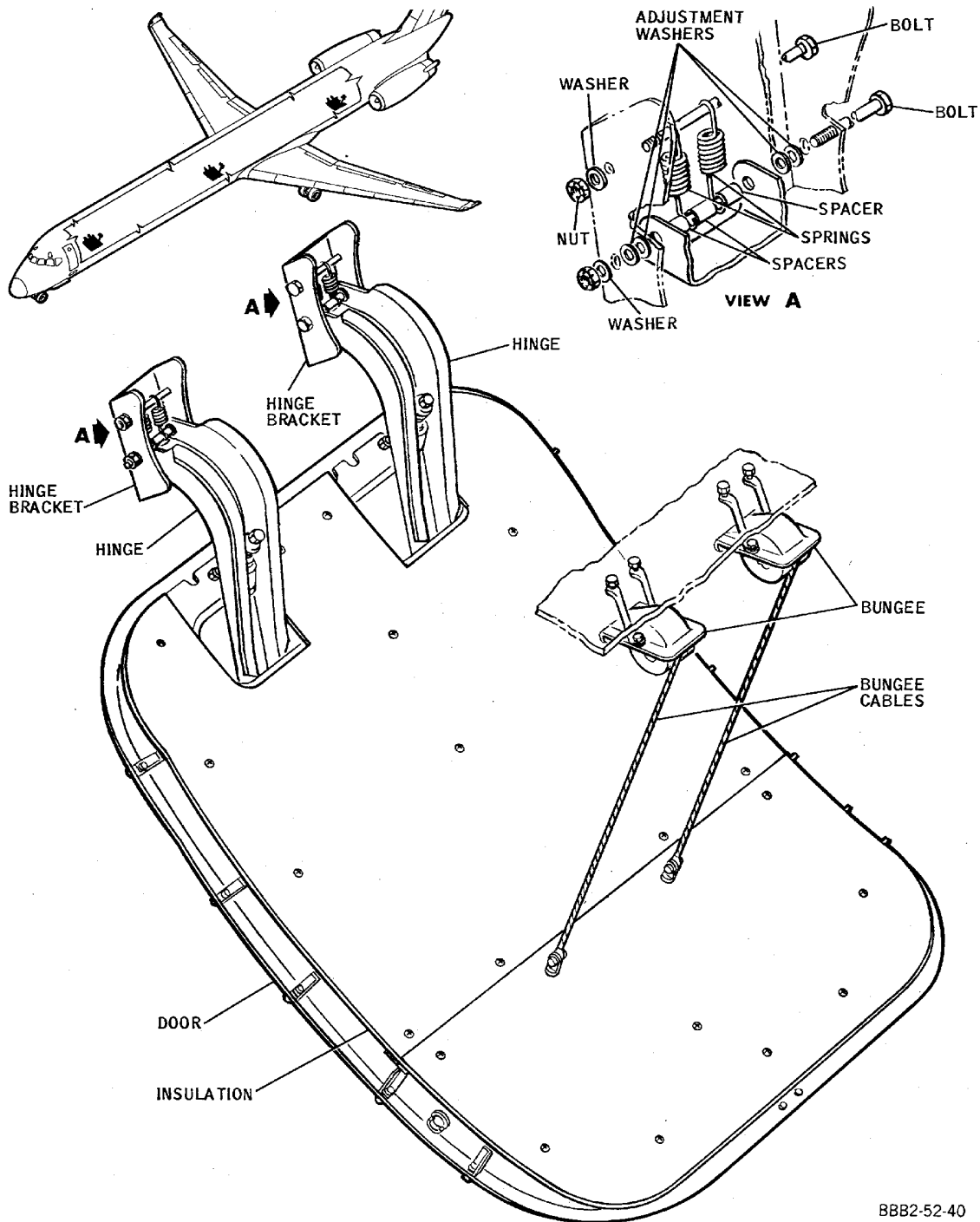
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**52-31-00**

Page 404  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-40

**Forward, Mid, and Aft Lower Cargo Compartment Doors -- Installation**  
Figure 401/52-31-00-990-801

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**52-31-00**

TP-80MM-WJE

Page 405  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practice provides adjustment/test instructions for the forward, mid, and aft lower cargo compartment doors. (Figure 501)
- B. The adjustment procedures for the lower cargo compartment doors are identical.
- C. The fore-and-aft adjustment is accomplished by adding or removing washers between the hinges and the hinge brackets on the fuselage.
- D. The vertical adjustment is accomplished by removing or adding shims between the door and the hinge fittings which attach hinges to the door.
- E. The fairing of the door is accomplished by adjusting the hinge spring bolts and the stopscrews located in the doorjamb.
- F. For procedures to adjust the latches on the cargo door barriers, (CARGO DOOR BARRIER, SUBJECT 25-52-02).

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed item:

**Table 501**

Name and Number	Manufacturer
Sealant, polysulfide aluminized, Class B-2 (DMS QPL 1819)	Advanced Chemistry & Technology Garden Grove, CA
Fish scale 0-50 pound (0-22.7 kg) pull	
Loctite 222 DPM 6082-3	Henkel Corporation, Loctite Industrial Products Division, Rocky Hill, CT
Loctite 290 DPM 6082-5	Henkel Corporation, Loctite Industrial Products Division, Rocky Hill, CT

#### 3. Adjustment/Test Forward, Mid, and Aft Lower Cargo Compartment Doors

NOTE: The numbers in parenthesis in the following text correspond to callouts in Figure 501.

##### A. Fore-and-Aft (Horizontal) Adjustment

**CAUTION:** EXERCISE CARE WHEN DISCONNECTING BUNGEE CABLES TO PREVENT POSSIBLE INJURY TO PERSONNEL AS DOOR IS NO LONGER COUNTERBALANCED WHEN BUNGEE CABLES ARE DISCONNECTED.

- (1) Disconnect bungee cables.
  - (a) To retain bungee rigging when cables are disconnected at cargo door, install a bolt or equivalent through cable end to prohibit cable end from passing through reel, thus eliminating rerigging when connecting cable to reel.

NOTE: The door can be left partially open to relieve tension on the bungee cables.

- (2) Remove springs from hinge attach bolts.

NOTE: Hinge attach bolts float in elongated holes.

- (3) Close door and check for constant gap of 5/16 inch (7.9 mm) maximum between fuselage skin and fore-and-aft edges of door skin.

EFFECTIVITY  
WJE ALL

# 52-31-00

TP-80MM-WJE

Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (4) If gap is not within tolerance, add or remove adjustment washers (1) on hinge bolts (2) between hinges (3) and hinge bracket (4) on fuselage until correct gap is obtained.
- (5) Install nuts on hinge bolts (2) and connect bungee cables.  
NOTE: If door is to be adjusted vertically leave bungee cables disconnected.
- (6) Install springs to hinge attach bolts.
- (7) Check door warning system. (PAGEBLOCK 52-70-02/201)

### B. Vertical Adjustment

- (1) Check that door is adjusted fore-and-aft.
- (2) Close door and check for constant gap of 5/16 inch (7.9 mm) maximum between fuselage skin and upper and lower edges of door skin.
- (3) If gap is not within tolerance, proceed as follows:
  - (a) Open door.

**CAUTION:** EXERCISE CARE WHEN DISCONNECTING BUNGEE CABLES TO PREVENT POSSIBLE INJURY TO PERSONNEL, SINCE DOOR IS NO LONGER COUNTERBALANCED WHEN BUNGEE CABLES ARE DISCONNECTED.

- (b) Disconnect bungee cables.
  - 1) To retain bungee rigging when cables are disconnected at cargo door, install a bolt or equivalent through cable end to prohibit cable end from passing through reel, thus eliminating requirement for rerigging when reconnecting cable to door.  
NOTE: The door can be left partially open to relieve tension on the bungee cables.
- (c) Remove screws attaching upper section of insulation to door.
- (d) Pull insulation away from door far enough to gain access to hinge fittings in door.
- (e) Remove bolts which attach hinge fittings (5) to door structure.
- (f) Add or remove shims (6) between hinge fittings (5) and door structure until correct gap is obtained.  
NOTE: Add shims to lower door. Remove shims to raise door.
- (g) Install hinge fitting bolts.
- (h) Connect and adjust bungee cables. (Paragraph 3.E.)

### C. Fair Adjustment

- (1) Check that door is adjusted fore-and-aft and vertically.
- (2) Remove sealant from stopscrew (8) access holes located on outside surface of doorjamb.
- (3) Open door.
- (4) Loosen jamnuts on stopscrews (8).
- (5) Loosen jamnuts on spring bolts (9).
  - (a) Pull the insulation on the top section of the door off to get access to the jamnuts on the spring bolts (9).
- (6) Remove cargo compartment lining covering latch pin (10) in doorjamb.
- (7) Close door.

NOTE: The steps that follow are used to adjust the door to the fuselage fair. If necessary, steps can be done again to get the proper door adjustment.

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (a) Check that hinge springs (7) are adjusted so spring bolts (9) deflect or pivot no more than 1/4 inch (6.4 mm).

**CAUTION:** THE STOP PAD ON THE DOOR MUST NOT TOUCH THE JAM NUT ON THE STOP SCREW. THIS WILL ENSURE PROPER DOOR ADJUSTMENT AND PREVENT DAMAGE TO THE STOP PAD.

- (b) Adjust each stop screw (8) to put the cargo door approximately 1/16 in. (1.6 mm) to 1/8 in. (3.2 mm) below fair with the fuselage with the aircraft not pressurized as follows:

- 1) Make sure that the total number of threads of the stop screw (8) that extend inboard from the jam nut are no less than a 1/2 thread and no more than 3 threads.
- 2) If necessary, a thinner jam nut can be used to get the correct thread extension above the door stop nut. (See IPC 53-12-00-4 or 53-12-00-5)

**NOTE:** The length of the thin jam nut is 0.080 in. (2.032 mm) less than the standard.

- 3) Make sure that there no more than two jam nuts used on a stop bolt.
- 4) If two jam nuts are used, the thin nut must be inboard (on top) and the standard nut must be outboard (on the bottom).

- (c) Adjust jamnuts on spring bolts (9) until doorstops (11) remain in contact with stopscrews (8). Tighten jamnuts.

- (d) Remove nuts (9A) from latch pins (10), in doorjamb, and adjust latch pins (10) (using nuts (10A), if applicable) to hold doorstops (11) lightly against stopscrews (8) when door is closed and latched. (Figure 501 (Sheet 4))

**NOTE:** Due to the contour of the door, all the doorstops may not contact the stopscrews until the compartment is pressurized.

- (e) Make sure that the door stopscrews (8) fall in the area of the doorstop pad (8A). (Figure 501 (Sheet 1))

- 1) It is permitted to turn the stop pad (8A) 180° to touch the adjustment stopscrews (8).

- (8) Pressurize the aircraft to 3 psi (21 kPa) to 4 psi (28 kPa). (GENERAL, SUBJECT 21-00-00, page 1)

- (9) With the aircraft pressurized, check the fair of the door as follows:

- (a) Forward and aft edges of door are faired to maximum acceptable tolerances, average of three locations per edge. (Figure 502)
- (b) Upper and lower edges of door are faired to maximum acceptable tolerances, average of two locations per edge. (Figure 502)
- (c) If necessary, to properly fair the door, depressurize the aircraft and adjust the applicable stop screws (8) again. Pressurize the aircraft and check door fair again.

- (10) Depressurize aircraft. (GENERAL, SUBJECT 21-00-00, page 1)

- (11) Open door.

- (a) Do a check again to make sure that the door stopscrews (8) fall in the area of the doorstop pad (8A). (Figure 501 (Sheet 1))

- 1) It is permitted to turn the stop pad (8A) 180° to touch the adjustment stopscrews (8).

- (12) Hold stopscrews (8) and torque the jam nuts for each stop screw (8) as follows:

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (a) If a thin jam nut, torque the jam nut 60 in-lb (6.78 N·m) to 84 in-lb (9.49 N·m).

NOTE: The length of the thin jam nut is 0.080 in. (2.032 mm) less than the standard.

NOTE: If two threads or less are exposed, the locking feature of the set screw might not protrude through the thin jam nut. If this occurs, use Loctite 222 (DPM 6082-3) to secure the jam nut. Remove the jam nut and apply a small amount of Loctite 222 (DPM 6082-3) to the inside of threads of the jam nut, then torque the jam nut 60 in-lb (6.78 N·m) to 84 in-lb (9.49 N·m). For convenience, apply one drop of Loctite 290 (DPM 6082-5) to an installed jam nut at the threads.

- (b) If a standard jam nut, torque the jam nut 100 in-lb (11.30 N·m) to 140 in-lb (15.82 N·m).

- (13) Tape face of all doorstops (11).

- (14) Close and lock door.

- (15) Pressurize fuselage to 3 to 4 psi (20 to 28 kPa). (GENERAL, SUBJECT 21-00-00, page 1)

- (16) Depressurize fuselage. (GENERAL, SUBJECT 21-00-00, page 1)

- (17) Open the door, and check that stopscrews (8) equally contacted face of all doorstops (11) when fuselage was pressurized. They must be within limits shown in (Figure 501 (Sheet 1))

- (a) Do a small adjustment of the stopscrews (8) to make sure that they touch equally on all the stop pads (8A).

NOTE: A half-turn clockwise of the stopscrew (8) is equal to about 0.020 in. (0.508 mm) movement of stopscrew (8).

- (18) Make sure that the total number of threads of the stop screw (8) that extend inboard from the jam nut are no less than a 1/2 thread and no more than 3 threads.

- (19) Remove tape from face of all doorstops (11).

- (20) Seal stopscrew access holes using sealant, Pro-Seal 735.

- (21) Install cargo compartment lining.

- (22) Install door insulation attach screws.

NOTE: If edges of insulation do not adhere to door structure, refer to FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - REMOVAL/INSTALLATION, PAGEBLOCK 52-31-00/401.

### D. Hold-Open Latch Adjustment

- (1) Open door.

- (2) Push door to full up position.

- (3) Rotate door handle to closed position.

- (4) Raise door until clip (12) on edge of door contacts latch fitting (13).

- (5) Check clearance between door structure and ceiling.

- (6) Add or remove shims (14) between latch support (15) and floor structure until door clears ceiling at closest point by 1/16 inch (1.6 mm).

- (7) With door latch (16) resting on latch fitting (13), add or remove shims (17) between latch support (15) and latch fitting (13) as required to position edge of latch fitting (13) 1/8(±1/32) inch (3.2(±0.79)mm) from face of latch.

- (8) Repeat Paragraph 3.D.(4).

NOTE: Due to the angle of the latch fitting and the latch, the clearance between the door and ceiling may be changed when the latch fitting is shimmed.



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE ALL POST DC9-52-201

- (9) Make sure the clearance between the bumper (18) and cargo door is 0.01 to 0.13 inch (0.254 to 3.302 mm). (Figure 503)

NOTE: There are two bumpers for each cargo door.

- (a) If necessary, loosen the two bolts (19) to adjust the bumper (18).  
(b) Tighten the two bolts (19).

### WJE ALL

#### E. Bungee Adjustment

- (1) Adjust bungee cables and tension of reels to meet following conditions:

NOTE: Adjustment of cables and reel tension is accomplished by removing cable attach bolts and by wrapping cables around reels an additional turn or turns as required.

- (a) On aircraft before incorporation of SB 52-141, raise door to full open position, then gradually lower toward close position. Adjustment shall be such that door stops and remains at maximum of 15 inches from close position.  
(b) On aircraft with SB 52-141 incorporated, lower door gradually from open toward closed position. Adjust bungee so door remains open a minimum of 2 inches measured at door switch location.  
(c) Check that tension load is divided equally between reels acting on common door.  
    1) Tension load is checked, with door closed and latched, by pulling cables sideways until reels bottom. Reels shall have same travel within 1/2 turn.  
(d) Check that reels have minimum of one full turn before bottoming with door closed and latched.

#### F. Door handle Adjustment

- (1) Close door.  
(2) Adjust stop in door handle recess until handle fairs with door.

NOTE: Closing and opening handle load shall not exceed 40 pounds (18 kg) maximum, using fish scale 1 1/2 inches (38.1 mm) from free end of handle.

### WJE 404, 406-408, 410, 414, 417, 419, 421, 423, 863-866, 875-879, 886, 887, 893

#### G. Door Centering Guide Adjustment

- (1) Make certain that door is completely adjusted.  
(2) Make certain that proximity switch is adjusted. (PAGEBLOCK 52-70-02/201)  
(3) Adjust guide on plate for 0.0 to 0.010 inch (0.0 to 0.254 mm) gap. Do not preload against door.

NOTE: Each serration on guide and plate gives 0.0357 inch (0.907 mm) adjustment.

### WJE 401-403, 405, 409, 411, 412, 415, 416, 418, 420, 422, 424-427, 429, 861, 862, 868, 869, 871-874, 880, 881, 883, 884, 891, 892; with SB 52-165 incorp.

#### H. Door Centering Guide Adjustment

- (1) Make certain that door is completely adjusted.  
(2) Make certain that proximity switch is adjusted. (PAGEBLOCK 52-70-02/201)  
(3) Adjust guide on plate for 0.0 to 0.010 inch (0.0 to 0.254 mm) gap. Do not preload against door.

NOTE: Each serration on guide and plate gives 0.0357 inch (0.907 mm) adjustment.

### WJE ALL

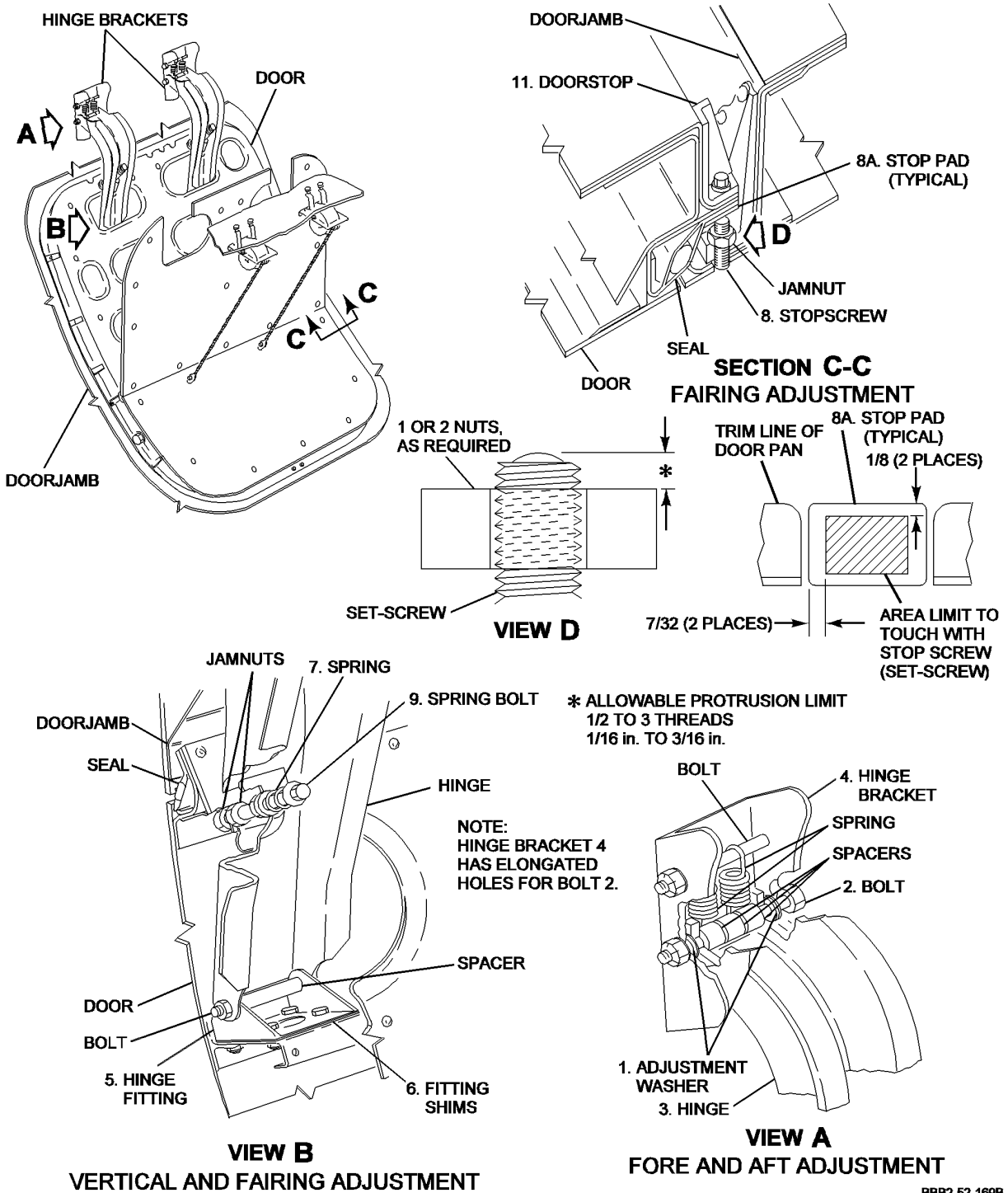
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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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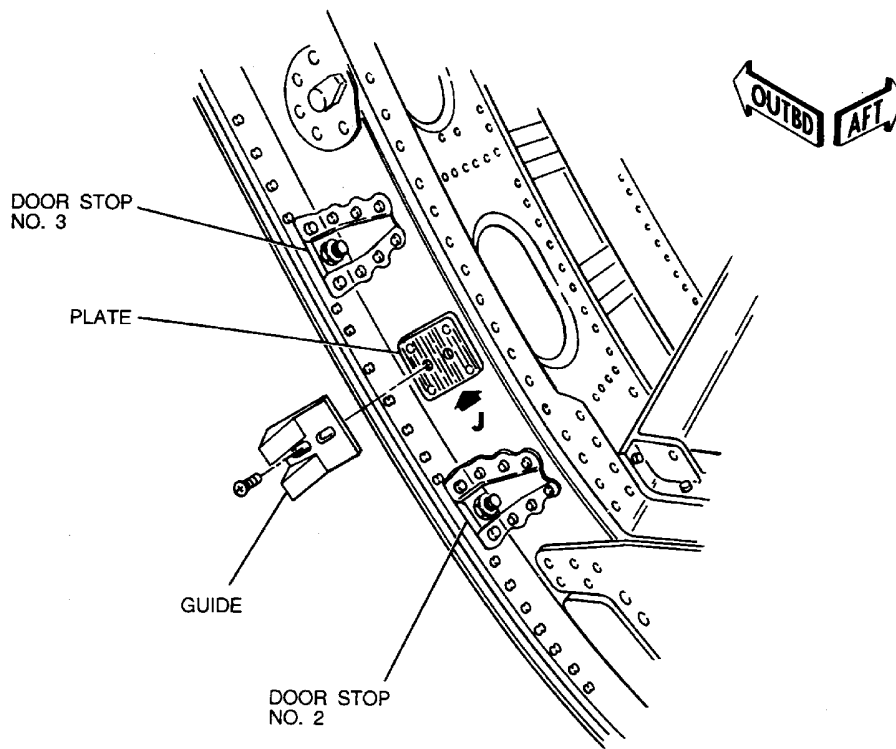
**Forward, Mid, and Aft Lower Cargo Compartment Doors -- Adjustment  
Figure 501/52-31-00-990-803 (Sheet 1 of 4)**

EFFECTIVITY  
WJE ALL

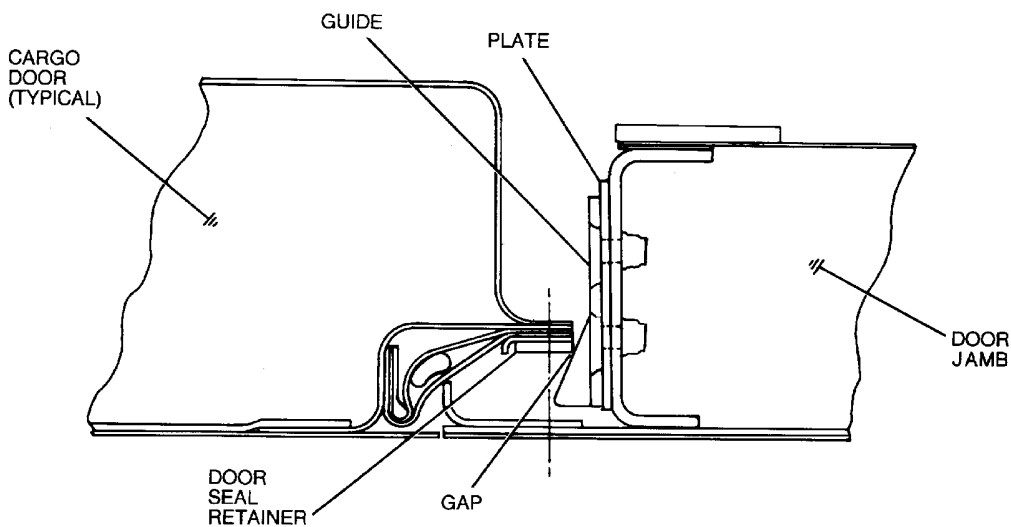
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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**VIEW H**  
CARGO DOOR  
AFT JAMB  
(TYPICAL)



**VIEW J**

BBB2-52-170

**Forward, Mid, and Aft Lower Cargo Compartment Doors -- Adjustment**  
Figure 501/52-31-00-990-803 (Sheet 2 of 4)

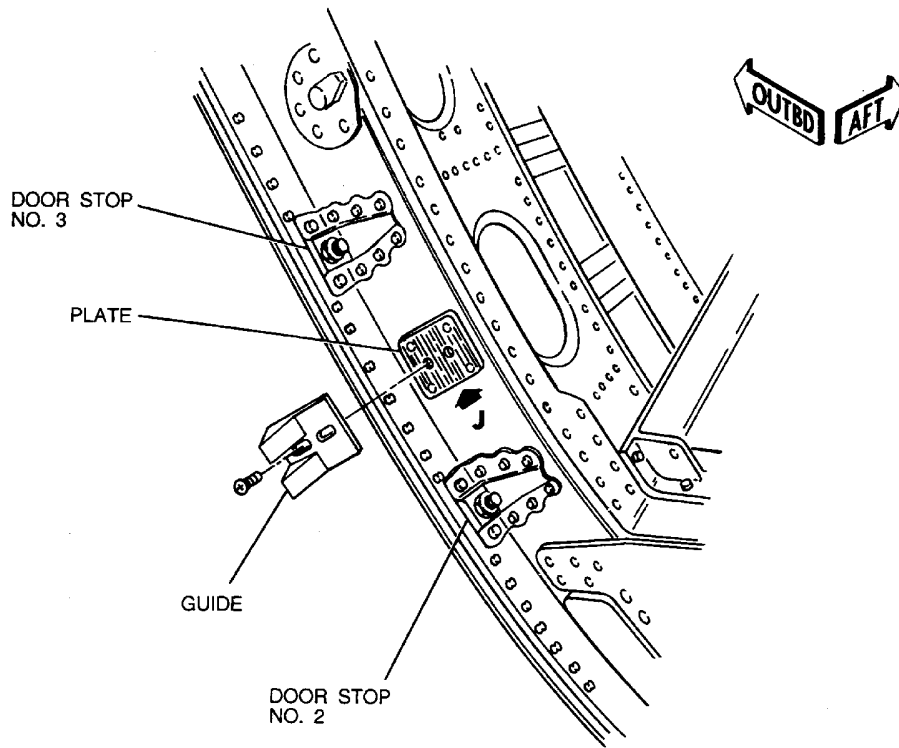
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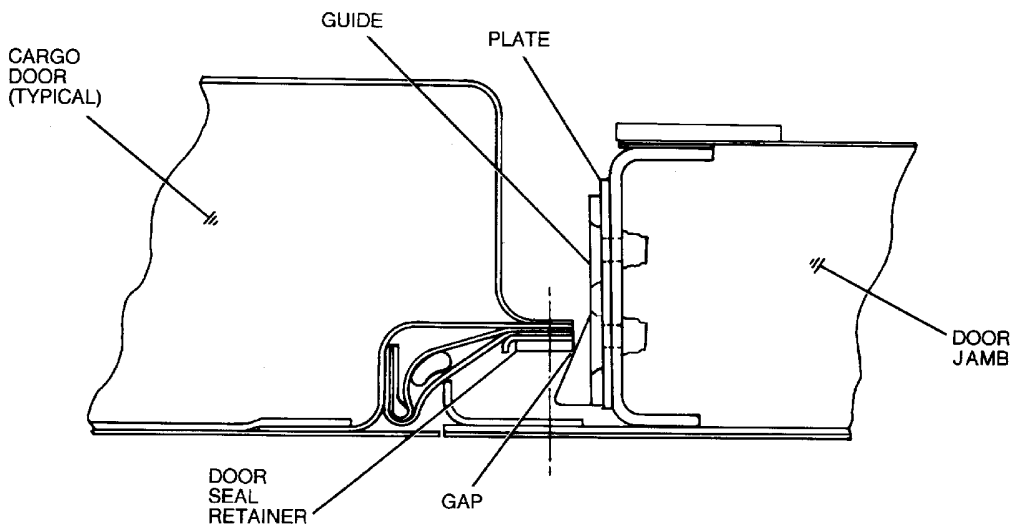
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Page 507  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**VIEW H  
CARGO DOOR  
AFT JAMB  
(TYPICAL)**



**VIEW J**

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**Forward, Mid, and Aft Lower Cargo Compartment Doors -- Adjustment  
Figure 501/52-31-00-990-803 (Sheet 3 of 4)**

**EFFECTIVITY**

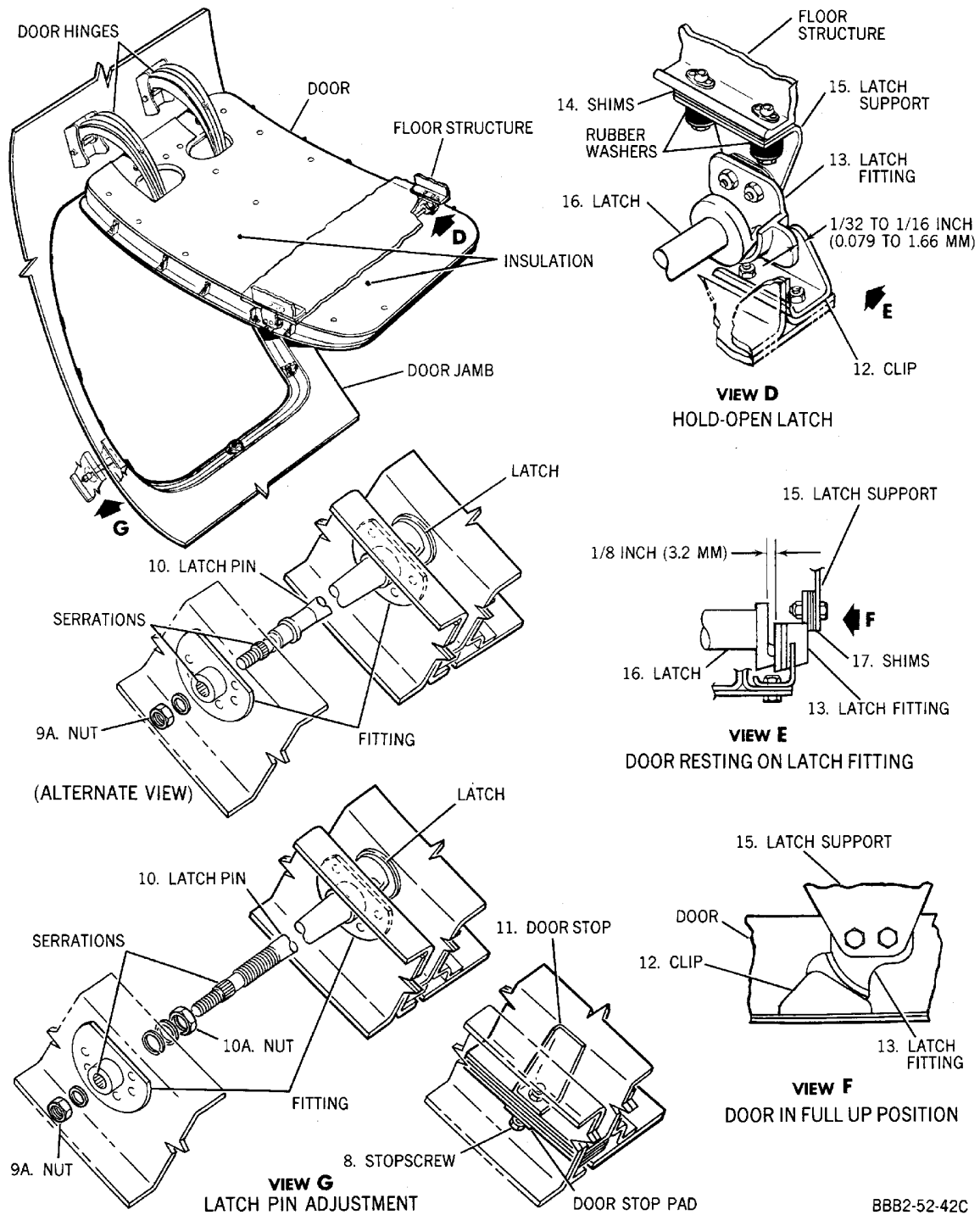
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TP-80MM-WJE

**52-31-00**

Page 508  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Forward, Mid, and Aft Lower Cargo Compartment Doors -- Adjustment  
Figure 501/52-31-00-990-803 (Sheet 4 of 4)**

EFFECTIVITY  
WJE ALL

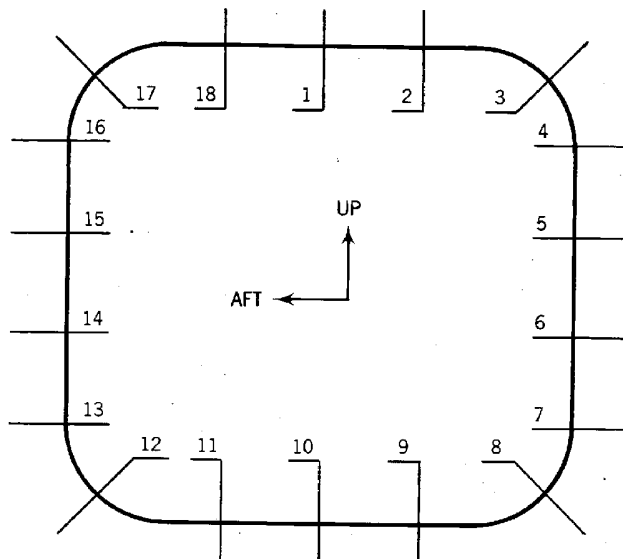
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## MD-80 AIRCRAFT MAINTENANCE MANUAL



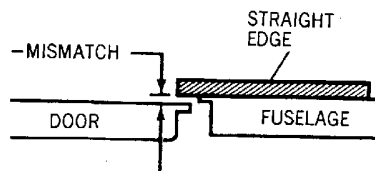
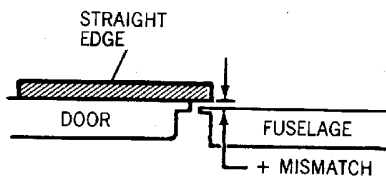
**FORWARD FUSELAGE CARGO DOOR  
(PRESSURIZED CONDITION)**

LOCATIONS	MAX. ACCEPTABLE MISMATCH
1, 2, 3, 17, 18	$\pm 0.070$ INCH ( $\pm 1.78$ MM)
4, 5, 6, 7, 13 14, 15, 16	$\pm 0.045$ INCH ( $\pm 1.14$ MM)
8, 9, 10, 11, 12	+0.035 INCH (+0.89 MM) -0.205 INCH (-5.21 MM)

**CENTER AND AFT FUSELAGE CARGO DOORS  
(PRESSURIZED CONDITION)**

LOCATIONS	MAX. ACCEPTABLE MISMATCH
1, 2, 18	* -0.195 INCH (-4.95 MM) +0.00 INCH (+0.00 MM)
3, 17	$\pm 0.070$ INCH ( $\pm 1.78$ MM)
4, 5, 6, 14 15, 16	$\pm 0.045$ INCH ( $\pm 1.14$ MM)
7, 8, 12, 13	* -0.108 INCH (-2.74 MM) +0.00 INCH (+0.00 MM)
9, 10, 11	* -0.293 INCH (-7.44 MM) +0.00 INCH (+0.00 MM)

\* INCLUDES NOMINAL DOUBLER THICKNESS - MISMATCHES SHOULD BE CHECKED ON FLAT (NOT TAPERED) SURFACE OF DOUBLERS.



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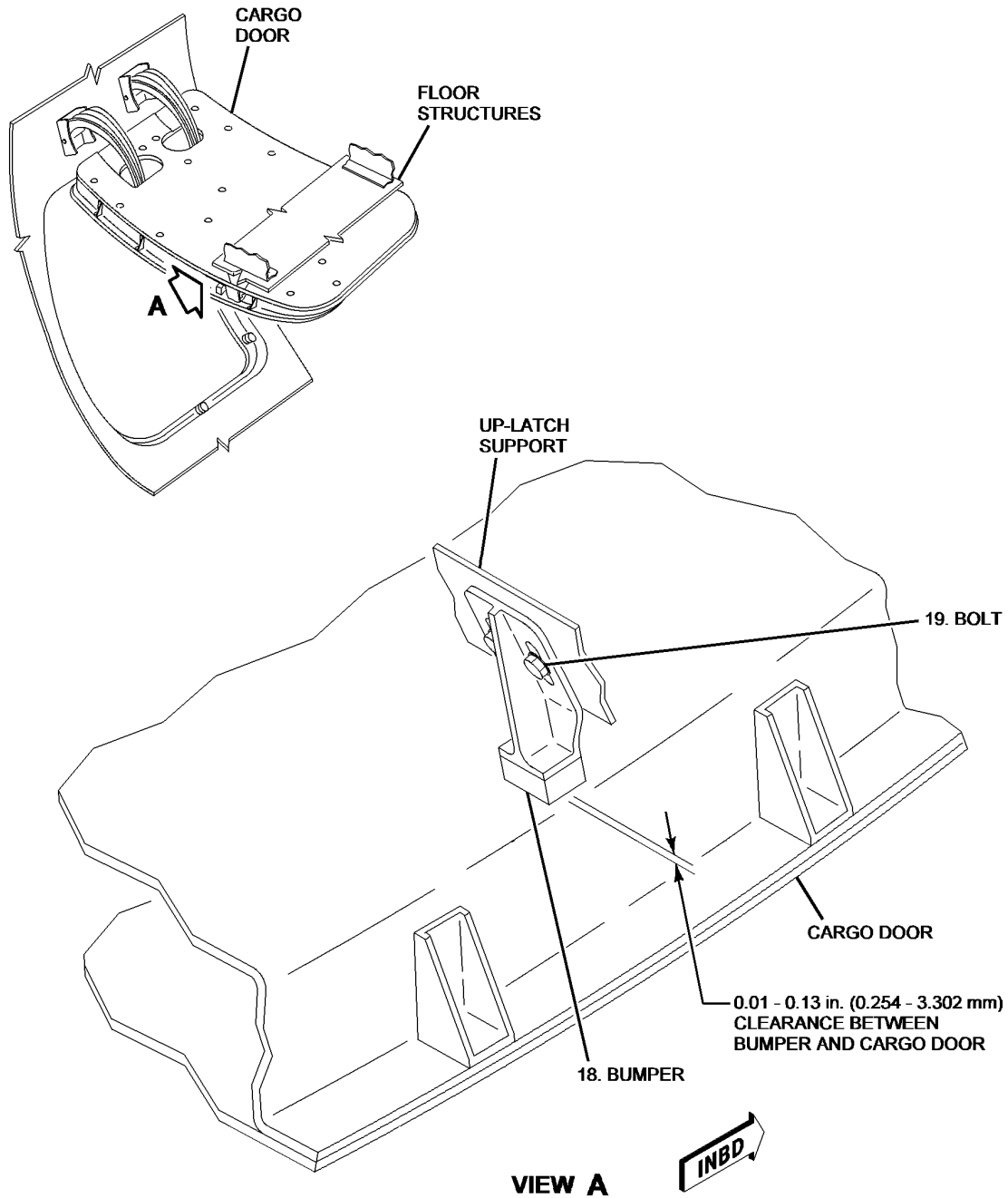
**Forward, Mid, and Aft Lower Cargo Compartment Doors -- Fair Adjustment  
Figure 502/52-31-00-990-804**

EFFECTIVITY  
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TP-80MM-WJE

**52-31-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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FWD, Mid, and Aft Lower Cargo Compartment Doors -- Bumper Adjustment  
Figure 503/52-31-00-990-806

EFFECTIVITY  
WJE ALL POST DC9-52-201

TP-80MM-WJE

## 52-31-00

Page 511  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST

1. **General**

A. This procedure contains MSG-3 task card data.

**TASK 52-31-00-720-801**

2. **Functional Check of the Cargo Door Stop and Set Screw Assemblies (Torque Door Stop Set Screws and Locknuts)**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
52-31-00 P/B 501	FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST

**B. Consumable Materials**

NOTE: Equivalent replacements are permitted for the items that follow.

NOTE: It is possible that some materials in the Consumable Materials chart cannot be used for some or all of the necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Reference	Description	Specification
A60127	Sealant - Polysulfide, Aluminized	DMS 1819
B60104	Solvent - Sealant Remover	DPM 6410
G60085	Cloth - Low Lint	MIL-C-24671

**C. Prepare for Functional Check of the Cargo Door Stop and Set Screws Assemblies**

SUBTASK 52-31-00-010-001

(1) Open the cargo door.

SUBTASK 52-31-00-110-001

(2) Find each of the door stops and remove the sealant from the set screw access holes on the doorjamb.

**WARNING:** SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

EFFECTIVITY  
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TP-80MM-WJE

**52-31-00**

Config 1  
Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (a) Use a low lint cloth, G60085 moist with sealant remover solvent, B60104, and clean the set screws and the set screw access holes.

### D. Functional Check of the Cargo Door Stop and Set Screw Assemblies

SUBTASK 52-31-00-720-001

(1) Do a functional check of the door stop and set screw assemblies.

- (a) Loosen the locknuts on each of the set screws.
- (b) Apply approximately 2 in-lb (0.23 N-m) torque to each set screw.
- 1) If no movement is noticed, proceed to the next step.
  - 2) If movement is noticed, threads are worn-out and set screw should be replaced.

NOTE: Adjust door fair if set screw is replaced. (FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST, PAGEBLOCK 52-31-00/501)

(c) Check the torque on the locknut.

- 1) Turn the locknut on the set screw. You should not be able to turn the locknut without resistance to flat portion of the door being felt.
  - a) If resistance is felt, proceed to the next step.
  - b) If no resistance is felt, locknut has lost torque value and should be replaced.

NOTE: Adjust door fair if locknut is replaced. (FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST, PAGEBLOCK 52-31-00/501)

(d) Torque each of the locknuts. (FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - ADJUSTMENT/TEST, PAGEBLOCK 52-31-00/501)

### E. Job Close-up

SUBTASK 52-31-00-390-001

**WARNING:** SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-31-00**

Config 1  
Page 502  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(1) Use a low lint cloth moist with sealant remover solvent and clean the set screws and the set screw access holes.

**WARNING:** POLYSULFIDE ALUMINIZED SEALANT IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN POLYSULFIDE ALUMINIZED SEALANT IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET POLYSULFIDE ALUMINIZED SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(2) Seal the exterior holes with aluminized polysulfide sealant, A60127.

SUBTASK 52-31-00-942-001

(3) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-31-00**

Config 1  
Page 503  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOORS - CHECK

**1. General**

A. This maintenance practice provides check instructions for the forward, mid, and aft lower cargo compartment doors.

**2. Equipment and Materials**

NOTE: Equivalent substitutes may be used instead of the following listed items:

**Table 601**

Name and Number	Manufacturer
Micrometer depth gage, 445DZ-6RL, 0 to 6 in. range, 6 in. base (445MDZ-150RL, 0 to 150 mm range, 150 mm base)	L.S. Starrett Co. Athol, MA

**3. Check Forward, Mid, and Aft Lower Cargo Compartment Doors**

A. Check Door

- (1) Check that pressure seal is not worn or damaged.
- (2) Check that edges of door and doorjamb are free of cracks, burrs, and nicks that could damage door seal.
- (3) On aircraft before incorporation of SB 52-141, check that bungees hold door at maximum of 15 inches (381 mm) from door closed position, when lowered slowly from full open position.
- (4) On aircraft with SB 52-141 incorporated, check that bungees hold door a minimum of 2 inches (51 mm) measured at door switch location, when lowered slowly from full open position.
- (5) Check that load is divided equally between bungee reels by pulling cables sideways until reels bottom. Reels must have same travel within 1/2 turn.
- (6) Check that reels have a minimum of one full turn before bottoming in door latched closed position.
- (7) Check bungee cable for fraying.
- (8) Check that door fairs with fuselage skin.
- (9) Check that gap between door skin and fuselage skin is constant and does not exceed 5/16 inch (7.9 mm).
- (10) Check that latch mechanism locks door securely in closed position.
- (11) Check that hold-open hook holds door securely in the open position.
- (12) Check that door handle fairs with door.
- (13) Check that warning indication on annunciator panel comes on when door is open and goes off when door is closed. (PAGEBLOCK 52-70-02/201)
- (14) Check door skin contour limits with aircraft pressurized. (Figure 601)

NOTE: Locate tool so probe is centered on horizontal beam or vertical intercostal.

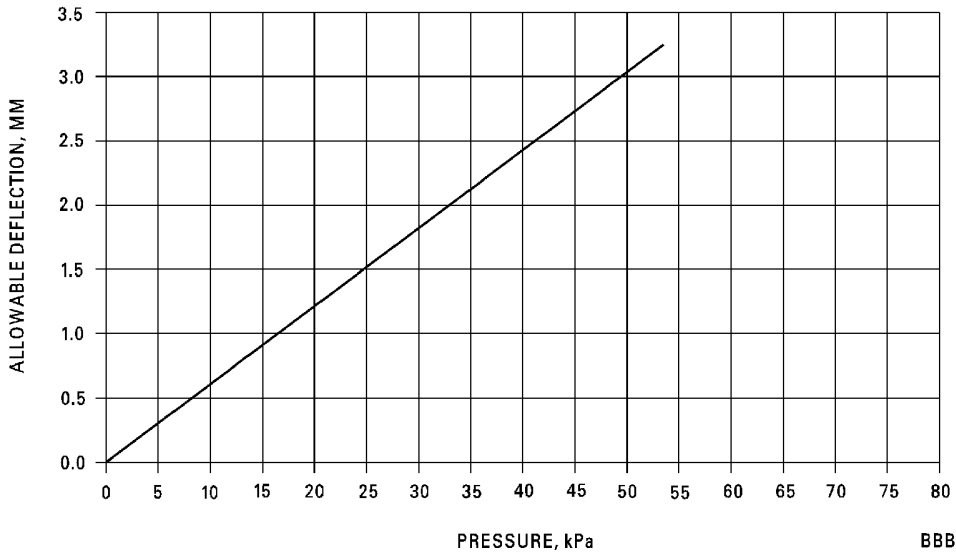
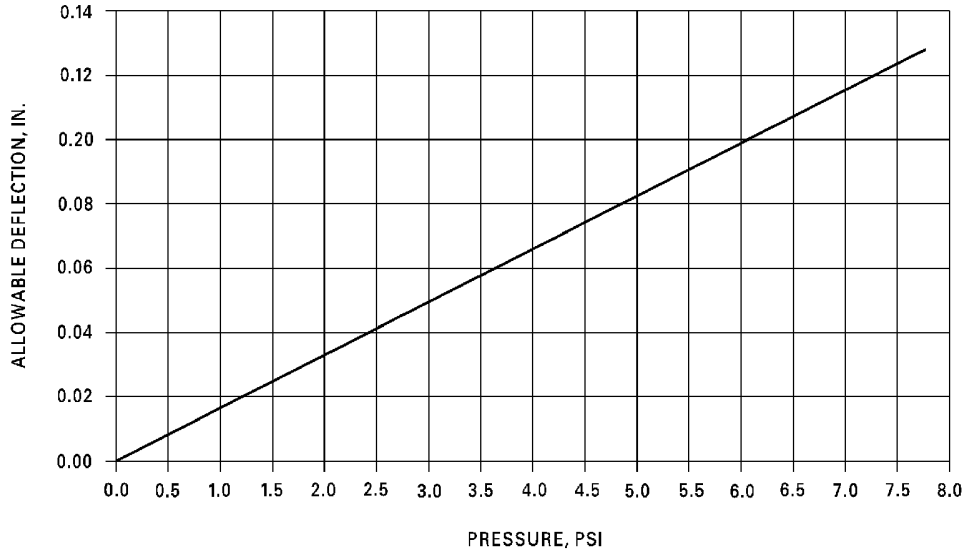
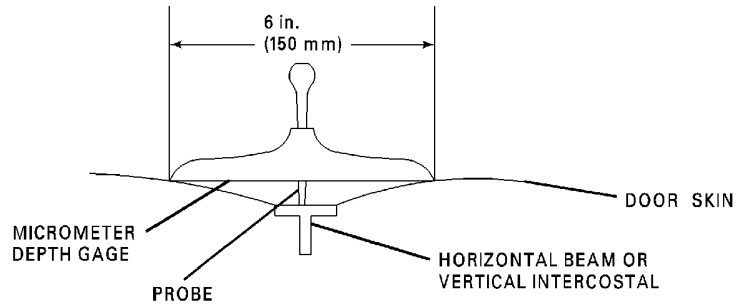
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Page 601  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



CAG(IGDS)

PRESSURE, kPa

BBB2-52-186

**Cargo Skin Contour Limits (Pressurized)  
Figure 601/52-31-00-990-802**

EFFECTIVITY  
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TP-80MM-WJE

**52-31-00**

Page 602  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOOR SEALS - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the forward, mid, and aft lower compartment door seals. (Figure 201)
- B. The removal/installation procedures for the forward, mid, and aft lower cargo compartment door seals are identical. The seal can be removed from the doors with the door installed on the aircraft; however, it is extremely difficult to install the seal without removing the door.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
"C" Clamps, small	
Adhesive, quick-set MIL-A-46050	

#### 3. Removal/Installation Forward, Mid, and Aft Lower Cargo Compartment Door Seals

##### A. Remove Seal

- (1) Remove door. (PAGEBLOCK 52-31-00/401)

**CAUTION:** FELT PAD OR SIMILAR MATERIAL SHOULD BE USED TO PROTECT FINISH ON OUTBOARD SIDE OF DOOR.

- (2) Position door on suitable support with inboard side up.
- (3) Remove doorstop pads.
- (4) Remove outer retainers.

NOTE: Retainers should be marked for identification to facilitate installation.

- (5) Fold seal back and remove sponge rubber filler.
- (6) Remove inner retainers.

NOTE: Retainers should be identified to facilitate installation.

- (7) Pull seal away from door.

##### B. Install Seal

- (1) Check that doorframe in area where seal is to be installed is clean and free of chips and burrs which may cause wear or damage to seal.
- (2) Check seal retainers for nicks and burrs which may cause wear or damage to seal.
- (3) Place seals in position with outer seal against door surface and with stitched edge toward inside face of door.
- (4) If original seal is being installed, proceed with Paragraph 3.B.(6). If new seal is being installed, proceed with Paragraph 3.B.(5).

NOTE: If new seal retainers are to be installed, check that holes in retainers will align with holes in doorframe, and that retainers will lay flush with door structure.

EFFECTIVITY  
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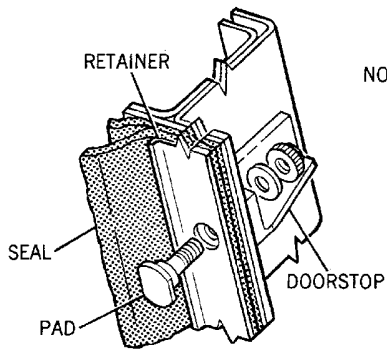
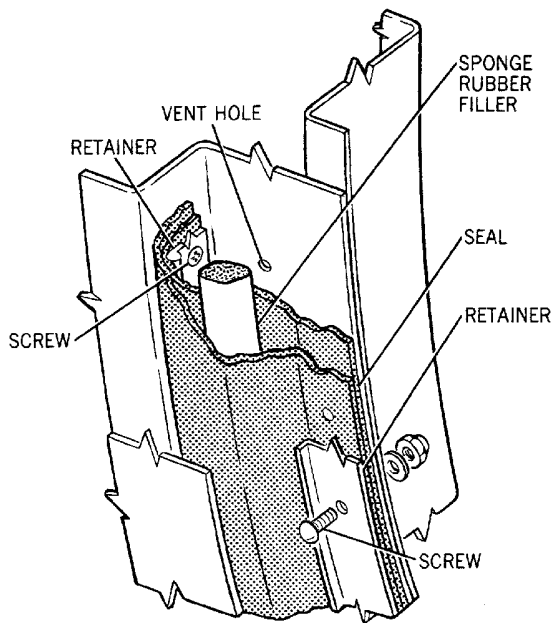
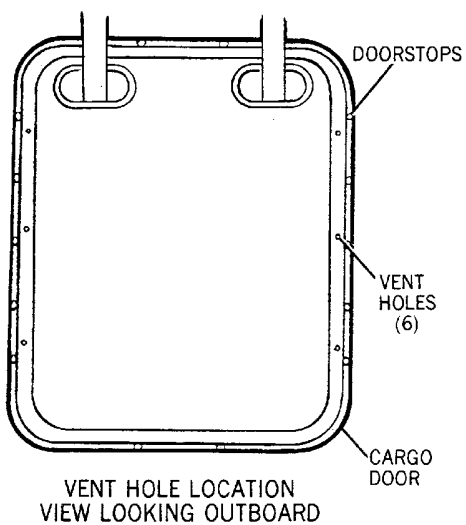
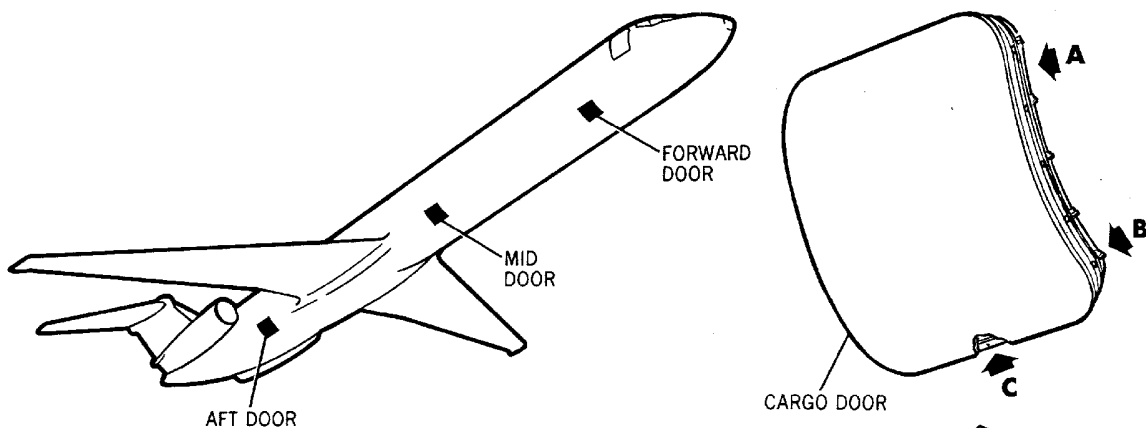
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Page 201  
Feb 01/2015

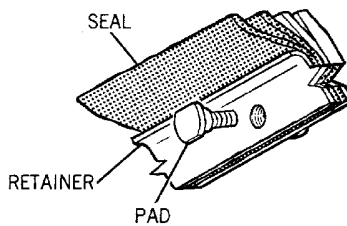
## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (5) Install new seal as follows:
- (a) Lay inner retainer in position along one edge of door.  
NOTE: Any edge may be used as a starting point.
  - (b) Using ice pick, or other suitable tool, locate nuts in door corresponding to hole at ends of retainer and pin retainer in place. Allow seal to extend 1/8 inch (3.2 mm) beyond retainer.
  - (c) Cut holes in seals at second hole from each end of retainer and install attach screws.
  - (d) Locate remaining nuts and pin retainer in place, making certain that seal is not stretched or bunched up between holes.
  - (e) Cut hole in seals and install attach screws, making certain that pins are not removed until adjacent screw has been installed.
  - (f) Repeat Paragraph 3.B.(5)(a) through Paragraph 3.B.(5)(e) for remaining retainers. Work seal evenly around corners, being careful not to stretch, wrinkle, or allow bulges in seal.
  - (g) Install sponge rubber filler between inner and outer seals.
  - (h) Pull seals into place, position retainers on seals, and clamp in place with small C-clamps.
    - (i) When all retainers are in place, check seals for wrinkles and bulges.
    - (j) Using ice pick to locate holes, adjust retainers so that holes in door align with holes in retainers.
  - (k) Install screws which attach retainers to door.
    - (l) Cut holes in seals for doorstep pads, and install pads.
  - (m) Trim edge of seals flush with edge of retainers.
  - (n) Install door. (PAGEBLOCK 52-31-00/401)
- (6) Install original seal as follows:
- (a) Position retainers on seals and install attach screws.
  - (b) When all retainers are in place, check for wrinkles and bulges.
  - (c) Pull seals into position, lay retainers on seals, and using ice pick to locate holes, install attach screws.  
NOTE: Small C-clamps may be used to hold seals and retainers in position on doorframe.
  - (d) Install doorstep pads.
  - (e) Install door. (PAGEBLOCK 52-31-00/401)

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



NOTE: MAKE CERTAIN VENT HOLES ARE CLEAR BEFORE INSTALLING SEAL



BB82-52-44

**Forward, Mid, and Aft Lower Cargo Compartment Door Seals -- Installation  
Figure 201/52-31-01-990-801**

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**52-31-01**

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 4. Approved Repairs

#### A. Repair Cargo Door Seal

- (1) If seal separates at butt joint, repair as follows:
  - (a) Evenly cut approximately 1/8 inch (3.125 mm) off each face of joint, or enough to remove old cement.
  - (b) Apply adhesive to both freshly cut faces. Hold together for minimum of 30 seconds.
  - (c) Allow to cure at 60°F (15.6°C) or above for 15 minutes before handling. Full cure will be obtained in 24 hours.

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TP-80MM-WJE

**52-31-01**

Page 204  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD, MID, AND AFT LOWER CARGO COMPARTMENT DOOR HINGES - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation for the forward, mid, and aft lower cargo compartment door hinges. (Figure 201).
- B. The removal/installation procedures for the forward, mid, and aft lower cargo compartment door hinges are identical.

#### 2. Removal/Installation Forward, Mid, and Aft Lower Cargo Compartment Door Hinges

- A. Remove Hinge
  - (1) Remove door. (PAGEBLOCK 52-31-00/401)
  - (2) Remove screws attaching upper section of insulation to door.
  - (3) Pull insulation away from door to gain access to hinge attach bolt.
  - (4) Remove nut securing spring bolt to door.
  - (5) Remove hinge attach bolt from fitting in door. Retain spacer.
- B. Install Hinge
  - (1) Check for  $1/4(\pm 1/32)$  inch (6.4( $\pm 0.79$ ) mm) deflection of spring on spring bolt.
  - (2) Insert hinge spring bolt into bolt hole in door, and install but do not tighten nut.  
NOTE: Spring bolt must be adjusted after door is installed.
  - (3) Position hinge in fitting in door and install spacer and hinge bolt.
  - (4) Position insulation on door and install attach screws.  
NOTE: If edges of insulation do not adhere to door structure, refer to PAGEBLOCK 52-31-00/401.
  - (5) Install door. (PAGEBLOCK 52-31-00/401)

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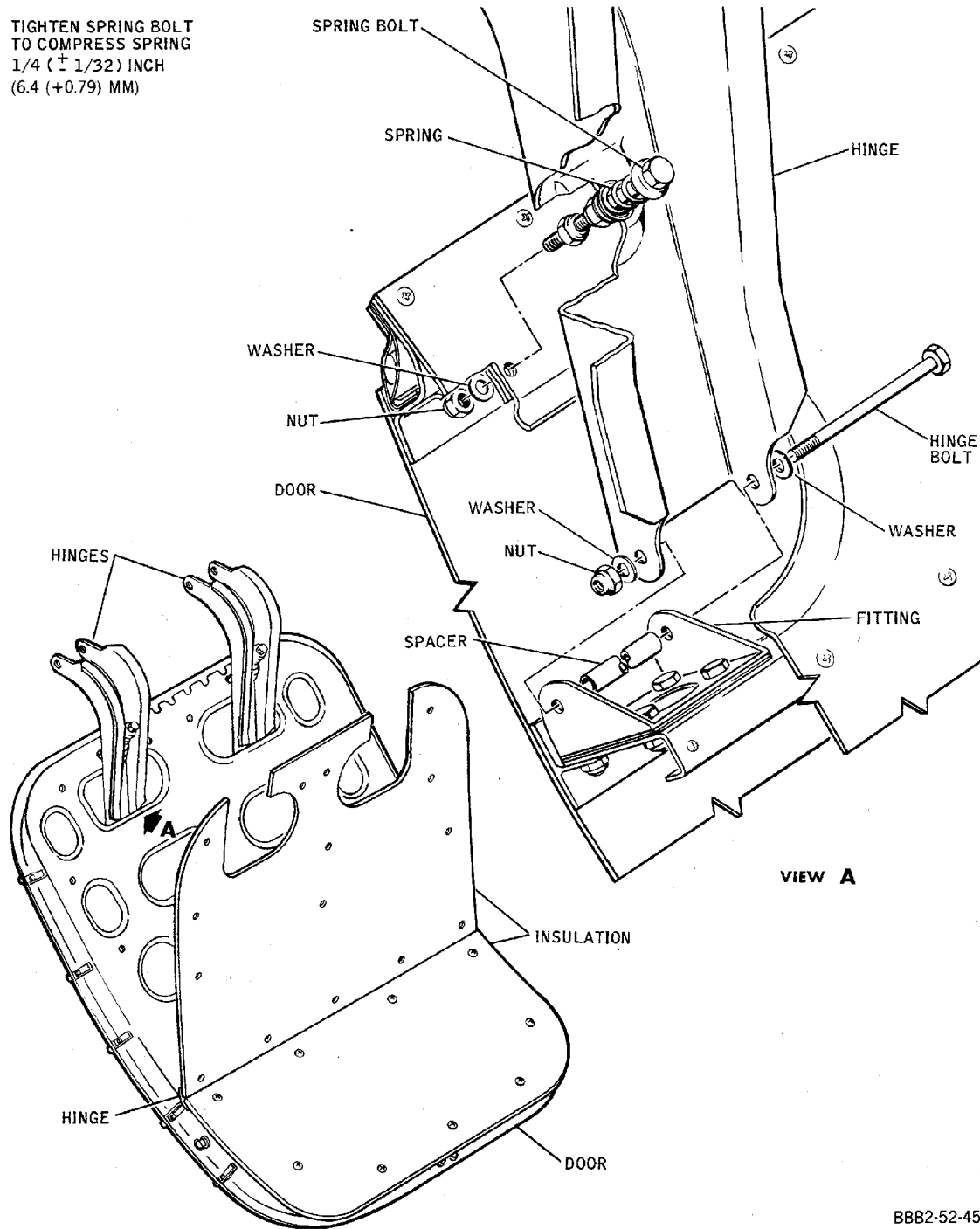
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Page 201  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

TIGHTEN SPRING BOLT  
TO COMPRESS SPRING  
1/4 (± 1/32) INCH  
(6.4 (+0.79) MM)



BBB2-52-45

**Forward and Aft Lower Cargo Compartment Door Hinges -- Installation  
Figure 201/52-31-02-990-801**

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**52-31-02**

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**  
**SERVICE - DESCRIPTION AND OPERATION**

**1. General**

- A. Service doors are provided for the passenger compartment, the electrical/electronics compartment, the forward accessory compartment, and the APU compartment. Plug-type doors are provided for the pressurized compartments.

**2. Forward Service Door**

A. Description

- (1) Forward Service Door - The forward service door is located at the forward end of the passenger compartment on the right side. The door is attached to the fuselage by hinges. The shape and installation of the hinges permit inward, forward, and outward movement of the door. The door can be opened from either inside or outside the aircraft by handles attached to a common shaft, which actuates the opening mechanism. The door is equipped with pressure and weather seals. A window is installed in the upper section of the door to permit viewing the area adjacent to the door for obstructions, before opening the door. (Figure 1) (Figure 2) (Figure 3) (Figure 4) (Figure 5)
- (a) The forward service door consists of beams, frames, pan stiffener covered by an outer skin, and an inner lining. The door is attached to the fuselage by two hinges. The shape and installation of the hinges permit inward, forward, and outward movement of the door. The hinges are attached to the door by a torque tube and to the doorjamb by hinge pins.
- (b) A pressure seal is installed along the outer edges of the door. The seal consists of a silicone rubber outer seal, a synthetic rubber inner seal, and a sponge rubber filler. The seals are attached to the doorframe by retainers secured to the doorframe by screws. The sponge rubber filler is molded to fit between the inner and outer seals, and is held in place by the seals. When the door is closed the seal contacts a seal depressor on the doorjamb.
- (c) A window is installed in the upper section of the door to allow viewing the area adjacent to the door for obstructions before opening the door. The window installation consists of two panes of glass, with an airspace between the panes to prevent fogging.
- (d) The door can be opened from either inside or outside the aircraft by handles attached to a common shaft. Rotating either handle actuates the door opening and seal retracting mechanism.
- (e) A lining is attached to the inner surface of the door. The lining consists of formed plastic panels, insulation batts of glass fiber, hardwood blocking, and a sound barrier installed along the outer edges of the lining. A window installed in the upper panel of the lining mates with the window installed in the door structure. The upper panel of the lining covers the main components of the door mechanism and can be removed without opening the door.
- (f) A door warning proximity switch is installed in the forward section of the doorjamb. A target, attached to the door, actuates the switch. When the door is open, the switch completes a ground circuit to the forward galley door open indicating light on the annunciator light panel, and the light will come on. For a complete description and operation of door warning, DOOR WARNING, SUBJECT 52-70-00.

B. Operation

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TP-80MM-WJE

**52-40-00**

Page 1  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** DO NOT ATTEMPT TO OPEN SERVICE DOOR WHEN PASSENGER COMPARTMENT IS PRESSURIZED.

**CAUTION:** MAKE CERTAIN THAT HOLD-OPEN HOOK IS ENGAGED TO PREVENT POSSIBLE DAMAGE BY WIND GUSTS SLAMMING DOOR AGAINST SIDE OF FUSELAGE OR DOORJAMB.

**CAUTION:** BEFORE OPENING DOOR FROM INSIDE, LOOK THROUGH DOOR WINDOW OF AREA ADJACENT TO DOOR FOR OBSTRUCTIONS.

- (1) To open the door, rotate the inner handle counterclockwise (outer handle clockwise) until rotation stops (approximately 135 degrees)(2.36 rad). As the handle is rotated, the door will move inward and forward, and the upper and lower seal sections will retract. When the door handle reaches full travel, the spring-loaded bayonet roller engages a detent on the door mechanism bellcrank and locks the door handle. The door is then pushed outward through the door opening and to the full open position against the outside of the fuselage. As the door is rotated, the hold-open hook is rotated into position to engage the fitting installed in the side of the fuselage. When the door is full open, the hook is engaged and the door is held in the open position.
- (2) To close the door, pull on the hook release handle, located on the hinged edge of the door, to release the hold-open hook. Pull the door until the bayonet contacts the roller on the doorjamb. When the bayonet is rotated by the roller, the spring-loaded bayonet roller is disengaged from the detent in the door mechanism handle shaft and the door handle is unlocked. Rotating the inner handle clockwise (outer handle counterclockwise) moves the door to the closed position and extends the seal sections at the top and bottom edges of the door. When the door is closed against the doorstops, the handle rotation is continued until the door rotation rod is overcenter in the door mechanism handle shaft to lock the door handle and bayonet in the closed position.

**NOTE:** The door handle is preloaded approximately 30 foot-pounds (360 inch-pounds)(40.7 N-m) in the overcenter position.

### C. To Operate System

- (1) Open door.

**WARNING:** DO NOT ATTEMPT TO OPEN DOOR WHEN PASSENGER COMPARTMENT IS PRESSURIZED.

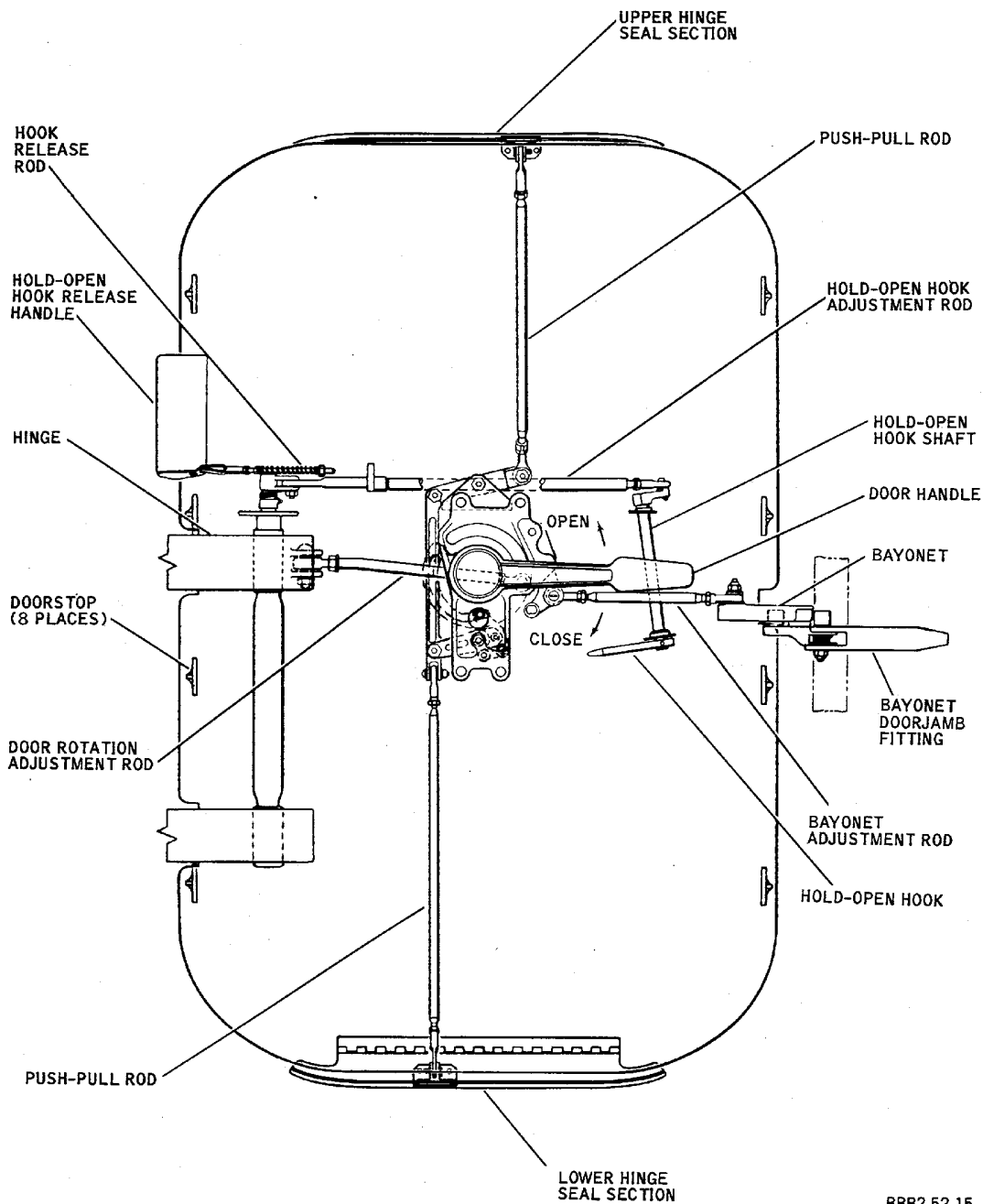
- (a) Check through window for outside obstructions.
  - (b) Rotate door inner handle counterclockwise approximately 135 degrees (2.36 rad)(outer handle clockwise) or to rotation stop. Door will move in and forward.
  - (c) Push outward on handle on door. Bayonet will now lock handle in full rotated position.
  - (d) Push door to full open position, against outside of fuselage, door will latch open.
- (2) Close door.
    - (a) Unlatch locked open door by pulling inboard on door closing bar.
    - (b) Pull door closed, until bayonet contacts roller in jamb; continue pull to rotate bayonet. This action unlocks door handle.
    - (c) Rotate inner handle clockwise (outer handle counterclockwise) to full horizontal position. Door is now locked and cabin may be pressurized.

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**52-40-00**

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



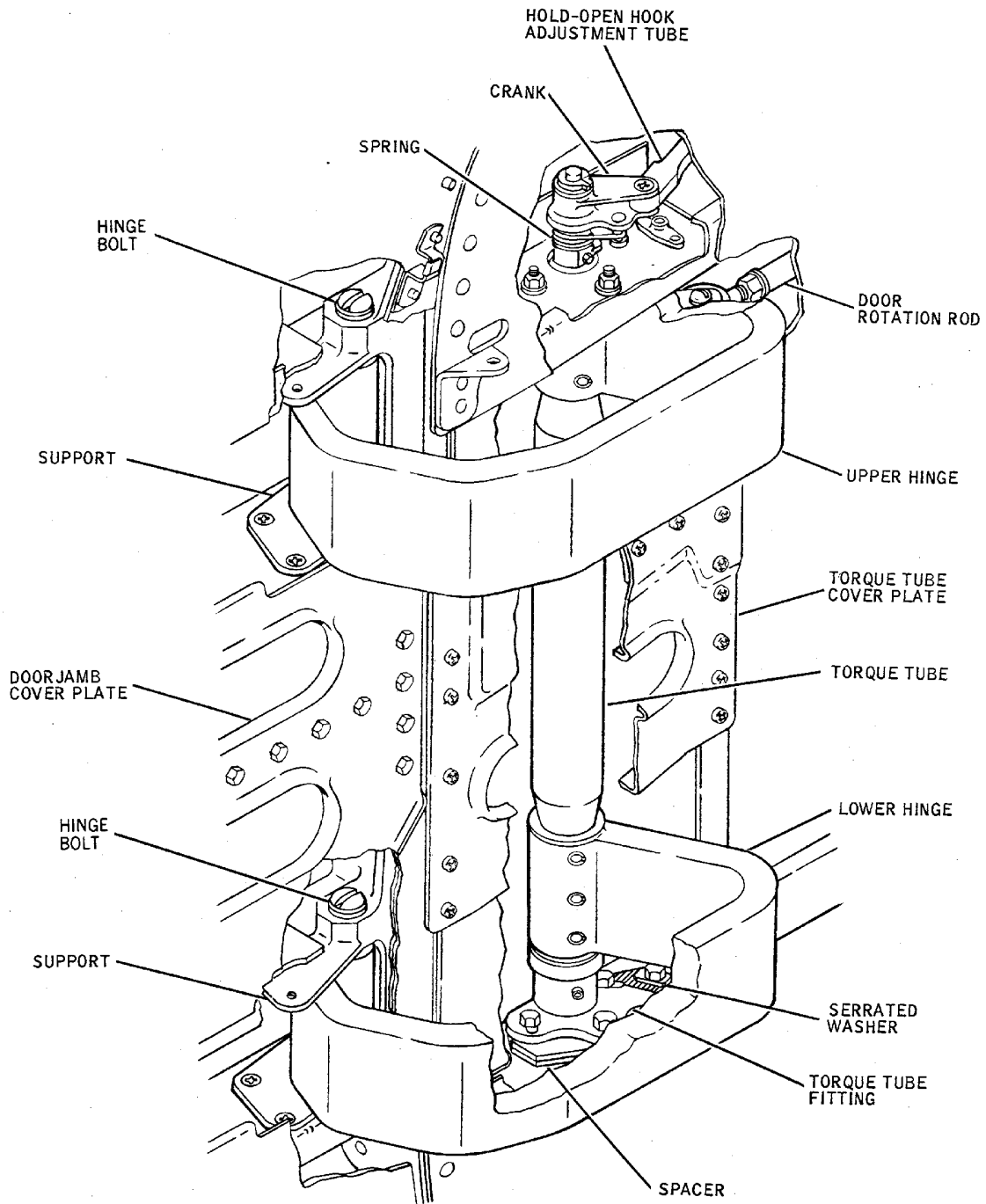
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Forward Service Door -- Mechanism  
Figure 1/52-40-00-990-801

EFFECTIVITY  
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# MD-80 AIRCRAFT MAINTENANCE MANUAL



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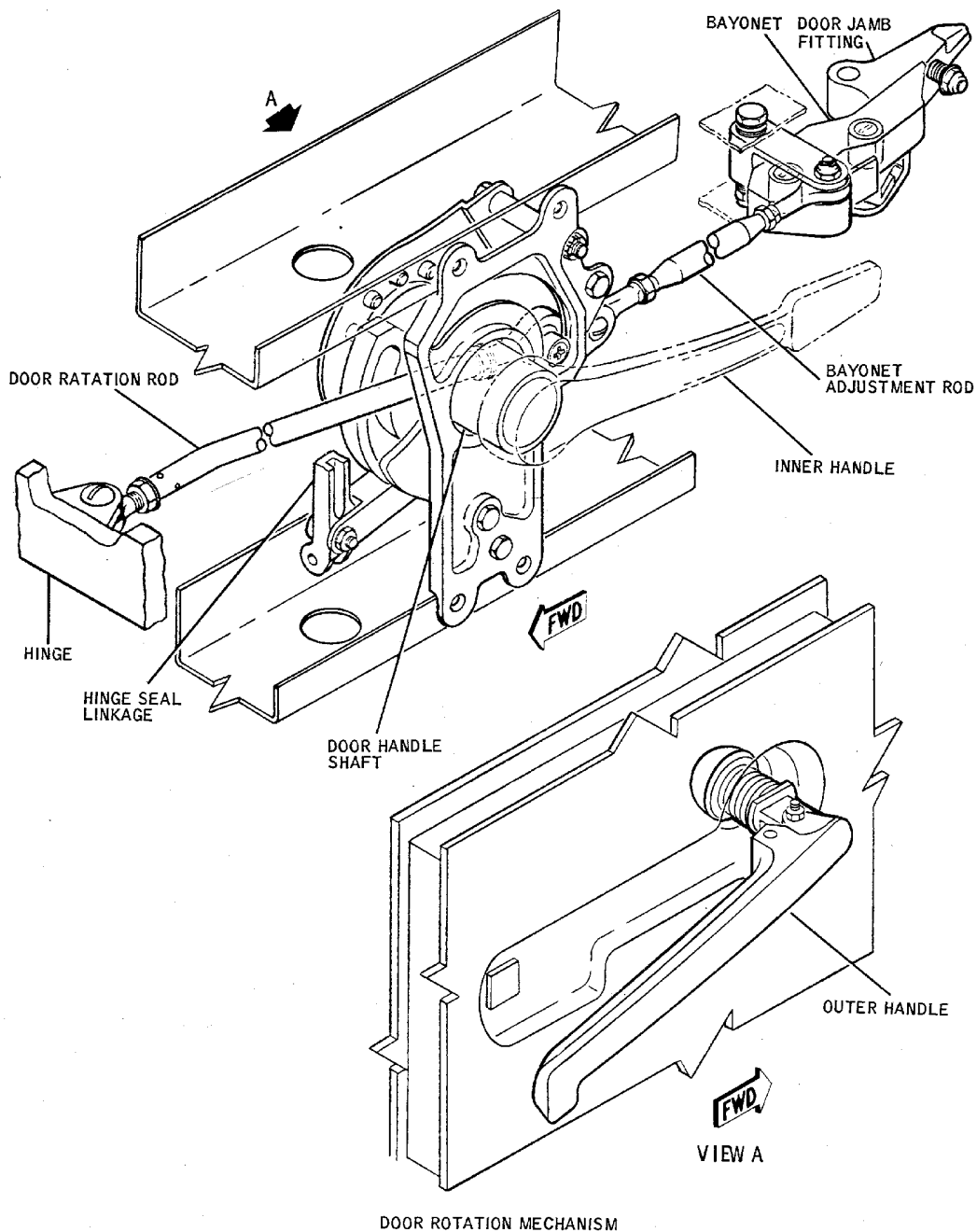
**Forward Service Door -- Hinge Mechanism**  
**Figure 2/52-40-00-990-802**

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



DOOR ROTATION MECHANISM

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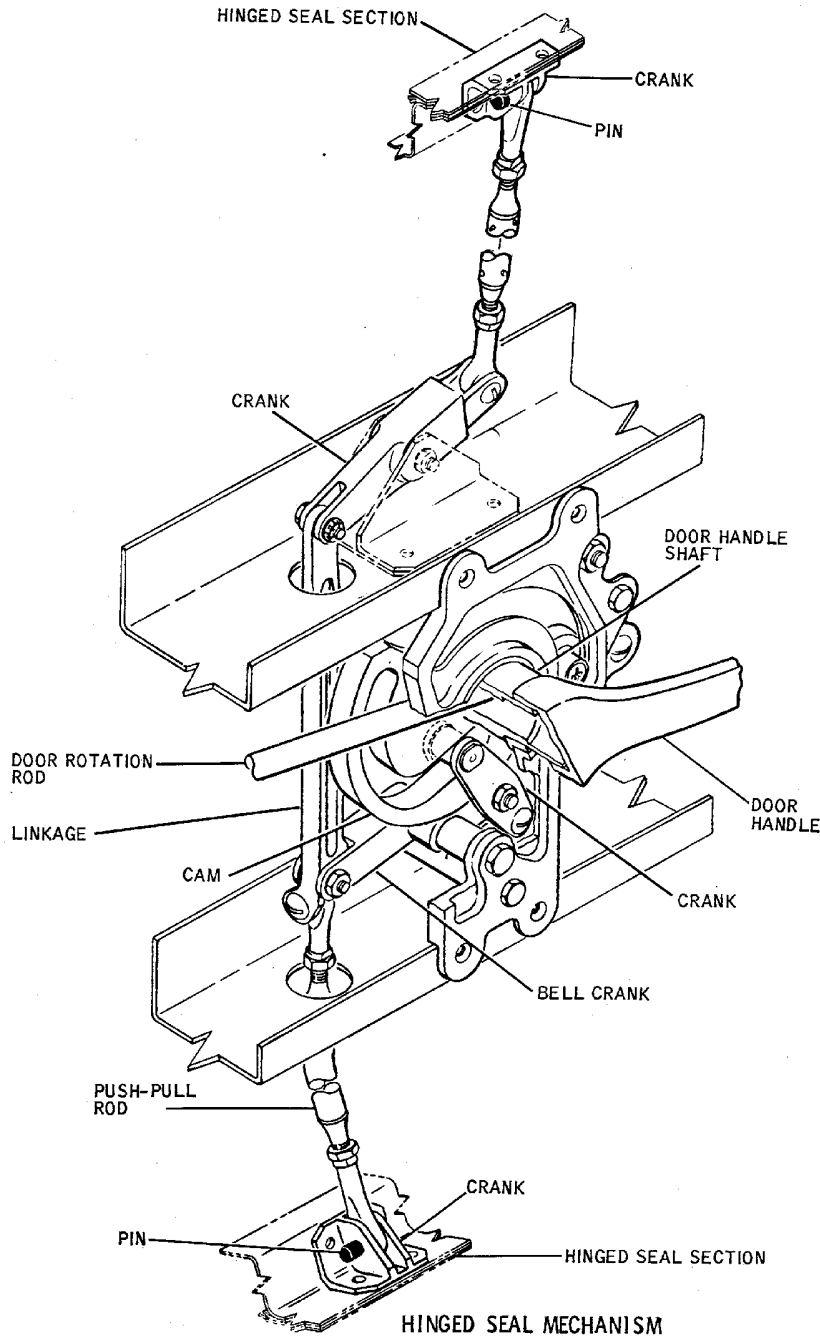
Forward Service Door -- Bayonet and Door Rotating Mechanism  
Figure 3/52-40-00-990-803

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



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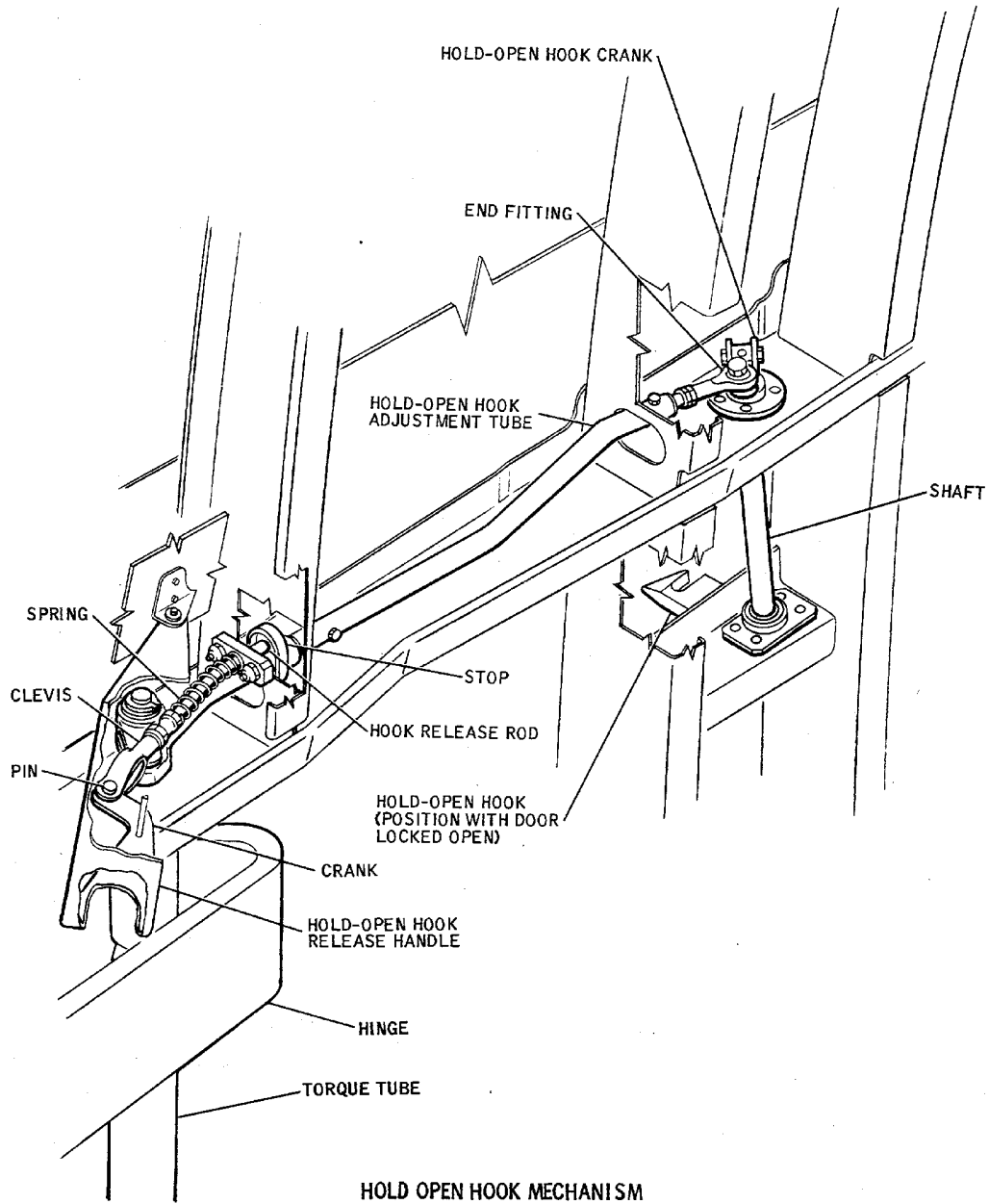
Forward Service Door -- Hinged Seal Mechanism  
Figure 4/52-40-00-990-804

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TP-80MM-WJE

## 52-40-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Forward Service Door -- Hold-Open Hook Mechanism  
Figure 5/52-40-00-990-805

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## 52-40-00

TP-80MM-WJE



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Aft Service Door

#### A. Description

- (1) Aft Service Door - The aft service door is located at the aft end of the passenger compartment on the left side. The door is attached to the fuselage by hinges. The shape and installation of the hinges permit inward, forward, and outward movement of the door. The door can be opened from either inside or outside the aircraft by handles attached to a common shaft, which actuates the opening mechanism. The door is equipped with pressure and weather seals. A window is installed in the upper section of the door to permit viewing the area adjacent to the door for obstructions, before opening the door. (Figure 6) (Figure 7) (Figure 8) (Figure 9) (Figure 10)
  - (a) The aft service door consists of beams, frames, pan stiffener covered by an outer skin, and an inner lining. The door is attached to the fuselage by two hinges. The shape and installation of the hinges permit inward, forward, and outward movement of the door. The hinges are attached to the door by a torque tube and to the doorjamb by hinge pins.
  - (b) A pressure seal is installed along the outer edge of the door and on each gate hinge. The seals are attached to the doorframe by retainers secured to the doorframe. When the door is closed the seal contacts the doorjamb.
  - (c) A window is installed in the upper section of the door to allow viewing the area adjacent to the door for obstructions before opening the door. The window installation consists of two panes of glass, with an airspace between the panes to prevent fogging.
  - (d) The door can be opened from either inside or outside the aircraft by handles attached to a common shaft. Rotating either handle actuates the door opening and seal retracting mechanism.
  - (e) A lining is attached to the inner surface of the door. The lining consists of formed plastic panels, insulation batts of glass fiber, hardwood blocking, and a sound barrier installed along the outer edges of the lining. A window installed in the upper panel of the lining mates with the window installed in the door structure. The upper panel of the lining covers the main components of the door mechanism and can not be removed without opening the door.
  - (f) A door warning proximity switch is installed in the forward section of the door. The rotating latch target actuates the switch. When the door is open, the switch completes a ground circuit to the aft galley door open indicating light on the annunciator light panel, and the light will come on. For a complete description and operation of door warning, DOOR WARNING, SUBJECT 52-70-00.

#### B. Operation

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TP-80MM-WJE

**52-40-00**

Page 8  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** DO NOT ATTEMPT TO OPEN SERVICE DOOR WHEN PASSENGER COMPARTMENT IS PRESSURIZED.

**CAUTION:** MAKE CERTAIN THAT HOLD-OPEN HOOK IS ENGAGED TO PREVENT POSSIBLE DAMAGE BY WIND GUSTS SLAMMING DOOR AGAINST SIDE OF FUSELAGE OR DOORJAMB.

**CAUTION:** BEFORE OPENING DOOR FROM INSIDE, LOOK THROUGH DOOR WINDOW OF AREA ADJACENT TO DOOR FOR OBSTRUCTIONS.

- (1) To open the door, rotate the inner handle clockwise (outer handle counterclockwise) until rotation stops (approximately 180 degrees)(3.14 rad). As the handle is rotated, the door will move inward and forward, and the upper and lower seal sections will retract. When the door handle reaches full travel, the spring-loaded bayonet roller engages a slot in the door mechanism cam and locks the door handle. The door is then pushed outward through the door opening and to the full open position against the outside of the fuselage. As the door is rotated, the hold-open hook is rotated into position to engage the fitting installed in the side of the fuselage. When the door is full open, the hook is engaged and the door is held in the open position.
- (2) To close the door, pull on the hook release handle, located on the hinged edge of the door, to release the hold-open hook. Pull the door until the bayonet contacts the roller on the doorjamb. When the bayonet is rotated by the roller, the spring-loaded bayonet roller is disengaged from the slot in the door mechanism cam and the door handle is unlocked. Rotating the inner handle counterclockwise (outer handle clockwise) moves the door to the closed position and extends the seal sections at the top and bottom edges of the door.

### C. To Operate System

- (1) Open door.

**WARNING:** DO NOT ATTEMPT TO OPEN DOOR WHEN PASSENGER COMPARTMENT IS PRESSURIZED.

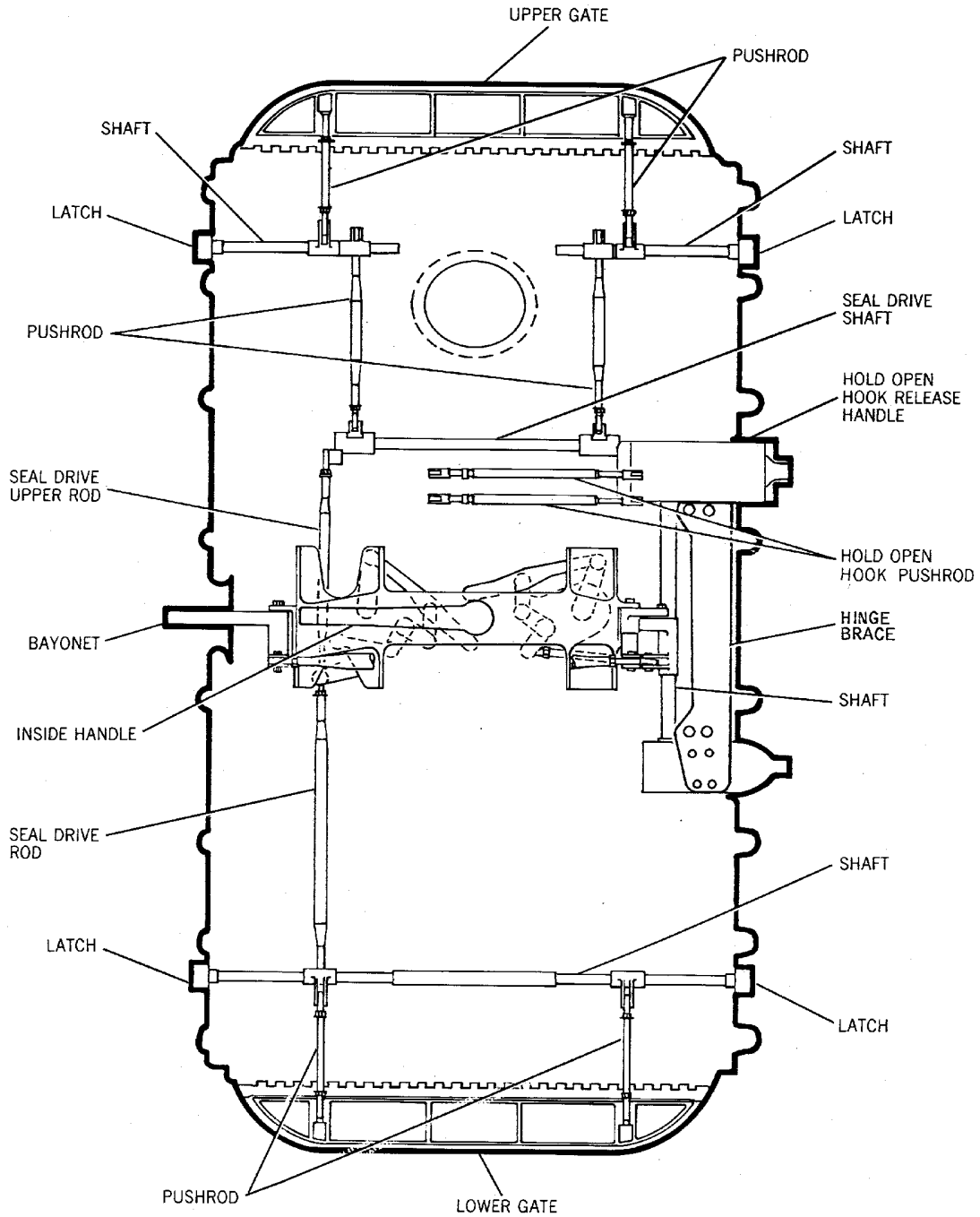
- (a) Check through window for outside obstructions.
  - (b) Rotate door inner handle clockwise approximately 180 degrees (3.14 rad)(outer handle counterclockwise) or to rotation stop. Door will move in and forward.
  - (c) Push outward on handle on door. Bayonet will now lock handle in full rotated position.
  - (d) Push door to full open position, against outside of fuselage, door will latch open.
- (2) Close door.
    - (a) Unlatch locked open door by pulling inboard on door closing bar.
    - (b) Pull door closed, until bayonet contacts roller in jamb; continue pull to rotate bayonet. This action unlocks door handle.
    - (c) Rotate inner handle counterclockwise (outer handle clockwise) to full horizontal position. Door is now locked and cabin may be pressurized.

EFFECTIVITY  
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**52-40-00**

TP-80MM-WJE

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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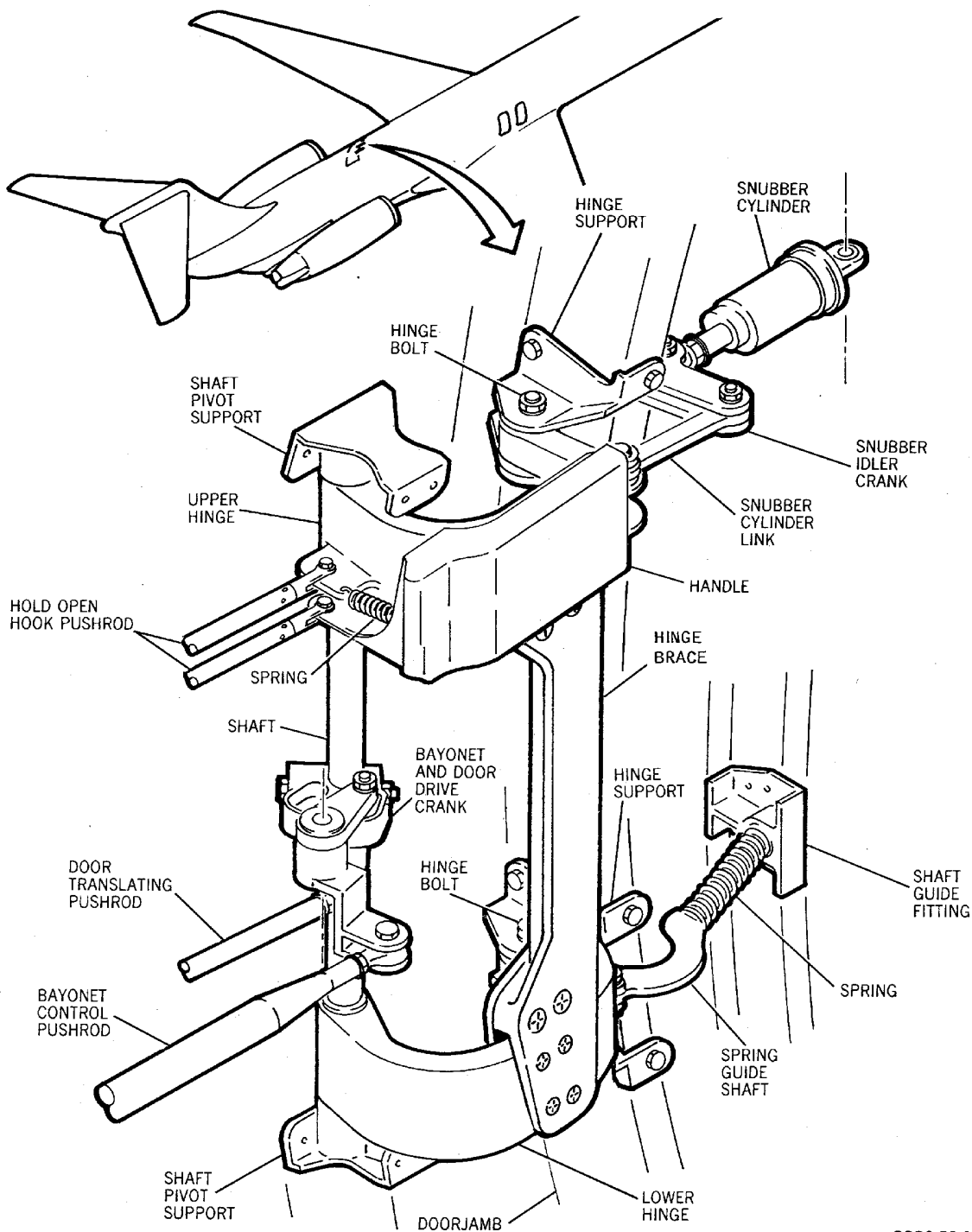
**Aft Service Door -- Mechanism  
Figure 6/52-40-00-990-806**

EFFECTIVITY  
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**52-40-00**

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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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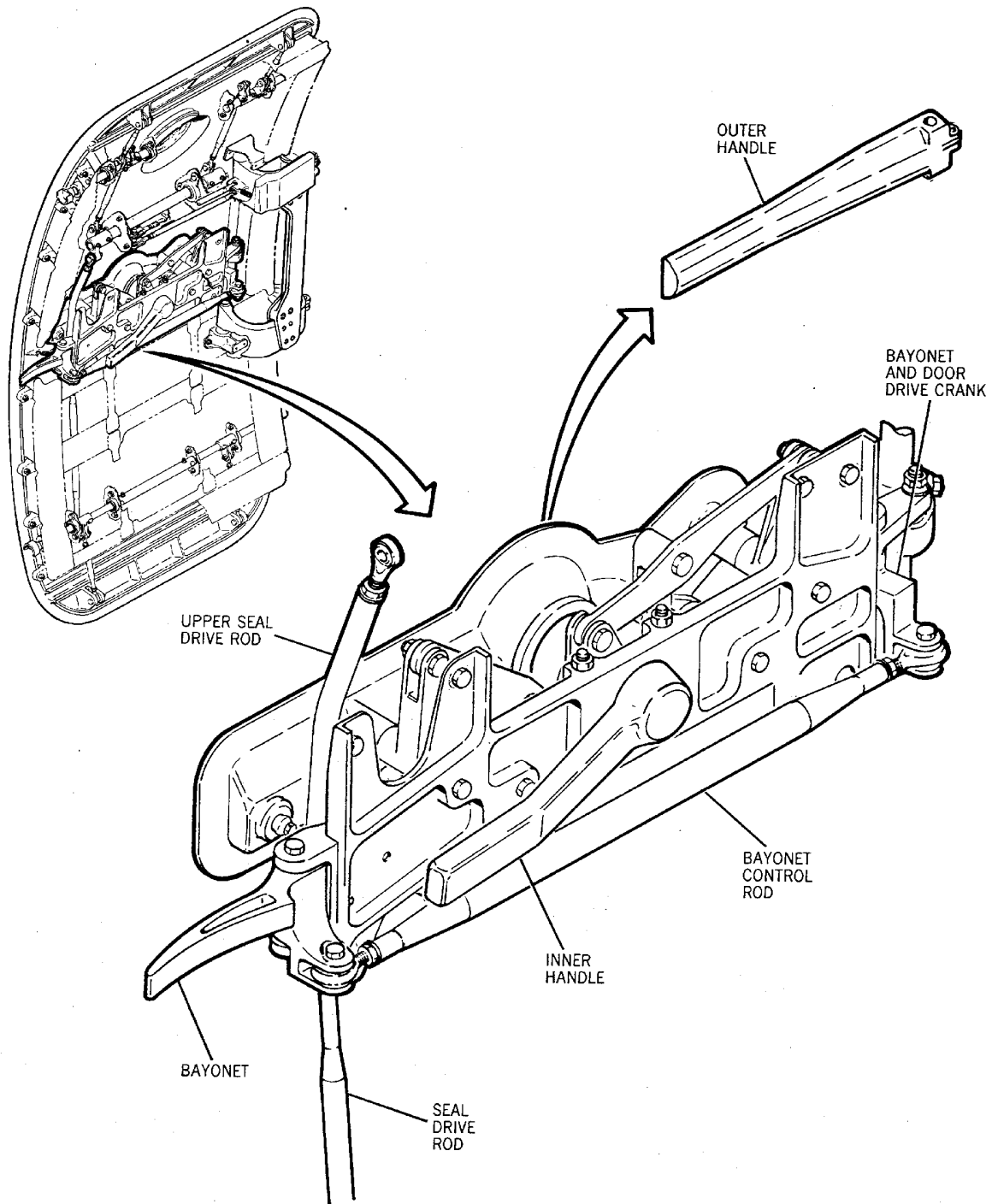
**Aft Service Door -- Hinge Mechanism  
Figure 7/52-40-00-990-807**

EFFECTIVITY  
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**52-40-00**

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Aft Service Door -- Bayonet and Door Rotating Mechanism  
Figure 8/52-40-00-990-808

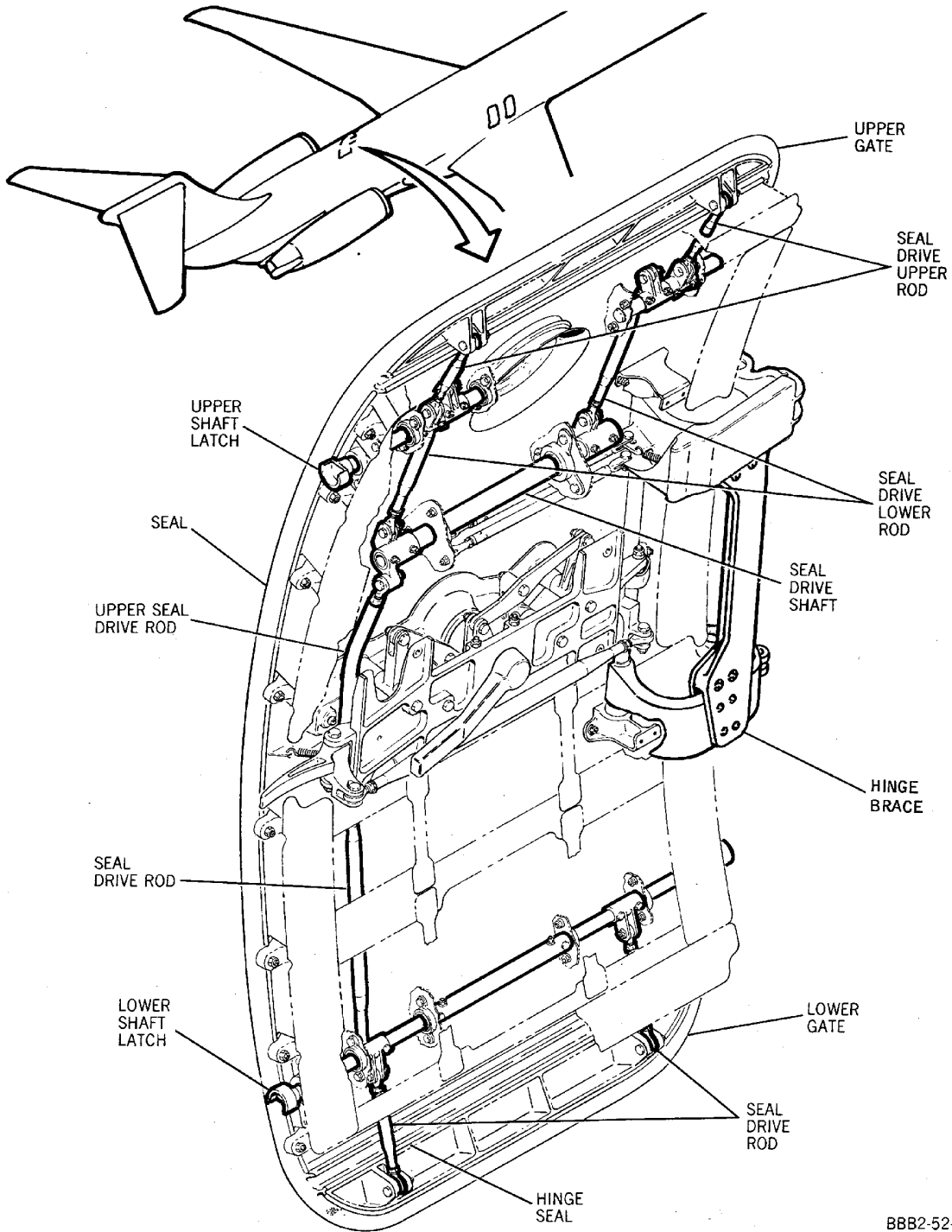
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## 52-40-00

TP-80MM-WJE

Page 12  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-96A

**Aft Service Door -- Hinged Seal Mechanism**  
**Figure 9/52-40-00-990-809**

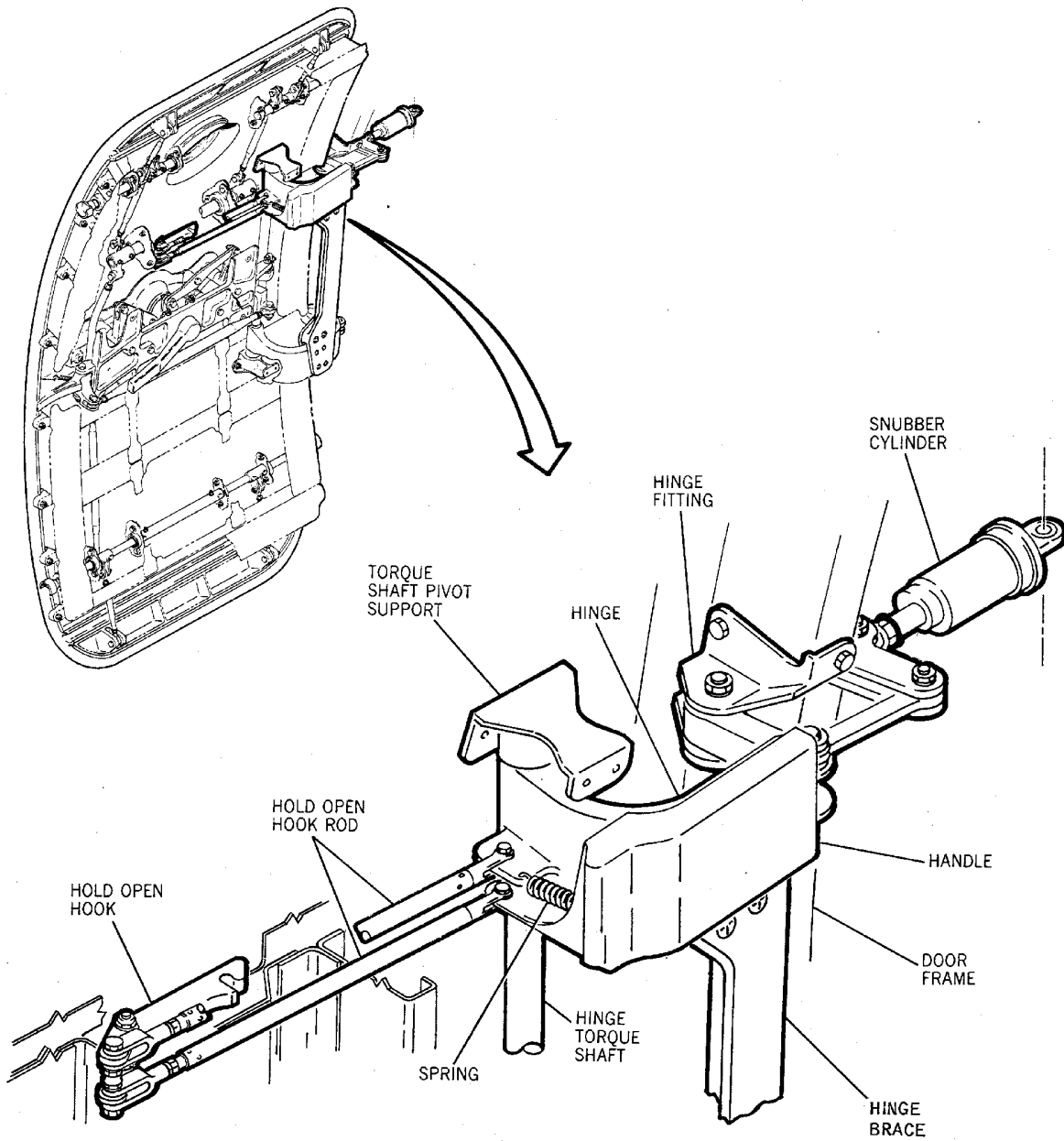
EFFECTIVITY  
WJE ALL

## 52-40-00

TP-80MM-WJE

Page 13  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-97A

**Aft Service Door -- Hold-Open Hook Mechanism  
Figure 10/52-40-00-990-810**

EFFECTIVITY  
WJE ALL

**52-40-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 4. Electrical/Electronics Compartment Door

#### A. Description

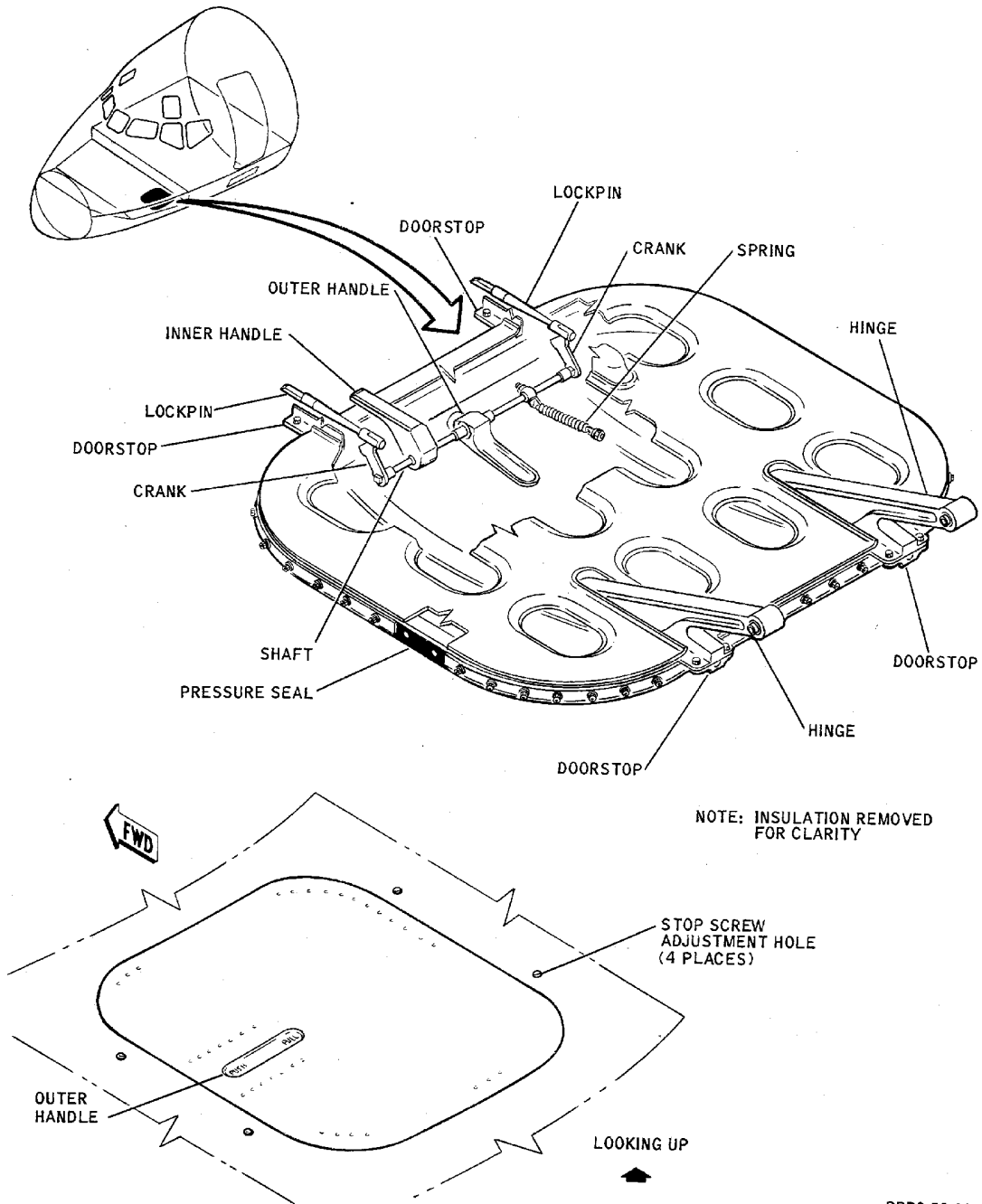
- (1) Electrical/Electronics Compartment Door - The electrical/ electronics compartment door is located in the lower surface of the fuselage aft of the nosewheel well. The door is attached to the fuselage by hinges located on the left side of the door. The door can be opened from inside or outside the aircraft by handles attached to the latching mechanism. A pressure seal is installed along the outer edge of the door. (Figure 11)
  - (a) The door consists of a pan, frames, doublers, stiffeners, and fittings. The door opens inward and to the left, on hinges attached to the door and brackets installed on the aircraft structure. The door is secured in the closed position by lockpins actuated by a latching mechanism. The door may be opened and closed from inside or outside the aircraft by handles attached to the latching mechanism. When the door is closed and latched, the outer and inner handles are flush with the surfaces of the door. An elastic cord attached to the equipment rack structure, on the left side of the compartment, can be looped over the aft lockpin to hold the door in the open position. Set-screws installed in the doorjamb provide the means for adjusting the door to fair the door outer surface with the fuselage skin. On later aircraft the aft lockpin engages a bracket on the equipment rack structure.
  - (b) A pressure seal is installed along the outer edges of the doorframe. The seal consists of a silicone rubber outer seal, a synthetic rubber inner seal, and a sponge rubber filler. The seals are attached to the doorframe by retainers secured to the doorframe by screws. The sponge rubber filler is molded to fit between the inner and outer seals, and is held in place by the seals. When the door is closed the seal contacts a seal depressor on the doorjamb.
  - (c) A proximity switch installed in the doorjamb is actuated by a target attached to the door. The switch is part of the door warning system. When the door is open, the switch completes a ground circuit to the door warning light on the annunciator panel, and the light will come on. For a complete description and operation of door warning, DOOR WARNING, SUBJECT 52-70-00.

#### B. Operation

- (1) To open door, pull inner or outer handle away from door. Lockpins will be released and door will open up and to the left on hinges.



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Electrical/Electronics Compartment Door  
Figure 11/52-40-00-990-811**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-40-00**

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 5. Forward Accessory Compartment Door

#### A. Description

- (1) Forward Accessory Compartment Door - The forward accessory compartment door is located in the canted bulkhead in the upper section of the nosewheel well. The door is secured, in the closed position, to the bulkhead by fasteners attached to hinged latches. A tubular hinge attached to the upper surface of the door permits the door to be pushed upward and stowed on the structure in the compartment. A pressure seal is installed along the outer edge of the door.
  - (a) The door consists of pans, doublers, hinged latches, pressure seal, and a tubular hinge. The door is secured to the bulkhead in the closed position by fasteners on the hinged latches, which engage fittings on the bulkhead. The tubular hinge permits the door to be pushed upward and stowed against the compartment structure.
  - (b) A proximity switch installed in the doorjamb is actuated by a target attached to the door. The switch is part of the door warning system. When the door is open, the switch completes a ground circuit to the door warning light on the annunciator panel, and the light will come on. For a complete description and operation of door warning, DOOR WARNING, SUBJECT 52-70-00.

#### B. Operation

- (1) To open door, unfasten latches permitting each latch to spring toward the door center to clear canted bulkhead, push up on front of door raising tubular hinge vertically against forward pressure bulkhead, then holding tubular hinge to prevent aft motion, push door up until latch, located in top of compartment, is engaged.

### 6. APU Compartment Doors

#### A. Description

- (1) APU Compartment Doors - The APU compartment doors are located in the lower surface of the fuselage just aft of the aft pressure bulkhead. The doors are identical except for the pressure relief door installed in the right door. The doors are hinged along the inboard edge and open downward when the door fasteners are released. The pressure relief door is hinged at the forward end and secured at the aft end by spring loaded latches. The latches are designed to release the door if the pressure within the APU compartment exceeds 1.3 psi (8.97 kPa).

#### B. Operation

- (1) To open doors, release spring-loaded fasteners. Doors will open down and outboard and hang vertical.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-40-00**

Page 17  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD SERVICE DOOR - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practices provides removal/installation instructions for the forward service door. (Figure 401)
- B. Two methods are provided for the removal and installation of the service door. One method (normal) removes the door at the doorjamb hinge attachment with the hinges remaining attached to the door. The other method (alternate) removes the door from the hinges. In the first method, the doorjamb lining in the area of the hinges must be removed. The other method involves removing the door lining. The method selected will be determined by the maintenance required.

#### 2. Removal/Installation Forward Service Door

- A. Remove Door (Normal)

**WARNING:** EXERCISE CARE WHEN REMOVING DOOR TO PREVENT POSSIBLE INJURY TO PERSONNEL. FORWARD SERVICE DOOR WEIGHS APPROXIMATELY 76 POUNDS (34 KG).

- (1) Open forward service door.
- (2) Remove evacuation slide from service door (PAGEBLOCK 25-62-00/201).
- (3) Remove doorjamb lining in area of hinges.
- (4) Remove cover plate located between hinges on doorjamb.
- (5) Determine and note number of adjustment washers installed between hinges and hinge supports.
- (6) Support door and remove hinge bolts.

**WARNING:** FORWARD SERVICE DOOR WEIGHS APPROXIMATELY 76 POUNDS (34 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (7) Remove door by disengaging hinges from hinge support. Retain adjustment washers for installation.

- B. Install Door (Normal)

**NOTE:** When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

**WARNING:** FORWARD SERVICE DOOR WEIGHS APPROXIMATELY 76 POUNDS (34 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (1) Position door in door opening.
- (2) Position hinges in hinge supports and temporarily install hinge bolts.
- (3) If door removed in Paragraph 2.A. is being installed and hinge adjustment in door was not changed, proceed with Paragraph 2.B.(5). If adjustment was changed or new door is being installed, proceed with next step.
- (4) Adjust door. (PAGEBLOCK 52-41-00/501)
- (5) Support door and remove upper hinge bolt.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-41-00**

Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (6) Install adjustment washers noted in Paragraph 2.A.(5) between upper hinge and hinge support. Install hinge bolt.

NOTE: Use washers removed in Paragraph 2.A.(5), when adjusting hinges in hinge supports.

NOTE: Make certain that radius washer under nut of hinge bolt has radius side to hinge; flat side to nut.

- (7) Repeat Paragraph 2.B.(5) and Paragraph 2.B.(6) for lower hinge.
- (8) Check for 0.020(±0.010) inch (0.51(±0.25) mm) clearance between washers (unloaded) and bearing in hinge supports. Add or remove washers as required to obtain clearance.
- (9) Check door operation. (PAGEBLOCK 52-41-00/601)
- (10) Install cover plate between hinges.
- (11) Install doorjamb lining.
- (12) Check door warning system. (PAGEBLOCK 52-70-05/201)
- (13) Install evacuation slide on service door. (PAGEBLOCK 25-62-00/201)

### C. Remove Door (Alternate)

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891**

- (1) Remove the door lining as follows: (PAGEBLOCK 52-41-01/201 Config 1)

**WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (2) Remove the door lining as follows: (PAGEBLOCK 52-41-01/201 Config 2)

### WJE ALL

**WARNING: EXERCISE CARE WHEN REMOVING DOOR TO PREVENT POSSIBLE INJURY TO PERSONNEL. FORWARD SERVICE DOOR WEIGHS APPROXIMATELY 45 POUNDS (20 KG).**

- (3) Open forward service door.
- (4) Remove evacuation slide from forward service door. (PAGEBLOCK 25-62-00/201)
- (5) Remove torque tube cover plate located on door between hinges.
- (6) Remove cover plate support from torque tube.
- (7) Disconnect door rotation rod from upper hinge.
- (8) Remove hold-open hook crank, spring, and sleeve attached to upper end of torque tube.
- (9) Determine and note number of spacers installed between torque tube fittings and door.
- (10) Support door and remove bolts attaching upper and lower torque tube fittings to door.

**WARNING: FORWARD SERVICE DOOR WEIGHS APPROXIMATELY 45 POUNDS (20 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.**

- (11) Remove door by removing spacers and then disengaging torque tube fittings from door.

### D. Install Door (Alternate)

NOTE: When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

- (1) Install torque tube fittings on torque tube.

NOTE: Lower torque tube fitting must be held in position when installing the door.

EFFECTIVITY  
WJE ALL

**52-41-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** FORWARD SERVICE DOOR WEIGHS APPROXIMATELY 45 POUNDS (20 KG).  
MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN  
REMOVING DOOR.

- (2) Position door on torque tube.
- (3) If door removed in Paragraph 2.C. is being installed and hinge adjustment in doorjamb was not changed, proceed with Paragraph 2.D.(5). If adjustment was changed or new door is being installed, proceed with next step.
- (4) Adjust door. (PAGEBLOCK 52-41-00/501)  
NOTE: Use spacers removed in Paragraph 2.C.(9).
- (5) Install spacer noted in Paragraph 2.C.(9), between torque tube fittings and door.
- (6) Connect door rotation rod to upper hinge.
- (7) Install hold-open hook crank, spring, and sleeve on upper end of torque tube.  
NOTE: To facilitate installation, the hold-open hook crank, spring, and sleeve can be assembled as a unit on a short shaft and then installed by sliding the unit off the shaft and onto the torque tube.
- (8) Check door operation. (PAGEBLOCK 52-41-00/601)
- (9) Install torque tube cover support.
- (10) Install torque tube cover plate.
- (11) Install door lining.

### WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891

- (a) Install the door lining as follows: (PAGEBLOCK 52-41-01/201 Config 1)

### WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

- (b) Install the door lining as follows: (PAGEBLOCK 52-41-01/201 Config 2)

### WJE ALL

- (12) Check door warning system. (PAGEBLOCK 52-70-05/201)
- (13) Install evacuation slide on service door. (PAGEBLOCK 25-62-00/201)

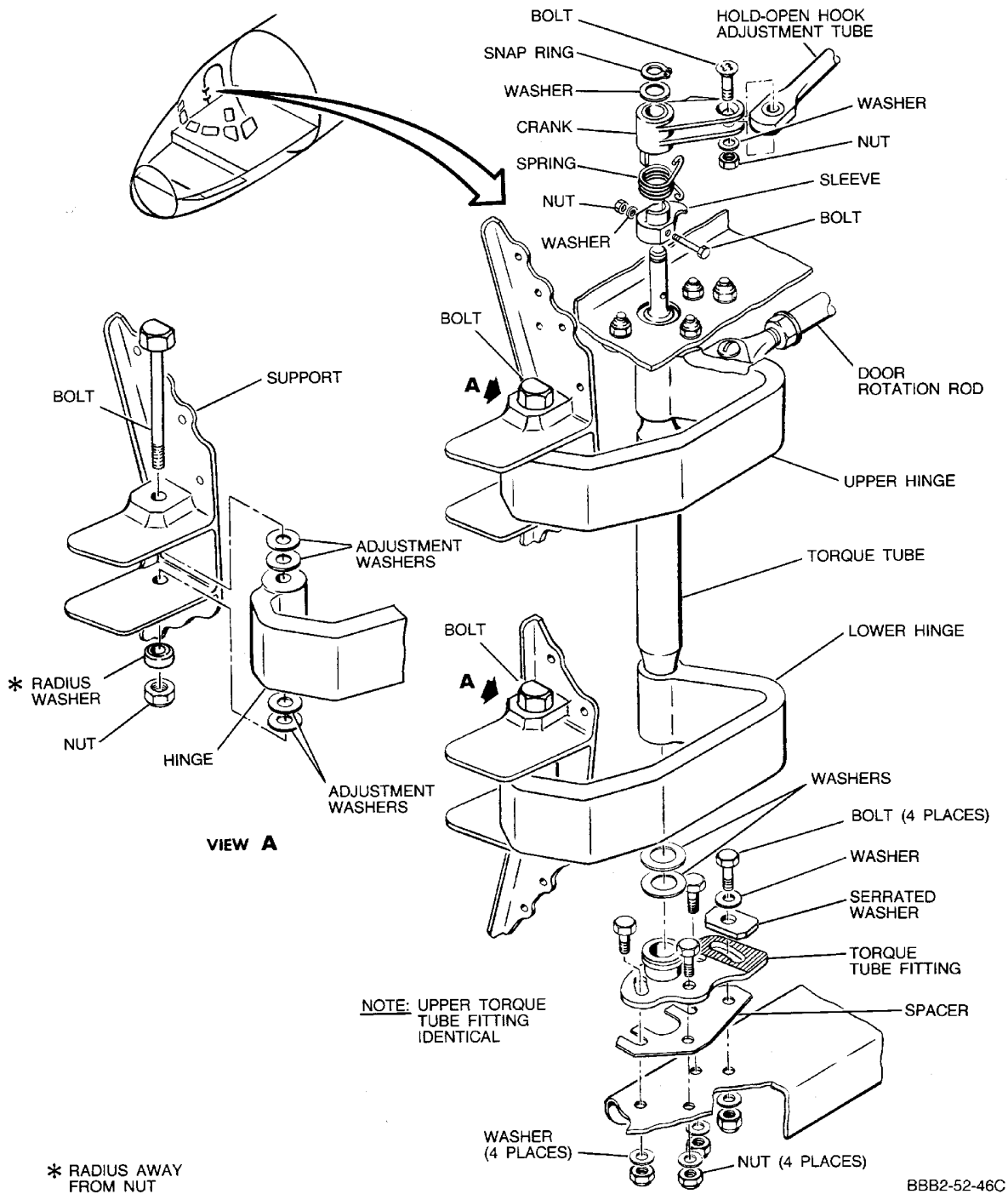
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-41-00

Page 403  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Forward Service Door -- Installation  
Figure 401/52-41-00-990-801**

EFFECTIVITY  
WJE ALL

**52-41-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD SERVICE DOOR - ADJUSTMENT/TEST

### 1. General

- A. This maintenance practice provides adjustment/test instructions for the forward service door. (Figure 501)
- B. The forward service door adjustment procedures provide the instructions necessary to position the door correctly and to adjust the door controls and mechanisms.
- C. The door must first be adjusted vertically and then horizontally before adjusting the door controls and mechanisms or fairing the door with the fuselage. Fairing the door is necessary only when installing a new door or when stopscrew adjustment has been altered. The fuselage must be pressurized when making the final adjustments to fair the door.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Adapter, torque 4916787-1	Douglas Aircraft Co.
Torque wrench (0 - 600 inch- pounds range)	Commercially available
Sealant, polysulfide, aluminized PR-340	Products Research & Chemical Corp. Glendale, CA

### 3. Adjustment/Test Forward Service Door

NOTE: Before adjusting door, check that door is properly lubricated. (PAGEBLOCK 12-21-01/301)

NOTE: When adjusting door, check the integrity of the locknut(s) being tightened for its self locking feature before continuing adjustment procedure. (PAGEBLOCK 20-30-01/201)

NOTE: To rig door properly, a 35 pound (15.9 kg) weight must be installed on door to simulate weight of slide raft.

#### A. Adjust Door (Vertically)

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

- (1) Open door.
- (2) Remove hinge covers and lining from hinge area on doorjamb.
- (3) Support door and remove upper and lower hinge bolts (1).
- (4) Install adjustment washers (2) between hinge (3) and upper and lower hinge supports (4) to adjust door vertically. Maintain 0.020(±0.010) inch (0.51(±0.25) mm) clearance between adjustment washers (2) and hinge supports (4).

NOTE: Make certain that radius washer under nut of hinge bolt has radius side to hinge; flat side to nut.

EFFECTIVITY  
WJE ALL

**52-41-00**

TP-80MM-WJE

Page 501  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (a) Stopscrews (14) should contact doorstops (15) greater than 5/32 inch (3.97 mm) from any edge of doorstop face when fuselage is pressurized. Gaps between upper and lower edges of door skin and fuselage skin should be equal and constant. Maximum allowable gap is 3/8 inch (9.5 mm).
- (5) Install and secure hinge bolts (1).
- (6) Install hinge covers and lining on doorjamb.
- NOTE: If additional vertical adjustment of door is required, continue with Paragraph 3.A.(6). If vertical adjustment is satisfactory, proceed with Paragraph 3.B..
- (7) Remove door lining. (FORWARD SERVICE DOOR LINING, SUBJECT 52-41-01, page 201)
- (8) Remove access cover from hinge area of door.
- (9) With door supported, remove bolt (8) and loosen bolts (6), (7), and (9) in upper and lower fittings (10).
- (10) Install adjustment spacers (11) between fittings (10) and door structure to adjust door vertically per requirements outlined in Paragraph 3.A.(4). Maintain vertical clearance of 0.020(±0.010) inch (0.51(±0.25) mm) between adjustment washers (16) and lower fitting (10).
- NOTE: Additional vertical adjustment can be obtained by removing bolts (6), (7), and (9) from upper and lower fittings (10) and relocating existing adjustment washers (16). At least one washer is required on either side of hinge (3).

**CAUTION:** ENSURE THAT SERRATIONS ON SERRATED WASHER (12) ARE PROPERLY MATED WITH SERRATIONS ON FITTINGS (10) BEFORE TIGHTENING BOLT (9).

- (11) Install and tighten bolts (6), (7), (8), and (9) in upper and lower fittings (10).
- (12) If required, adjust door horizontally. (Paragraph 3.B.)
- (13) Install access cover on door.
- (14) Install door lining. (FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 1 or FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 2)
- B. Adjust Door (Horizontally)

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

- (1) Remove door lining. (FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 1 or FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 2)
- (2) Check that door is adjusted vertically.
- (3) Remove access cover from hinge area of door.
- (4) Loosen bolts (6), (7), (8), and (9) in upper and lower fittings (10) and rotate fittings (10) until stopscrews (14) contact doorstops (15) greater than 5/32 inch (3.97 mm) from any edge of doorstop face when fuselage is pressurized; gaps between forward and aft edges of door skin and fuselage skin equal and constant, maximum allowable gap is 3/8 inch (9.5 mm).

**CAUTION:** ENSURE THAT FITTINGS (10) ARE NOT EXCESSIVELY PRELOADED AND THAT SERRATIONS ON SERRATED WASHER (12) ARE PROPERLY MATED WITH SERRATIONS ON FITTINGS (10) BEFORE TIGHTENING BOLT (9). ENSURE THAT ADJUSTMENT WASHERS (16) HAVE VERTICAL CLEARANCE OF 0.020(±0.010) INCH (0.51(±0.25) MM).

- (5) Tighten bolts (6), (7), (8), and (9) in fittings (10).
- (6) Install access cover on door.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-41-00**

Page 502  
Feb 01/2015



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

(7) Install door lining. (FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 1 or FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 2)

(8) Check door warning system. (PAGEBLOCK 52-70-05/201)

C. Adjust Door Fair (Inboard/Outboard)

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

(1) Remove sealant from stopscrew access holes in doorjamb.

(2) Open door.

(3) Loosen locknuts (13) on stopscrews (14).

(4) Adjust stopscrews (14) to extend 1 9/16 inches (39.7 mm) inboard of outer surface of fuselage skin.

(5) Adjust door mechanisms. (Paragraph 3.D.)

NOTE: Final adjustment of the mechanisms, for the door to meet hand load and sealing requirements, should be accomplished after the door is faired.

(6) Close and lock door.

(7) Pressurize fuselage until pressure differential of 3 to 4 psi (20 to 28 kPa) is obtained. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)

**CAUTION**: DO NOT ATTEMPT TO FORCE DOOR INWARD WITH SETSCREWS WHEN FUSELAGE IS PRESSURIZED.

(8) Adjust stopscrews (14) until door is faired within acceptable tolerances . All stopscrews (14) must contact doorstops (15) when fuselage is pressurized. Stop-screws (14) should be recessed 1/16 inch (1.6 mm) to 1/4 inch (6.4 mm) below outer surface of fuselage skin when door fair adjustments are complete. Longer or shorter screws may be used to comply with this requirement. (Figure 502)

(9) Depressurize fuselage. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)

(10) Open door.

(11) Hold stopscrews (14) and torque locknuts (13) 100 in-lb (11 N·m) to 140 in-lb (16 N·m).

(12) Tape face of all doorstops (15).

(13) Close and lock door.

(14) Pressurize fuselage until pressure differential of 3 to 4 psi (20 to 28 kPa) is obtained. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)

(15) Depressurize fuselage. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)

(16) Open door and check that stopscrews (14) contacted face of all doorstops (15), greater than 5/32 inch (3.97 mm) from any edge of doorstop face, when fuselage was pressurized.

(17) Remove tape from face of doorstops (15).

(18) Seal stopscrew access holes with aluminized sealant, EC-1547.

(19) Check door warning system. (PAGEBLOCK 52-70-05/201)

D. Adjust Door Mechanisms

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 503.

NOTE: The door lining must be removed to adjust the door mechanisms. (FORWARD SERVICE DOOR LINING, SUBJECT 52-41-01, page 201)

EFFECTIVITY  
WJE ALL

**52-41-00**

TP-80MM-WJE

Page 503  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (1) Check that door is adjusted vertically and horizontally.
- (2) Disconnect upper and lower seal fittings (15) from push-pull rods (13) by removing pins (14).
- (3) Install adjustment washers (4) between bayonet (1) and bayonet fitting (5) as necessary to obtain 0.165(±0.085) inch (4.2(±2.2) mm) vertical clearance between bayonet (1) and aft roller (3) on doorjamb fitting (2) when door is closed and locked.
- (4) Adjust bayonet adjustment rod (8) so bayonet (1) clears doorjamb during door operation.

**CAUTION:** MAKE CERTAIN THAT BAYONET (1) AND DOORJAMB FITTING (2) WILL NOT BE PRELOADED WHEN FUSELAGE IS PRESSURIZED.

- (5) Adjust doorjamb fitting (2) to obtain firm contact of door seal with seal depressor, in area of bayonet (1), when door is closed and locked.

**NOTE:** The doorjamb fitting (2) is adjusted by adjustment screw (9). Sealant must be removed from access hole in doorjamb to gain access to adjustment screw (9).

- (6) Adjust door rotation rod (6) until static door fair mismatch is equal at forward and aft edges of door.
- (7) Adjust upper and lower push-pull rods (13) so retractable seals are depressed by seal depressor minimum amount required to meet weather seal requirements when door is closed and fuselage is depressurized.

**NOTE:** A door is properly weather sealed when a full stream of water from a 3/4 inch (19.1 mm) diameter hose is directed on fuselage above door and no water drops inboard of threshold drain pan and water depth does not exceed 1/4 inch (6.4 mm) at drain opening in threshold drain pan.

- (8) Fair door. (Paragraph 3.C.)
- (9) Adjust door rotation rod (6), bayonet adjustment rod (8), doorjamb fitting (2), and seal push-pull rods (13) in minor increments until door meets following requirements:
  - (a) Static door fair mismatch is equal at forward and aft edges of door.
  - (b) Door meets weather seal requirements.

**NOTE:** A door is properly weather sealed when a full stream of water from a 3/4 inch (19.1 mm) diameter hose is directed on fuselage above door and no water drops inboard of threshold drain pan and water depth does not exceed 1/4 inch (6.4 mm) at drain opening in threshold drain pan.

- (c) Retractable portions of door seal clear structure when door is opened or closed.
- (d) Hand load required to open or close door does not exceed 30.0 pounds (13.6 kg) when applied in inner handle.

**NOTE:** A hand load of 30.0 pounds (13.6 kg) applied to the inner door handle is equal to 25.0 foot-pounds (300.0 inch-pounds) (33.6 N·m) of torque applied to door handle shaft with torque adapter P/N 4916787-1 and a standard torque wrench. Opening or closing a new door or a door with a new seal can require a maximum hand load of 60 pounds (27 kg) or a maximum torque of 50 foot-pounds (600 inch-pounds) (67.2 N·m) before door has been subjected to pressurization cycle.

- (10) Tighten all jamnuts, secure pins (14), and secure all attach bolts.
- (11) Seal access hole for adjustment screw (9) with aluminized sealant, PR-340.
- (12) For doors with an adjustable stop (17) for locking door handle shaft (7) in open position, proceed as follows:
  - (a) Rotate inner door handle to full open position.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-41-00**

Page 504  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** ENSURE THAT SERRATIONS ON STOP (17) ARE PROPERLY MATED WITH SERRATIONS ON CRANK (18) BEFORE SECURING STOP (17).

- (b) With roller (10) in firm contact with end of slot in inner plate on door mechanism, adjust stop (17) on crank (18) to obtain clearance of 1/32 inch (0.79 mm) between stop (17) and flange on door handle shaft (7).
  - (13) Install door lining. (FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 1 or FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 2)
- E. Adjust Hold-Open Hook

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 504.

NOTE: The door lining must be removed to adjust the hold-open hook. (FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 1 or FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES, PAGEBLOCK 52-41-01/201 Config 2)

- (1) Check that door mechanisms are adjusted.
- (2) Close and lock door.
- (3) Disconnect end fitting (1) from crank (3).
- (4) Adjust end fitting (1) to position hold-open hook (4) flush with door skin.
- (5) Connect end fitting (1) to crank (3) and secure connecting bolt.
- (6) Open door.
- (7) Disconnect crank (3) from block on shaft.
- (8) Position crank (3) on block so hold-open hook is fully engaged with pin in fuselage.
- (9) Install bolt in crank (3) and block on shaft.
- (10) Close and lock door. Check that hold-open hook is flush with door skin.  
NOTE: Repeat Paragraph 3.E.(3) through Paragraph 3.E.(10) as necessary to obtain required results.
- (11) Open door (hook engaged).
- (12) Remove pin (5) attaching clevis (6) on hook release rod (7) to hook release handle (8).
- (13) Adjust hook release rod (7) length to prevent hold-open hook (4) from striking aft edge of fuselage cutout when release handle (8) is fully activated.
- (14) With hook release handle (8) fully depressed, adjust hook release rod (7) until hold-open hook (4) will not engage receptacle pin.
- (15) With hook release handle (8) not depressed, cycle door to full open position to ensure that hold-open hook (4) will fully engage receptacle pin.
- (16) Secure hook release rod (7) to crank (10).
- (17) Check door operation. (PAGEBLOCK 52-41-00/601)

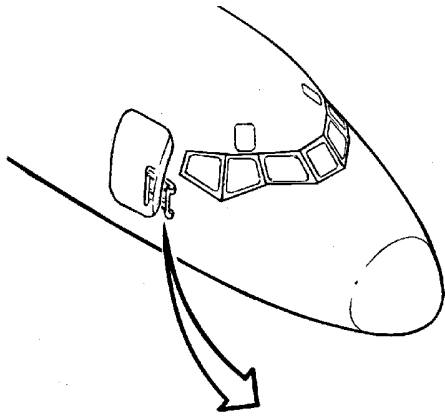
NOTE: The function requirements of the hold-open mechanism takes precedence over the requirement for the hook to be flush with the door exterior skin when the door is closed.

EFFECTIVITY  
WJE ALL

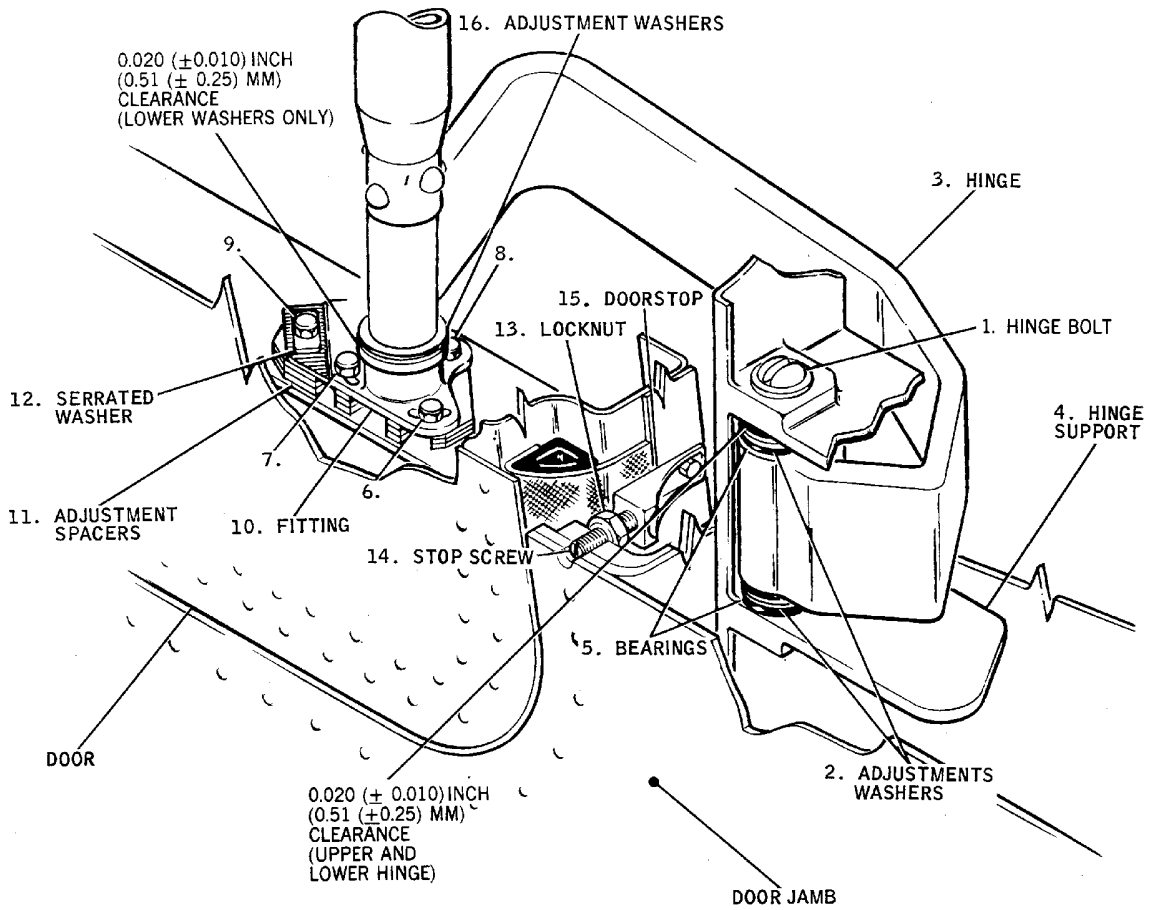
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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**NOTE:** LOWER HINGE ADJUSTMENTS SHOWN. UPPER HINGE ADJUSTMENTS IDENTICAL.



BBB2-52-47B

**Forward Service Door -- Adjustment  
Figure 501/52-41-00-990-802**

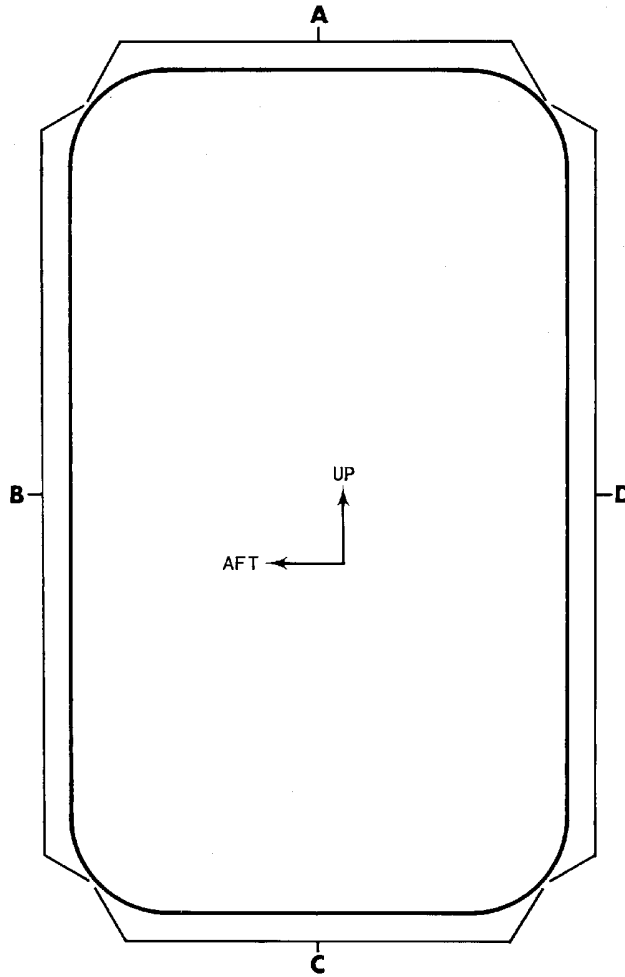
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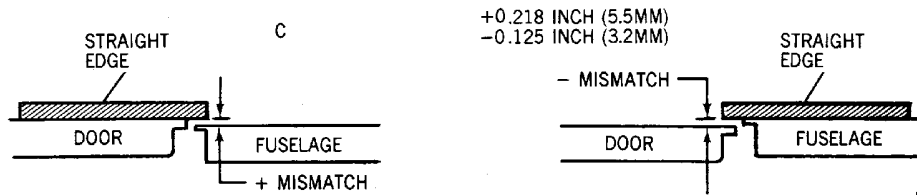
TP-80MM-WJE

Page 506  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



LOCATION	MAXIMUM ACCEPTABLE MISMATCH
A	+0.092 INCH (2.3MM) -0.045 INCH (1.1MM)
B AND D	±.045 INCH (1.1MM)



BBB2-52-48A

**Forward Service Door -- Fair Adjustment  
Figure 502/52-41-00-990-803**

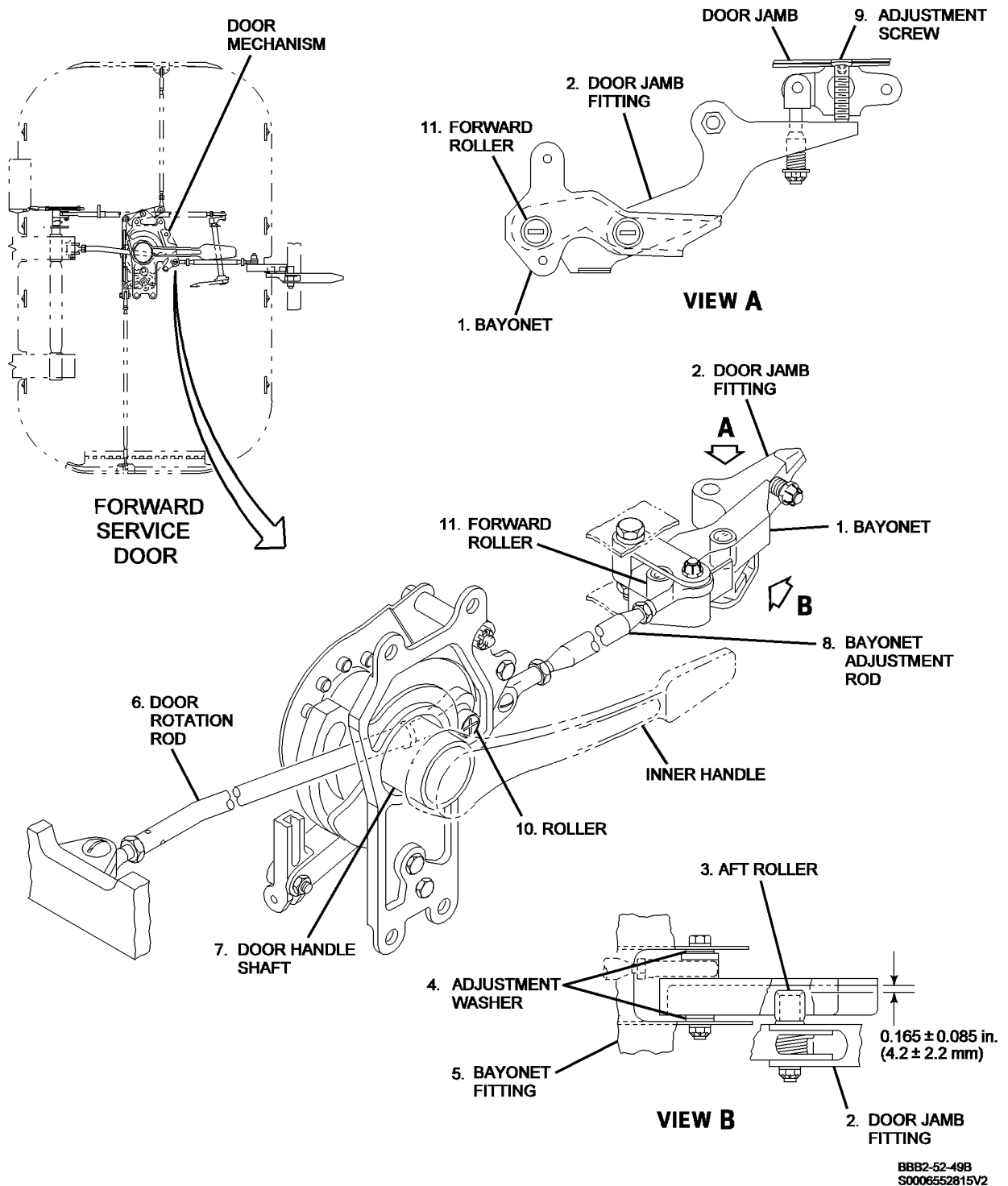
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TP-80MM-WJE

**52-41-00**

Page 507  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

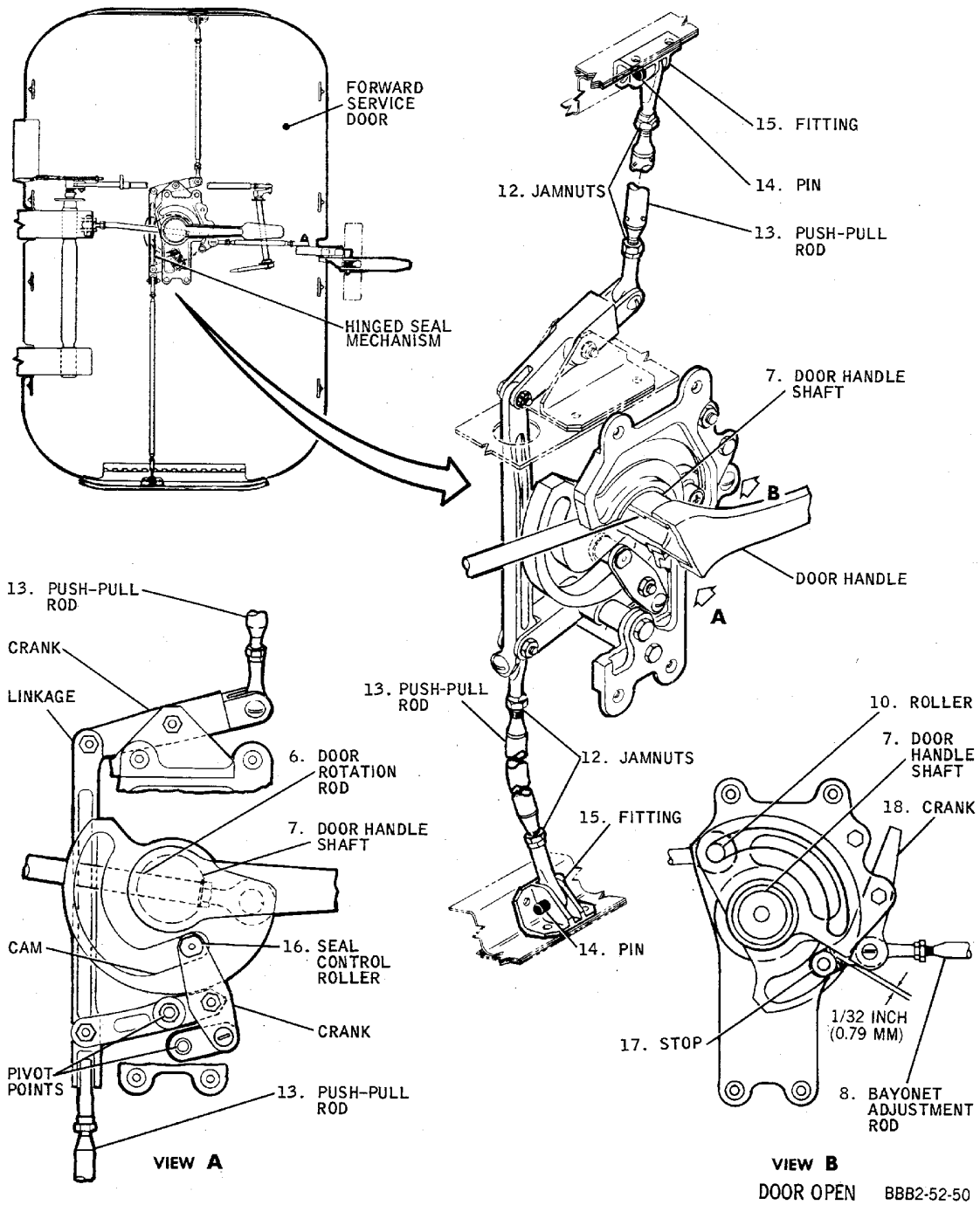


**Forward Service Door Mechanism -- Adjustment  
Figure 503/52-41-00-990-806 (Sheet 1 of 2)**

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**52-41-00**

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



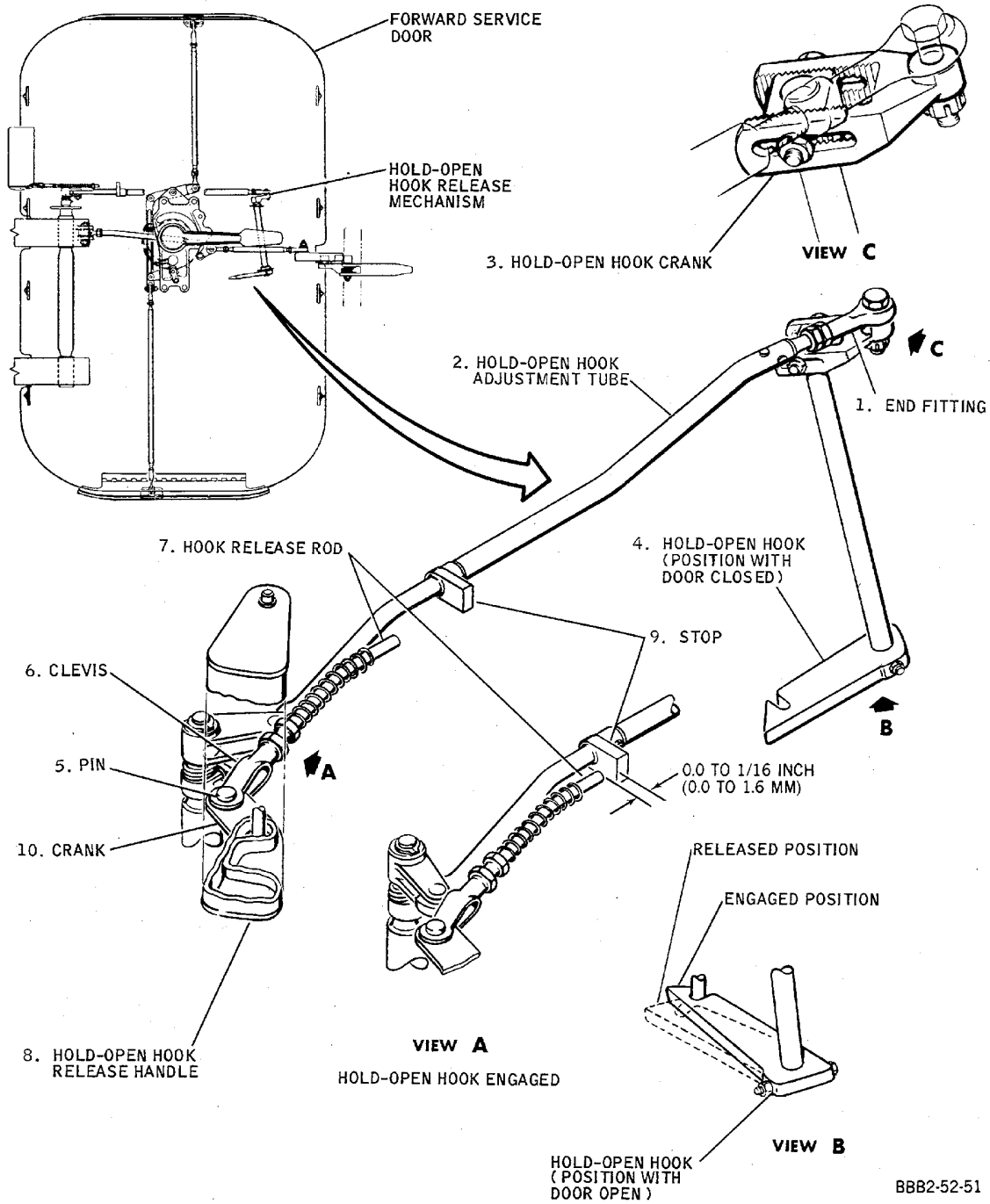
**Forward Service Door Mechanism -- Adjustment  
Figure 503/52-41-00-990-806 (Sheet 2 of 2)**

EFFECTIVITY  
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**52-41-00**

TP-80MM-WJE

MD-80  
AIRCRAFT MAINTENANCE MANUAL



8882-52-51

Forward Service Door Hold-Open Hook -- Adjustment  
Figure 504/52-41-00-990-807

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52-41-00

TP-80MM-WJE

Page 510  
Feb 01/2015



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**  
**FORWARD SERVICE DOOR - ADJUSTMENT/TEST**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 52-41-00-720-801**

**2. Functional Check of the Forward Service Door Stop and Set Screws (Torque Door Stop Set Screw and Locknut)**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
52-41-00 P/B 501	FORWARD SERVICE DOOR - ADJUSTMENT/TEST

**B. Tools/Equipment**

Reference	Description
STD-1016	Wrench - Torque, 0 to 300 in-lbs (0 to 33.89 N·m)

**C. Consumable Materials**

NOTE: Equivalent replacements are permitted for the items that follow.

NOTE: It is possible that some materials in the Consumable Materials chart cannot be used for some or all of the necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Reference	Description	Specification
A60127	Sealant - Polysulfide, Aluminized	DMS 1819
B60104	Solvent - Sealant Remover	DPM 6410
G60085	Cloth - Low Lint	MIL-C-24671

**D. Prepare for Functional Check of the Forward Service Door Stop and Set Screw Assemblies**

SUBTASK 52-41-00-010-001

(1) Open the forward service door.

SUBTASK 52-41-00-110-001

(2) Find each of the door stops and remove the sealant from the set screw access holes on the doorjamb.

**WARNING:** SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-41-00**

Config 1  
Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (a) Use a low lint cloth, G60085 moist with sealant remover solvent, B60104 and clean the set screws and set screw access holes.

### E. Functional Check of the Forward Service Door Stop and Set Screw Assemblies

SUBTASK 52-41-00-720-001

- (1) Do a functional check of the door stop and set screw assemblies.
- (a) Loosen the locknuts on each of the set screws.
- (b) Apply approximately 2 in-lb (0.23 N-m) torque to each set screw.
- 1) If no movement is noticed, proceed to the next step.
  - 2) If movement is noticed, threads, are worn-out and set screw should be replaced.  
NOTE: Adjust door fair if set screw is replaced. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
- (c) Check the torque on the locknut.
- 1) Turn the locknut on the set screw. You should not be able to turn the locknut with resistance to flat portion of the door being felt.
    - a) If resistance is felt, proceed to the next step.
    - b) If no resistance is felt, locknut has lost torque value and should be replaced.  
NOTE: Adjust door fair is locknut is replaced. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
- (d) Torque each of the locknuts as follows:
- 1) Hold the set screw to prevent rotation and with a torque wrench, STD-1016 torque each locknut to 100 in-lb (11 N-m) to 140 in-lb (16 N-m).

### F. Job Close-up

SUBTASK 52-41-00-390-001

**WARNING:** SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-41-00**

Config 1  
Page 502  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(1) Use a low lint cloth moist with sealant remover solvent and clean the set screws and the set screw access holes.

**WARNING:** POLYSULFIDE ALUMINIZED SEALANT IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN POLYSULFIDE ALUMINIZED SEALANT IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET POLYSULFIDE ALUMINIZED SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(2) Seal the exterior holes with aluminized polysulfide sealant, A60127.

SUBTASK 52-41-00-942-001

(3) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-41-00**

Config 1  
Page 503  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD SERVICE DOOR - CHECK

### 1. General

- A. This maintenance practice provides check instructions for the forward service door.
- B. The applicable checks only should be performed when the door is reinstalled, a new seal is installed on the door, or the door or door mechanism is adjusted. The entire check should be performed when a new door is installed.

### 2. Check Forward Service Door

- A. Check Door

**Table 601**

Operation	Result	Correction
<b>NOTE:</b> If the result in the Result column is not obtained, refer to the Correction column for corrective action.		
(1) Close and lock door	Door faired with fuselage skin and stop screws contact all doorstops when fuselage is pressurized.	Adjust door stop screws. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
	Gap between door skin and fuselage skin is constant and does not exceed 3/8-inch (9.5 mm).	Adjust door. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
	Bayonet mates with rollers on doorjamb fitting and rollers clear bayonet by 0.165(±0.085) inch (4.2(±2.2) mm).	Adjust bayonet. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
	When fuselage is pressurized, bayonet does not pick up pressurization load.	Adjust bayonet or fitting on doorjamb. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
	Stop screws contact face of doorstops greater than 5/32 inch (3.97 mm) from any edge of doorstop face.	Adjust door. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
	Door is properly weather sealed.	Adjust seal mechanism or door mechanism. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
<b>NOTE:</b> A door is properly weather sealed when a full stream of water, from a 3/4-inch (19.1 mm) diameter hose, is directed on fuselage above door and no water drops inboard of threshold drain pan and water depth does not exceed 1/4 inch (6.4 mm) at drain opening in threshold drain pan.		
(2) Lock and unlock door several times	Hand load required to lock or unlock door does not exceed 40 pounds (18 kg) when applied to inner door handle.	Adjust door mechanism. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
(3) Open and close door several times	Upper and lower seals clear doorjamb structure when door is opened and closed.	Adjust seal mechanism. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)
	Bayonet clears doorjamb when door is opened and closed.	Adjust bayonet. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)

EFFECTIVITY  
WJE ALL

# 52-41-00

TP-80MM-WJE

Page 601  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 601 (Continued)**

Operation	Result	Correction
	Hold-open hook fully engages pin in fuselage when door is full open. Hook disengages when release handle is actuated. Hook retracts flush with door skin when door is closed and locked.	Adjust hold open hook. (FORWARD SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-41-00/501)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-41-00**

Page 602  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES

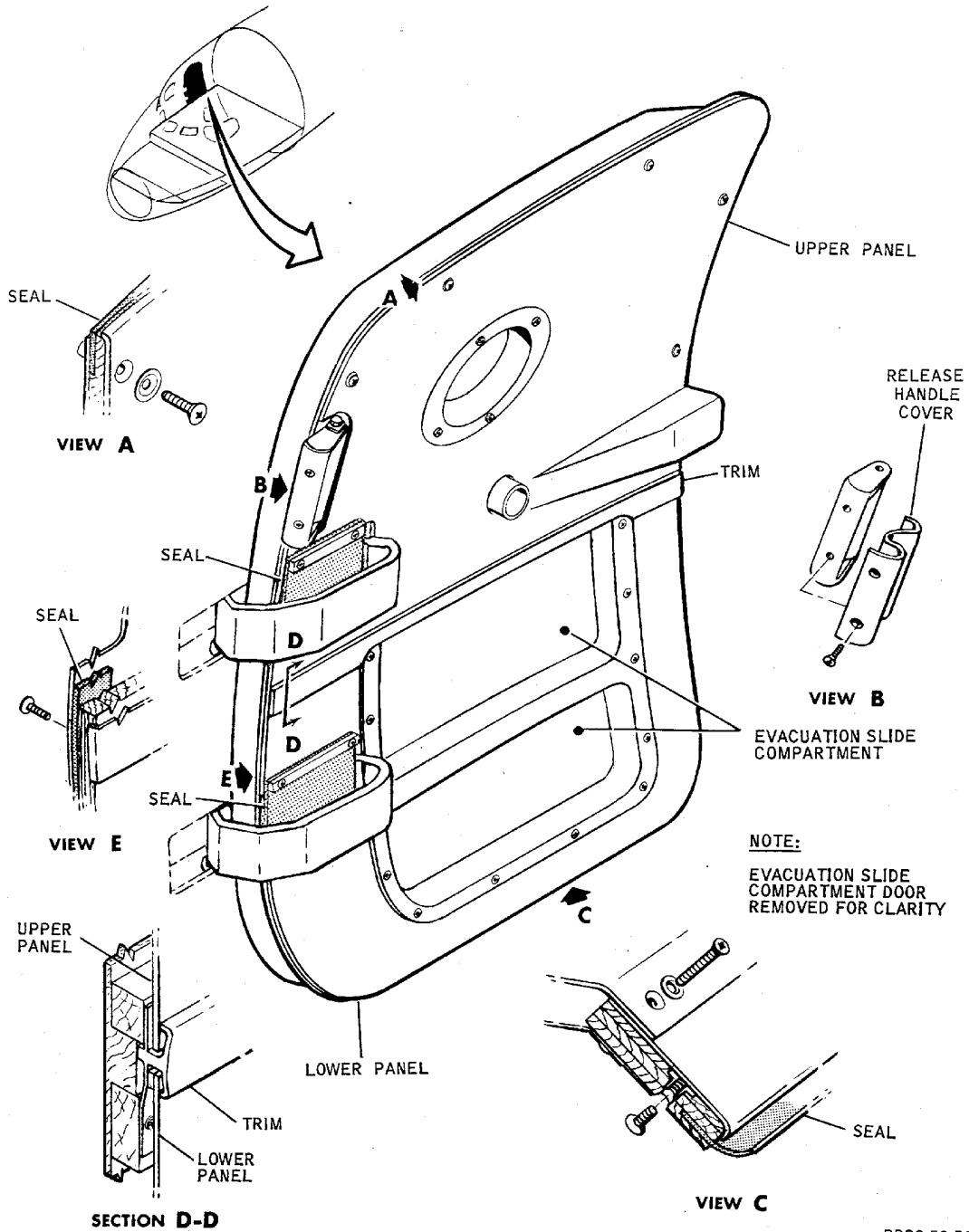
#### 1. General

- A. This maintenance practice provides removal/installation instructions for the forward service door lining upper and lower panels. (Figure 201)
- B. The door lining is divided into two parts to permit access to various parts of the door mechanism and door structure for maintenance without removing all the lining.
- C. The upper panel contains the window, and covers the main components of the door actuating mechanism. The panel may be removed without opening the door.
- D. The lower panel covers the lower seal linkage and the lower hinge.
- E. The evacuation slide compartment is located in, and removed prior to removal of the lower panel.

#### 2. Removal/Installation Forward Service Door Lining

- A. Remove Door Lining Upper Panel
  - (1) Remove pin attaching door handle to door mechanism shaft, and remove handle.
  - (2) Remove attach screws along outer edge of panel, and pull panel away from door.
- B. Install Door Lining Upper Panel
  - (1) Position panel on door and install attaching screws along outer edge of panel.
  - (2) Position door handle on door mechanism shaft and install pin.
- C. Remove Door Lining Lower Panel
  - (1) Remove evacuation slide from service door. (PAGEBLOCK 25-62-00/201)
  - (2) Remove screws attaching evacuation slide compartment to door and remove compartment.
  - (3) Open door.
  - (4) Remove attaching screws along outer edge of panel, and pull panel away from door.
- D. Install Door Lining Lower Panel
  - (1) Position panel on door and install attaching screws along edge of panel.
  - (2) Position evacuation slide compartment on door and install attaching screws.
  - (3) Install evacuation side on service door. (PAGEBLOCK 25-62-00/201)

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-52

**Forward Service Door Lining -- Installation**  
Figure 201/52-41-01-990-801

**EFFECTIVITY**

WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891

TP-80MM-WJE

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**52-41-01**

Config 1  
Page 202  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD SERVICE DOOR LINING - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the forward service door lining. (Figure 201)
- B. The door lining is a single piece with a hinged cover for the evacuation slide compartment.

#### 2. Removal/Installation Forward Service Door Lining

##### A. Remove Door Lining

- (1) Remove evacuation slide from service door. (PAGEBLOCK 25-62-00/201)
- (2) Remove pin attaching door handle to door mechanism shaft, and remove handle.
- (3) Open door.
- (4) Remove screws in evacuation slide compartment attaching liner to door.
- (5) Remove attach screws along outer edge of panel, and pull panel away from door.

##### B. Install Door Lining

- (1) Position panel on door and install attaching screws along outer edge of panel.
- (2) Install attaching screws in evacuation slide compartment.
- (3) Position door handle on door mechanism shaft and install pin.
- (4) Install evacuation slide on service door. (PAGEBLOCK 25-62-00/201)

#### EFFECTIVITY

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

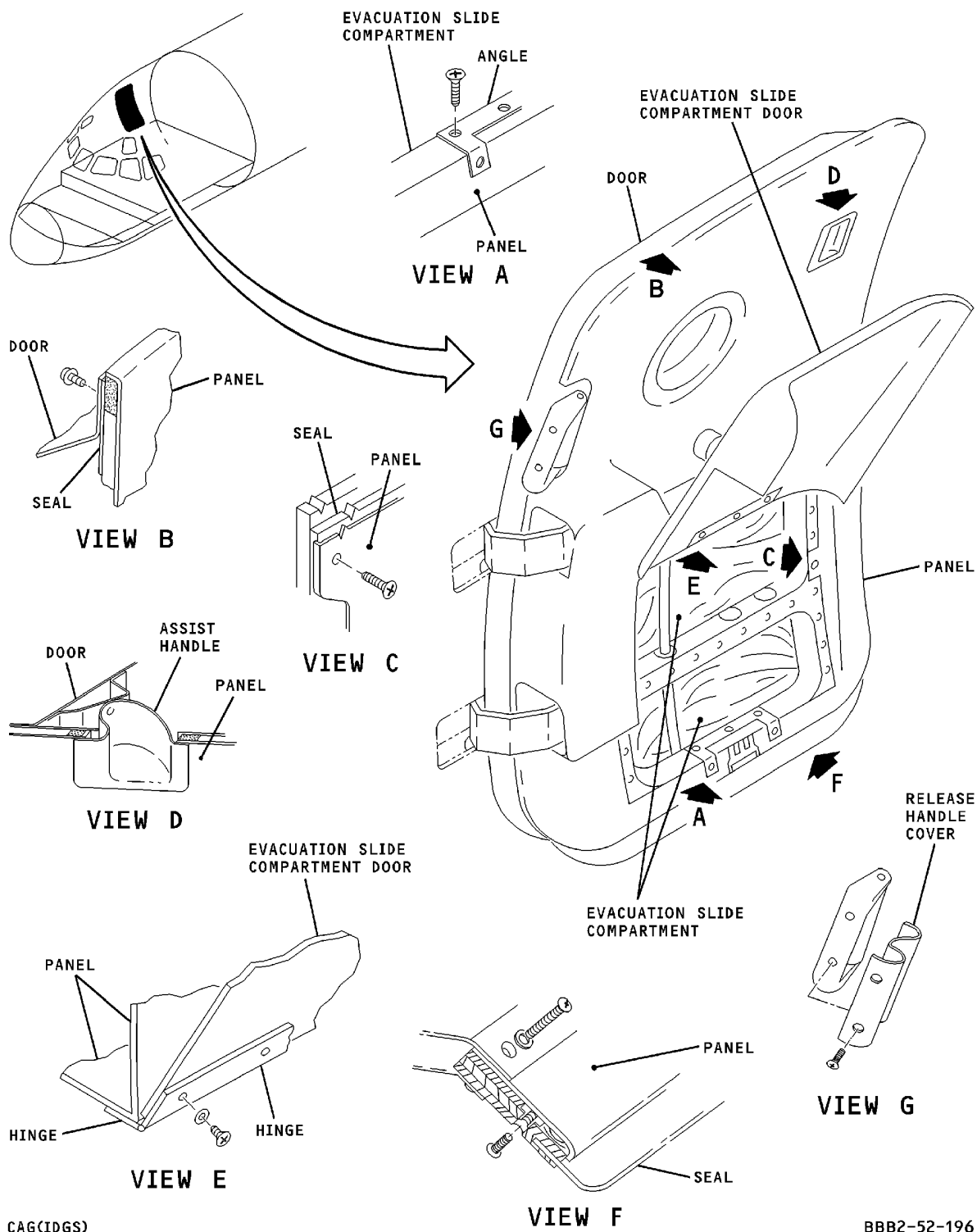
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# 52-41-01

Config 2  
Page 201  
Feb 01/2016



# MD-80 AIRCRAFT MAINTENANCE MANUAL



Forward Service Door Lining -- Installation  
Figure 201/52-41-01-990-803

**EFFECTIVITY**

WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

TP-80MM-WJE

**52-41-01**

Config 2  
Page 202  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD SERVICE DOOR SEAL - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation instructions for the forward service door seal. (Figure 201)
- B. The service door seal may be removed with the door installed on the aircraft; however, it is extremely difficult to install the seal without removing the door.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Ice Pick	Commercially available

### 3. Removal/Installation Forward Service Door Seal

#### A. Remove Seal

- (1) Remove forward service door. (PAGEBLOCK 52-41-00/401)

**CAUTION:** FELT PAD OR SIMILAR MATERIAL SHOULD BE USED TO PROTECT FINISH ON OUTBOARD SIDE OF DOOR.

- (2) Position door on suitable support with inboard side up.
- (3) Remove doorstops.
- (4) Remove outer retainers.  
NOTE: Retainers should be identified to facilitate installation.
- (5) Disconnect push-pull rods from fittings on upper and lower hinged seal sections.
- (6) Fold seals back and remove sponge rubber filler.
- (7) Remove inner retainers.  
NOTE: Retainers should be identified to facilitate installation.

- (8) Remove screws attaching hinge of upper and lower hinged seal sections to door.
- (9) Pull seals away from door.

#### B. Install Seal

- (1) Check that doorframe in area where seals are to be installed is clean and free of chips and burrs which may cause wear or damage to seals.
- (2) Check seal retainers for nicks and burrs which may cause wear or damage to seals.  
NOTE: If new seal retainers are to be installed, check that holes in retainers will align with holes in doorframe and that retainers are flush with door structure.
- (3) Place seals in position with outer seal against door surface and stitched edge toward inside face of door.

NOTE: Position seal so that two splices (identified by cross stitching) are at top and bottom of door.

EFFECTIVITY	
WJE ALL	

# 52-41-02

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (4) Lay inner retainer in position along forward or aft edge of door.  
NOTE: Either the forward or aft edge of the door may be used as a starting point.
- (5) Using ice pick, or other suitable tool, locate nuts in door corresponding to hole at each end of retainer, and pin retainer in place.
- (6) Using ice pick to locate nuts, pin retainer at third hole from each end.
- (7) Locate second hole from each end and install screws.  
NOTE: If new seals are being installed, cut holes with leather punch or similar tool.
- (8) Locate remaining nuts and pin retainer in place, making certain that seals are not stretched or bunched up between holes.
- (9) Locate (or cut) holes in seals and install attach screws, making certain that pins are not removed until adjacent screws have been installed.
- (10) Repeat Paragraph 3.B.(5) through Paragraph 3.B.(9) for remaining retainers on forward and aft edges of door. Work seals evenly around corners, being careful not to stretch, wrinkle, or allow bulges in seals.
- (11) Position upper (or lower) hinged seal section on seals.
- (12) Using ice pick or similar tool, locate nuts in door corresponding to holes at ends of hinge, and pin hinge in place.
- (13) Locate remaining nuts and pin hinge in place, making certain that seals are tight but not stretched or bunched up between holes.
- (14) Locate (or cut) holes in seals and install attach screws, making certain that pins are not removed until adjacent screws are installed.
- (15) Repeat Paragraph 3.B.(11) through Paragraph 3.B.(15) for upper or lower hinge.
- (16) Position sponge rubber filler between seals.
- (17) Starting at center of forward or aft edge of door, pull seals evenly in place, and locate nuts and pin seals in place. Seals should be tight but not stretched.
- (18) Locate (or cut) hole in seals and install retainer.
- (19) Repeat Paragraph 3.B.(17) and Paragraph 3.B.(18) for remaining retainers on forward and aft edges and corners of door.
- (20) Connect push-pull rods to upper and lower hinged seal sections.
- (21) Actuate bayonet to unlock door handle, and then rotate door handle to door closed and locked position.  
NOTE: The hinged seal sections must be in the door closed position to install the seals at the upper and lower edges of the door.
- (22) Starting at center of upper or lower hinged seal section, pull seals evenly in place, and locate nuts and pin seals in place. Seals should be tight but not stretched.
- (23) Locate (or cut) holes in seals and install retainer.
- (24) Repeat Paragraph 3.B.(22) and Paragraph 3.B.(23) for opposite hinged seal section.  
  
**CAUTION: EXERCISE CARE WHEN TRIMMING SEALS TO PREVENT CUTTING OR SCRATCHING DOORFRAME.**
- (25) When all retainers have been installed, trim edge of seals flush with edge of retainers.
- (26) Install doorstops.
- (27) Install forward service door. (PAGEBLOCK 52-41-00/401)

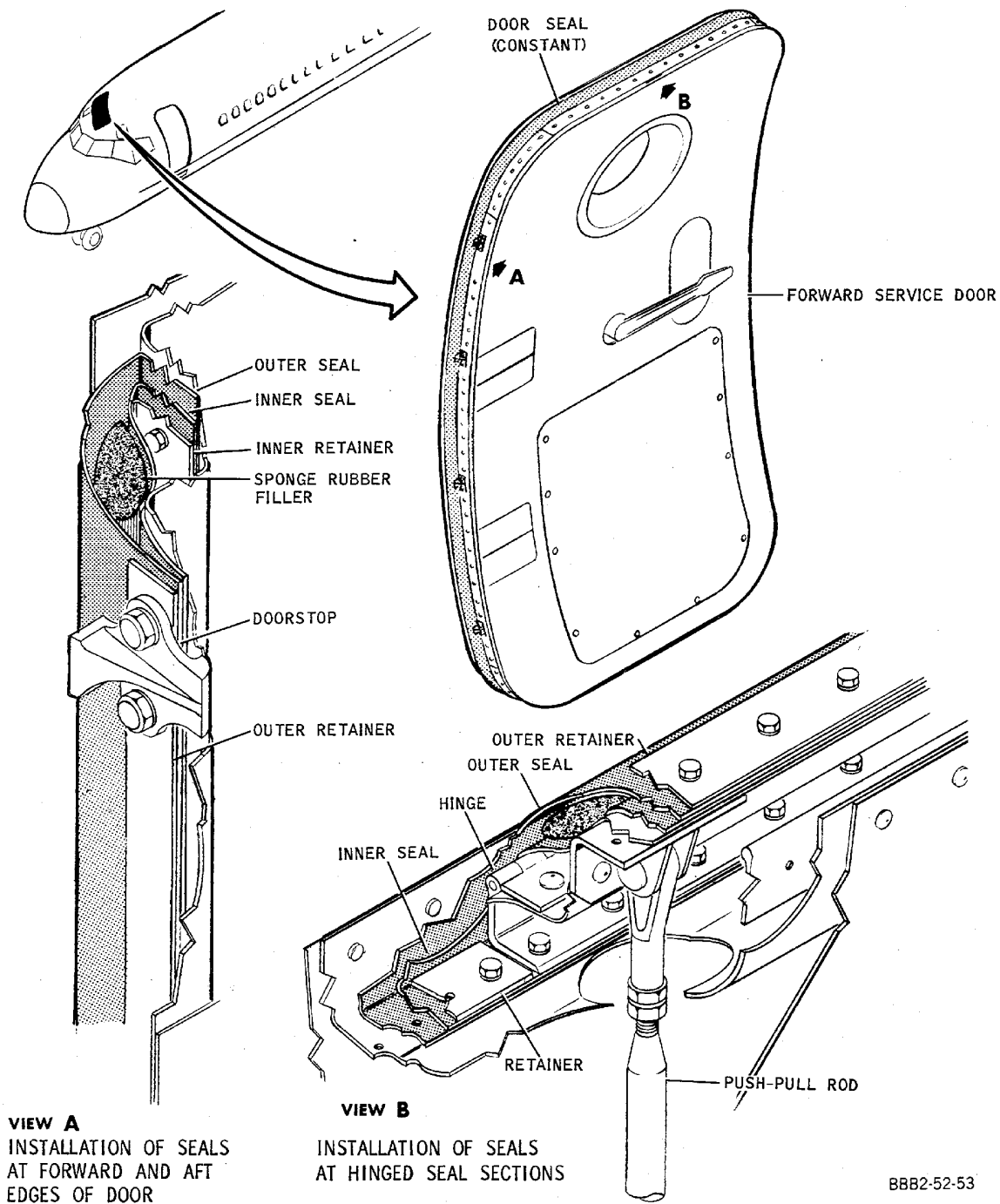
EFFECTIVITY  
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TP-80MM-WJE

**52-41-02**

Page 202  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Forward Service Door Seal -- Installation  
Figure 201/52-41-02-990-801**

EFFECTIVITY  
WJE ALL

**52-41-02**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AFT SERVICE DOOR - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the aft service door.  
(Figure 401)

#### 2. Removal/Installation Aft Service Door

##### A. Remove Door

- (1) Open aft service door.
- (2) Remove evacuation slide from door. (PAGEBLOCK 25-62-00/201)
- (3) Remove hinge cover from doorjamb.
- (4) Remove bolt from upper hinge, handle, and snubber cylinder link. Remove link and install bolt in hinge and handle.
- (5) Remove bolt from lower hinge and spring guide shaft.
- (6) Determine and note number of shim washers installed between hinges and hinge supports.

**WARNING:** AFT SERVICE DOOR WEIGHS APPROXIMATELY 138 POUNDS (62.6 KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (7) Support door and remove bolts and shim washers from between hinges and hinge supports and remove door.

##### B. Install Door

**WARNING:** AFT SERVICE DOOR WEIGHS APPROXIMATELY 138 POUNDS (62.6 KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING THE DOOR.

- (1) Position door in door opening.

**NOTE:** When installing a new door the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

- (2) Position hinges in hinge supports and temporarily install hinge bolts.
- (3) If door removed in Paragraph 2.A. is being installed and adjustments have not been changed proceed with Paragraph 2.B.(5). If adjustments were changed or new door is being installed, proceed with Paragraph 2.B.(4).
- (4) Adjust door. (PAGEBLOCK 52-42-00/501)
- (5) Support door and remove upper hinge bolt.
- (6) Install shim washers noted in Paragraph 2.A.(6) between hinge and hinge support. Install upper hinge bolt head down and lower hinge bolt head up.
- (7) Adjust snubber rod end. (PAGEBLOCK 52-42-00/501)
- (8) Remove bolt from hinge and connect snubber cylinder link and handle to hinge with bolt.
- (9) Repeat Paragraph 2.B.(5) and Paragraph 2.B.(6) for lower hinge.
- (10) Install bolt connecting spring guide shaft to lower hinge.
- (11) Check door operation. (PAGEBLOCK 52-42-00/601)
- (12) Check door warning system.  
(PAGEBLOCK 52-70-01/201 Config 1)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-42-00

Page 401  
Feb 01/2016

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

AFT SERVICE DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES,  
PAGEBLOCK 52-70-01/201 Config 2

- (13) Install evacuation slide on door. (PAGEBLOCK 25-62-00/201)
- (14) Install hinge cover on doorjamb.

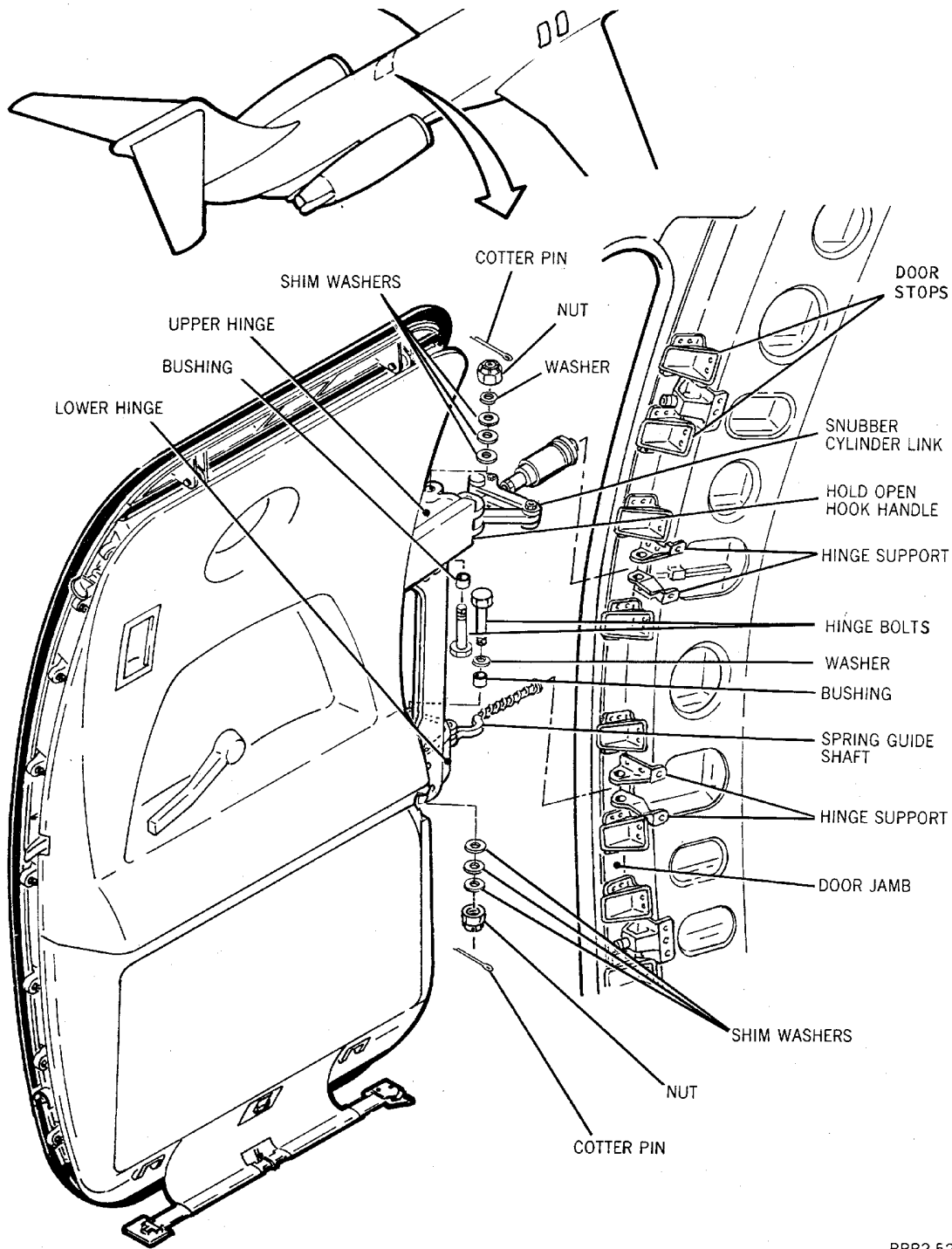
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-42-00**

Page 402  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-87A

**Aft Service Door -- Installation  
Figure 401/52-42-00-990-801**

EFFECTIVITY  
WJE ALL

**52-42-00**

TP-80MM-WJE

Page 403  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AFT SERVICE DOOR - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practice provides adjustment/test instructions for the aft service door.
- B. The aft service door adjustment procedures provide the instructions necessary to position the door correctly and to adjust the door control mechanisms.
- C. The door must be adjusted vertically before adjusting the door control mechanism or fairing the door with the fuselage. Fairing the door is necessary only when installing a new door or when setscrew adjustment has been altered.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Adapter, torque 4916787-1	Douglas Aircraft Co.
Torque wrench (0-600 inch-pounds range)	Commercially available
Weight, 30 pounds (13.6 Kg)	

#### 3. Adjustment/Test Aft Service Door

NOTE: Before adjusting door, check that door is properly lubricated. (PAGEBLOCK 12-21-01/301)

NOTE: When adjusting door, check the integrity of the locknut(s) being tightened for its self locking feature before continuing adjustment procedure. (PAGEBLOCK 20-30-01/201)

NOTE: To rig door properly, a 30 pound (13.6 kg) weight must be installed on door to simulate weight of slide raft.

##### A. Adjust Door (Vertically)

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

- (1) Open door.
- (2) Remove hinge cover.

**WARNING:** AFT SERVICE DOOR WEIGHS APPROXIMATELY 138 POUNDS (62.6 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (3) Support door and remove upper and lower hinge bolts.
- (4) Insert hinge bolt and install shim washers (1) between lower hinge (2) and lower flange of doorjamb hinge fitting (3) to maintain 0.150(±0.060) inch (3.8(±1.52) mm) gap between door skin and doorjamb top and bottom. Bolt must be oriented as shown.

NOTE: A maximum gap of 0.150 (+0.100, -0.060) inch (3.8 (+2.54, -1.52) mm) is permissible, if required.

EFFECTIVITY  
WJE ALL

## 52-42-00

TP-80MM-WJE

Page 501  
Feb 01/2016



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (5) Insert hinge bolt and install shim washers (1) between upper hinge (2) and upper flange of doorjamb hinge fitting (3) to fill existing gap between hinge and support. Bolt must be oriented as shown.
- (6) Secure hinge bolts.  
NOTE: Make certain that bolts are oriented as shown.
- (7) Install hinge cover on doorjamb.
- (8) Check that seal across lower seal gate does not hang up on floor pan just inside door opening.

### B. Unpressurized Door Water Seal Adjustment

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

NOTE: This adjustment applies to later aircraft with adjustable hinges only.

- (1) Remove hinge cover.
- (2) Position door in center of door opening by adding upper and lower doorjamb hinge fitting shims (11) to move door aft, or remove upper and lower doorjamb hinge fitting shims to move door forward. Gap should be 0.150 ( $\pm 0.060$ ) inch (3.8 ( $\pm 1.52$ ) mm) between door and fuselage skin on forward and aft sides.  
NOTE: A maximum gap of 0.150 (+0.100, -0.060) inch (3.8 (+2.54, -1.52) mm) is permissible, if required.
- (3) Adjust upper and lower slotted hole hinge fittings (3) to move door inward or outward and provide unpressurized water seal when door is closed.
- (4) Install hinge cover on doorjamb.
- (5) Check door warning system. (AFT SERVICE DOOR PROXIMITY SWITCH, SUBJECT 52-70-01, page 201)

**WJE 401-412, 414-419, 421, 423, 425, 426, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 892, 893**

### C. Bayonet Adjustment

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

- (1) Check that door is adjusted vertically.
- (2) Loosen bolts attaching roller fitting and move fitting as far inboard as slots and serrations will permit. Temporarily tighten bolts.
- (3) Adjust length of bayonet control pushrod (4) so forward up latches have maximum forward overlap of their respective rollers when door handle (5) is at 90 degree position.
- (4) Operate door and check that bayonet clears doorjamb by 0.0625 inch (1.588 mm) during door movement, and that bayonet does not contact forward roller of roller fitting. Also, check that door aft edge seal does not fold under during door closing.
- (5) Adjust roller fitting outboard to reduce out-of-fair condition of door aft edge to minimum obtainable without interfering with proper operation of bayonet and door seal.
- (6) Tighten roller fitting attach bolts.

**WJE 401-408, 410-412, 414, 415, 417-419, 421, 423, 861, 863-866, 869, 871-881, 883, 886, 887, 892, 893; WJE 409, 416, 420, 422, 424-427, 429, 862, 868, 884, 891 POST MD80-52-153**

### D. Bayonet Adjustment

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

- (1) Check that door is adjusted vertically.
- (2) Loosen bolts attaching roller fitting and move fitting as far inboard as slots and serrations will permit. Temporarily tighten bolts.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-42-00**

Page 502  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-408, 410-412, 414, 415, 417-419, 421, 423, 861, 863-866, 869, 871-881, 883, 886, 887, 892, 893; WJE 409, 416, 420, 422, 424-427, 429, 862, 868, 884, 891 POST MD80-52-153 (Continued)

- (3) Adjust length of bayonet control pushrod (4) so forward up latches have maximum forward overlap of their respective rollers when door handle (5) is at 90 degree position.
- (4) Operate door and check that bayonet clears doorjamb by 0.0625 inch (1.588 mm) during door movement, and that bayonet does not contact forward roller of roller fitting. Also, check that door aft edge seal does not fold under during door closing.
- (5) Adjust roller fitting outboard to reduce out-of-fair condition of door aft edge to minimum obtainable without interfering with proper operation of bayonet and door seal.
- (6) Tighten roller fitting attach bolts.

WJE 409, 416, 420, 422, 424-427, 429, 862, 868, 884, 891 PRE MD80-52-153

### E. Bayonet Adjustment

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

- (1) Check that door is adjusted vertically.
- (2) Remove galley module aft of door. (EQUIPMENT/FURNISHINGS, CHAPTER 25)
- (3) Remove aft doorjamb lining.
- (4) Loosen bolts attaching roller fitting and move fitting as far inboard as slots and serrations will permit. Temporarily tighten bolts.
- (5) Adjust length of bayonet control pushrod (4) so forward up latches have maximum forward overlap of their respective rollers when door handle (5) is at 90 degree position.
- (6) Operate door and check that bayonet clears doorjamb by 0.0625 inch (1.588 mm) during door movement, and that bayonet does not contact forward roller of roller fitting. Also, check that door aft edge seal does not fold under during door closing.
- (7) Adjust roller fitting outboard to reduce out-of-fair condition of door aft edge to minimum obtainable without interfering with proper operation of bayonet and door seal.
- (8) Tighten roller fitting attach bolts and secure with cotter pins.
- (9) Install doorjamb lining.
- (10) Install galley module. (EQUIPMENT/FURNISHINGS, CHAPTER 25)

WJE ALL

### F. Adjust Door Fair

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 501.

NOTE: Aircraft pressurization may be simulated by using C-clamps. Upper and lower, forward and aft, door stops and fittings may be clamped together.

- (1) Open door.
- (2) Loosen locknuts (6) on setscrews (7).
- (3) If setscrews (7) have tab washers (13), replace tab washers. Do not bend tabs at this time.
- (4) Adjust setscrews to fair door skin within  $\pm 0.035$  inch ( $\pm 0.89$  mm) of fuselage skin when door is closed and handle (5) is in closed position. (Figure 502)

NOTE: Setscrew final adjustment should be made with aircraft pressurized.

EFFECTIVITY  
WJE ALL

**52-42-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** WHEN ADJUSTING LOWER GATE SEAL RODS, LOWER GATE MAY APPEAR EXCESSIVELY UNDERFAIRED DUE TO THICKNESS OF SCUFF PLATE. DO NOT ATTEMPT TO ADJUST LOWER GATE OUTWARD TO COMPENSATE FOR SCUFF PLATE. OTHERWISE, CORNERS OF LOWER GATE SEALS MAY BECOME DISLODGED IN FLIGHT.

- (5) Adjust seal gate rods (8) to fair seal gates (9) within +0.120 to -0.035 inch (+3.05 to -0.89 mm) upper and +0.032 to -0.110 inch (+0.81 to -2.79 mm) lower.
- (6) Close and lock door.
- (7) Pressurize fuselage until pressure differential of 3 to 4 psi (20 to 28 kPa) is obtained. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)
- (8) Adjust setscrews (7) until door is faired. All setscrews (7) must contact doorstops (10) when fuselage is pressurized. (Figure 502)
- (9) Depressurize fuselage. (GENERAL, SUBJECT 21-00-00, page 201)
- (10) Open door.
- (11) Hold setscrews (7) and torque locknuts (6) to 160 to 190 inch-pounds (18.1 to 21.5 N·m).
- (12) Tape face of all doorstops (10).
- (13) Close and lock door.
- (14) Pressurize fuselage until pressure differential of 3 to 4 psi (20 to 28 kPa) is obtained. (GENERAL, SUBJECT 21-00-00, Page 1)
- (15) Depressurize fuselage. (GENERAL, SUBJECT 21-00-00, Page 201)
- (16) Open door and check that setscrews (7) contacted face of all doorstops (10), at least 1/4 inch (6.4 mm) from any edge of doorstop face, when fuselage was pressurized.
- (17) If tab washers (13) are installed, bend three tabs over sides and end of door beam; bend fourth tab up to secure locknut (6).
- (18) Remove tape from face of doorstops (10).

### WJE 422, 424, 429

- (19) Install door lining. (PAGEBLOCK 52-42-01/201 Config 1)

### WJE 401-412, 414-421, 423, 425-427, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- (20) Install door lining. (PAGEBLOCK 52-42-01/201 Config 2)

### WJE ALL

- (21) Check door warning system. (AFT SERVICE DOOR PROXIMITY SWITCH, SUBJECT 52-70-01, page 201)

#### G. Adjust Door Mechanisms

NOTE: Numbers in parentheses in the following text correspond to callouts in Figure 503.

### WJE 422, 424, 429

- (1) Remove the door lining. (PAGEBLOCK 52-42-01/201 Config 1)

### WJE 401-412, 414-421, 423, 425-427, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- (2) Remove the door lining. (PAGEBLOCK 52-42-01/201 Config 2)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-42-00

Page 504  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE ALL

- (3) Adjust lower pushrod (1) until hook (2) is perpendicular to the skin  $\pm 2$  degrees ( $\pm 0.0349$  rad).
- (4) Adjust upper pushrod (3) until hook (2) fairs with door skin  $\pm 0.060$  inch ( $\pm 1.5$  mm).

NOTE: Hook should latch into fuselage receptacle without binding and release without binding.

- (5) Adjust pushrod (4) so bayonet cam follower (5) is engaged and locks hinge at maximum rotation.
- (6) Adjust hinge snubber rod end (6) so snubber (7) does not bottom out at either end of stroke.
- (7) Check that hand load required to open or close door does not exceed 30 pounds (13.6 kg) when applied to inner handle.

NOTE: A hand load of 30 pounds (13.6 kg) applied to the inner door handle is equal to 25 foot-pounds (300 inch-pounds) (33.9 N·m) of torque applied to door handle shaft with torque adapter P/N 4916787-1 and a standard torque wrench.

NOTE: For computation of indicated torque for a torque wrench using an adapter, refer to BOLT TORQUE DATA - MAINTENANCE PRACTICES, PAGEBLOCK 20-30-01/201.

- (8) Tighten all jamnuts.

### WJE 422, 424, 429

- (9) Install door lining. (PAGEBLOCK 52-42-01/201 Config 1)

### WJE 401-412, 414-421, 423, 425-427, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- (10) Install door lining. (PAGEBLOCK 52-42-01/201 Config 2)

### WJE ALL

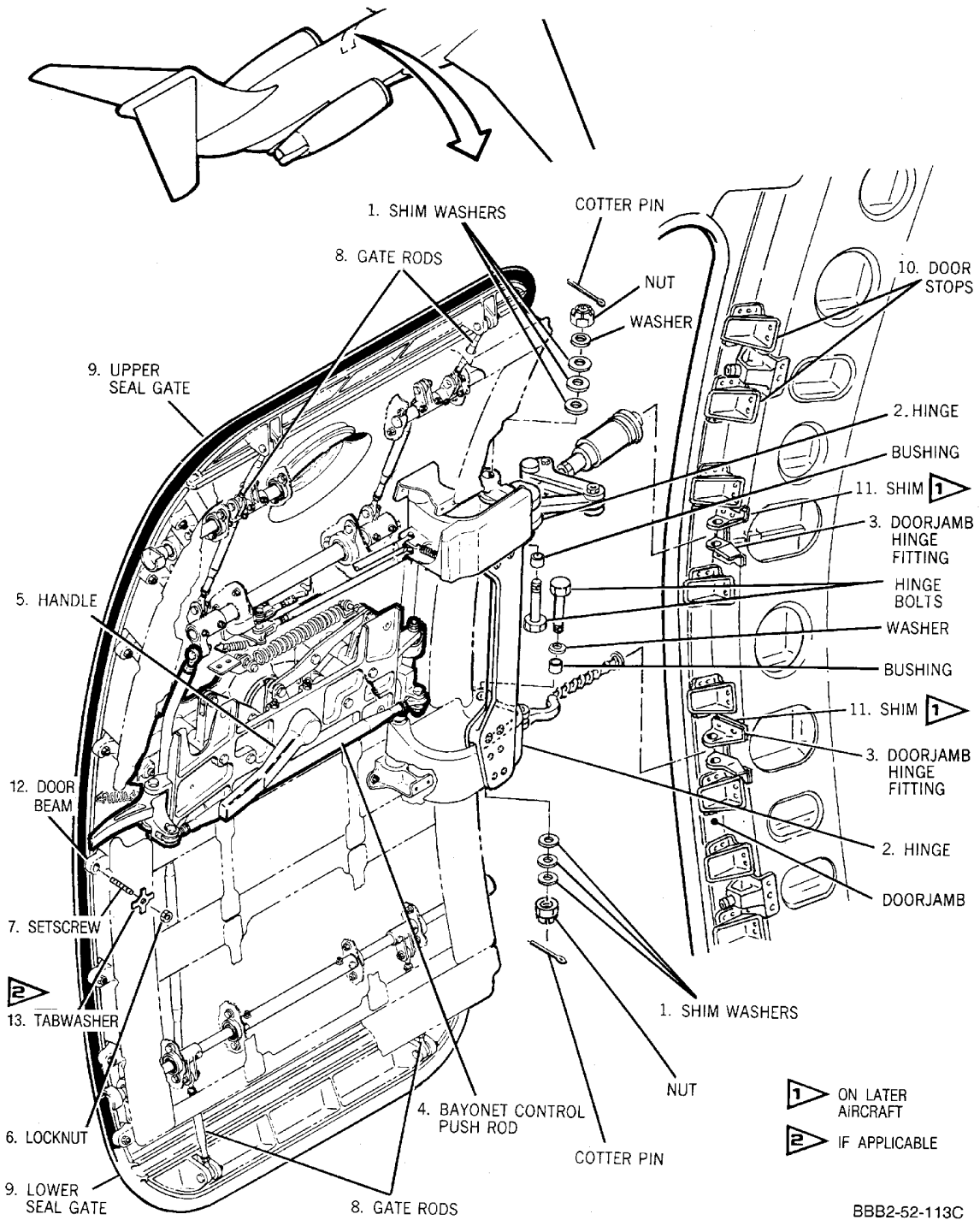
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-42-00

Page 505  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Aft Service Door -- Adjustment  
Figure 501/52-42-00-990-802**

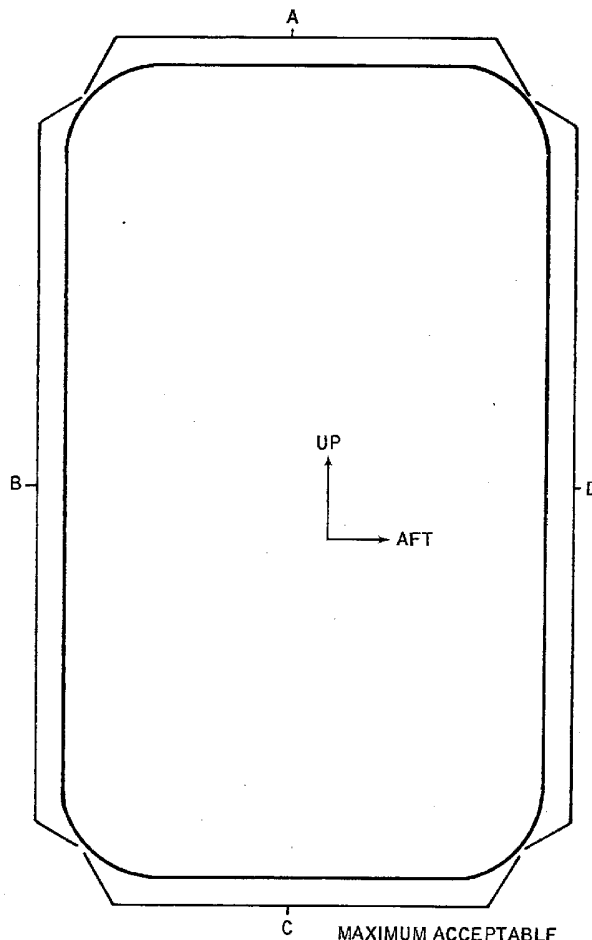
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WJE ALL

**52-42-00**

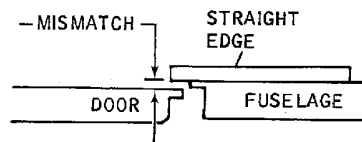
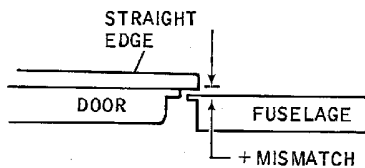
TP-80MM-WJE

Page 506  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



LOCATION	MAXIMUM ACCEPTABLE MISMATCH
A	+ 0.120 INCH (3.05 MM) - 0.035 INCH (0.89 MM)
B AND D	± 0.035 INCH (0.89 MM)
C	+ 0.032 INCH (0.81 MM) - 0.110 INCH (2.79 MM)



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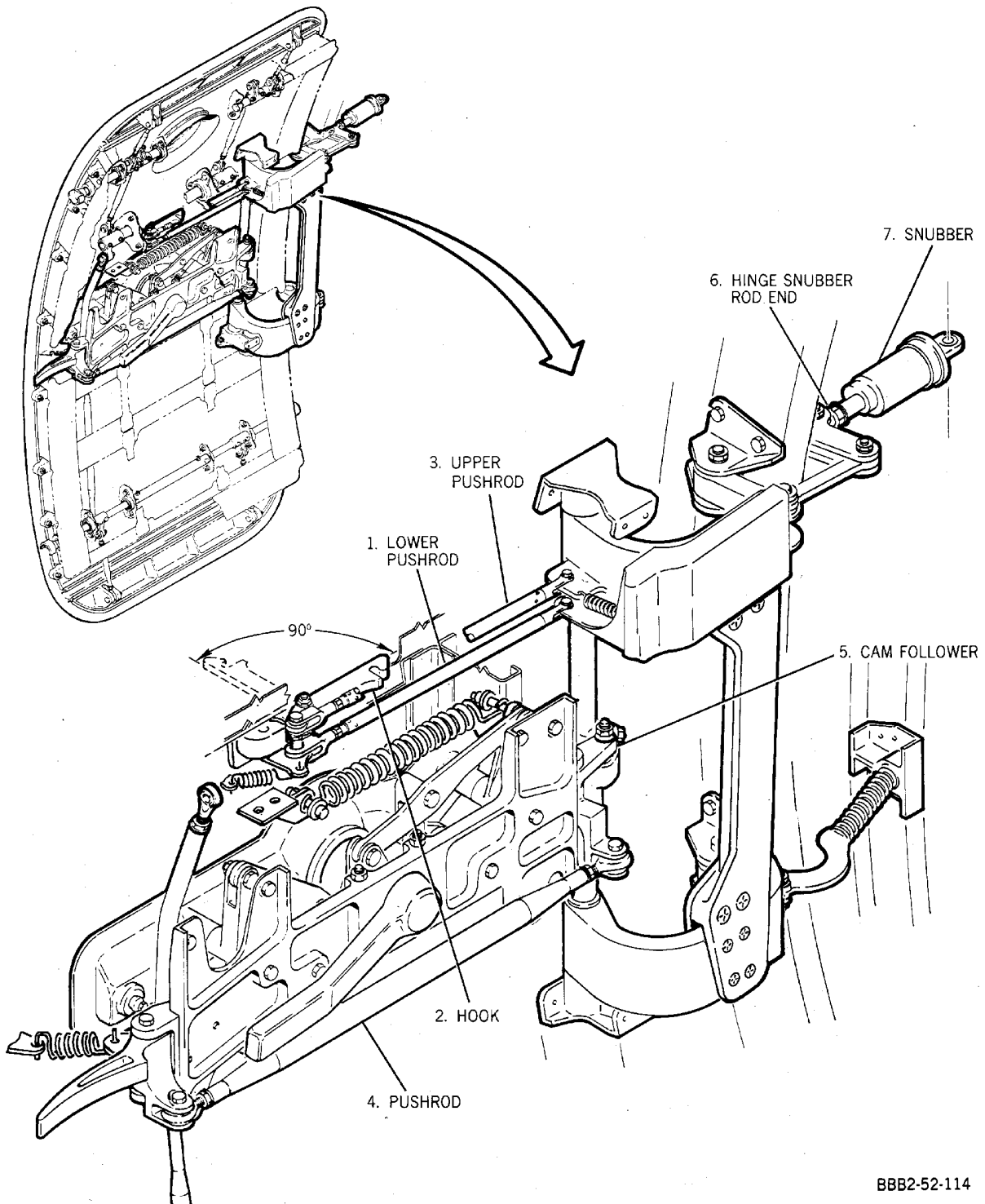
**Aft Service Door -- Fair Adjustment  
Figure 502/52-42-00-990-803**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-42-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-114

**Aft Service Door Mechanism -- Adjustment**  
**Figure 503/52-42-00-990-804**

EFFECTIVITY  
WJE ALL

## 52-42-00

TP-80MM-WJE

Page 508  
Feb 01/2016



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**  
**AFT SERVICE DOOR - ADJUSTMENT/TEST**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 52-42-00-720-801**

**2. Functional Check of the Aft Service Door Set Screws (Torque Door Set Screw and Locknut)**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
52-42-00 P/B 501	AFT SERVICE DOOR - ADJUSTMENT/TEST

**B. Tools/Equipment**

Reference	Description
STD-1016	Wrench - Torque, 0 to 300 in-lbs (0 to 33.89 N-m)

**C. Prepare for Functional Check of the Aft Service Door Set Screw Assemblies**

SUBTASK 52-42-00-010-001

(1) Open the aft service door.

**D. Functional Check of the Aft Service Door Set Screw Assemblies**

SUBTASK 52-42-00-720-001

- (1) Do a functional check of the door set screw assemblies.
  - (a) Loosen the locknuts on each of the set screws.
  - (b) Apply approximately 2 in-lb (0.23 N-m) torque to each set screw.
    - 1) If no movement is noticed, proceed to the next step.
    - 2) If movement is noticed, threads, are worn-out and set screw should be replaced.
 

NOTE: Adjust door fair if set screw is replaced. (AFT SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-42-00/501)
  - (c) Check the torque on the locknut.
    - 1) Turn the locknut on the set screw. You should not be able to turn the locknut with resistance to flat portion of the door being felt.
      - a) If resistance is felt, proceed to the next step.
      - b) If no resistance is felt, locknut has lost torque value and should be replaced.
 

NOTE: Adjust door fair is locknut is replaced. (AFT SERVICE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-42-00/501)
  - (d) Torque each of the locknuts as follows:
    - 1) Hold the set screw to prevent rotation and with a torque wrench, STD-1016 torque each locknut to 160 in-lb (18.1 N-m) to 190 in-lb (21.5 N-m).

**E. Job Close-up**

SUBTASK 52-42-00-390-001

(1) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

EFFECTIVITY WJE ALL
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TP-80MM-WJE

**52-42-00**

Config 1  
Page 501  
Feb 01/2016



# MD-80 AIRCRAFT MAINTENANCE MANUAL

## AFT SERVICE DOOR - CHECK

### 1. General

- A. This maintenance practice provides check instructions for the aft service door.
- B. The applicable checks only should be performed when the door is reinstalled, a new seal is installed on the door, or the door or door mechanism is adjusted. The entire check should be performed when a new door is installed.

### 2. Check Aft Service Door

- A. Check Door

**Table 601**

Operation	Result	Correction
<b>NOTE:</b> If the result in the Result column is not obtained refer to the Correction column for corrective action.		
(1) Close and lock door	Door faired with fuselage skin and setscrews contact all doorstops when fuselage is pressurized.	Adjust door setscrews. (PAGEBLOCK 52-42-00/501)
	Gap between door skin and fuselage skin is 0.150(+0.100, -0.060) inch (3.8(+2.54, -1.52) mm)	Adjust door. (PAGEBLOCK 52-42-00/501)
	Setscrews contact face of doorstops at least 1/4 inch (6.4 mm) from any edge of doorstop face.	Adjust door. (PAGEBLOCK 52-42-00/501)
	Door is properly weather sealed	Adjust seal gate mechanism or door mechanism. (PAGEBLOCK 52-42-00/501)
<b>NOTE:</b> A door is properly weather sealed (unpressurized) when a full stream of water, from a 3/4 inch (19.1 mm) diameter hose, is directed on fuselage above door and no water drops inboard of threshold drain pan and water depth does not exceed 1/4 inch (6.4 mm) at drain opening in threshold drain pan.		
(2) Lock and unlock door several times.	Hand load required to lock or unlock door does not exceed 40 pounds (18 kg) when applied to inner door handle.	Adjust door mechanism. (PAGEBLOCK 52-42-00/501)
(3) Open and close door several times	Upper and lower seals clear doorjamb structure when door is opened and closed.	Adjust seal gate mechanism. (PAGEBLOCK 52-42-00/501)
	Hold-open hook engages pin in fuselage when door is full open. Hook disengages when release handle is actuated. Hook retracts to within ±0.060 inch (±1.5 mm) of door skin when door is closed and locked.	Adjust hold-open hook. (PAGEBLOCK 52-42-00/501).

EFFECTIVITY  
WJE ALL

# 52-42-00

TP-80MM-WJE

Page 601  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AFT SERVICE DOOR LINING - MAINTENANCE PRACTICES

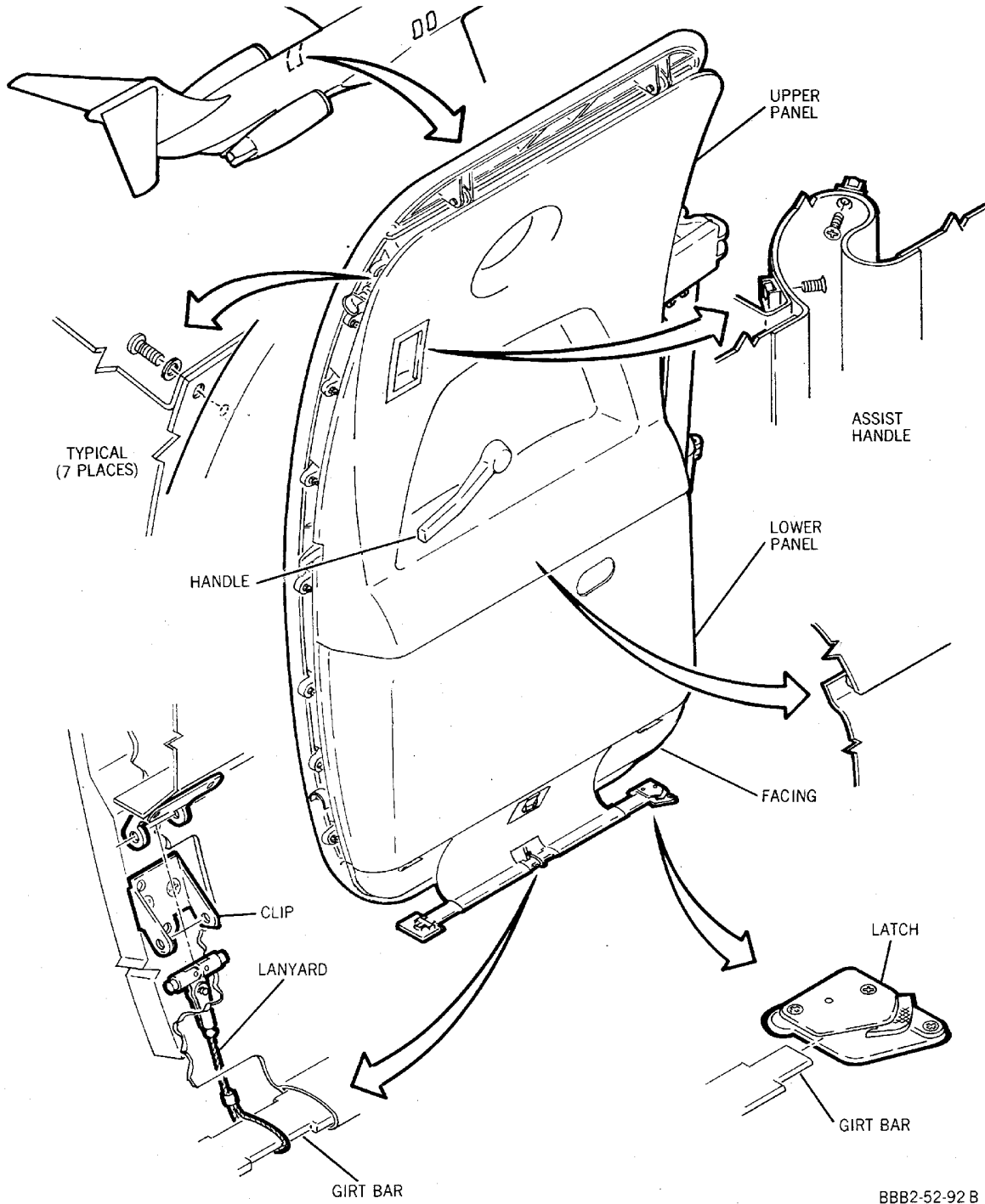
#### 1. General

- A. This maintenance practice provides removal/installation instructions for the aft service door lining upper and lower panels. (Figure 201)
- B. The door lining is divided into two parts to accommodate the evacuation slide.
- C. The upper panel contains the window and covers the main components of the door actuating mechanism. The panel may be removed after opening the door.
- D. The lower panel covers the lower door and hinge. The panel may be removed without opening the door.
- E. The evacuation slide, located outboard of the lower panel, is removed by removal of the lower panel.

#### 2. Removal/Installation Aft Service Door Lining

- A. Remove Door Lining Lower Panel
  - (1) Unstow girt bar.
  - (2) Pull lanyard on girt bar to release latch.
  - (3) Remove lining and evacuation slide. (PAGEBLOCK 25-62-00/201)
- B. Remove Door Lining Upper Panel
  - (1) Open door.
  - (2) Remove pin attaching door handle to door mechanism shaft and remove handle.
  - (3) Remove assist handle attach screws and remove handle.
  - (4) Remove attach screws along outer edge of panel and pull panel away from door.
- C. Install Door Lining Upper Panel
  - (1) Position panel on door and install attaching screws along outer edge of panel.
  - (2) Install assist handle.
  - (3) Position door handle on door mechanism shaft and install pin.
- D. Install Door Lining Lower Panel
  - (1) Position evacuation slide on door and hold in place. (PAGEBLOCK 25-62-00/201)
  - (2) Position lining and install latch pin.
  - (3) Stow girt bar.

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Aft Service Door Lining -- Installation  
Figure 201/52-42-01-990-801

EFFECTIVITY  
WJE 422, 424, 429

TP-80MM-WJE

## 52-42-01

Config 1  
Page 202  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

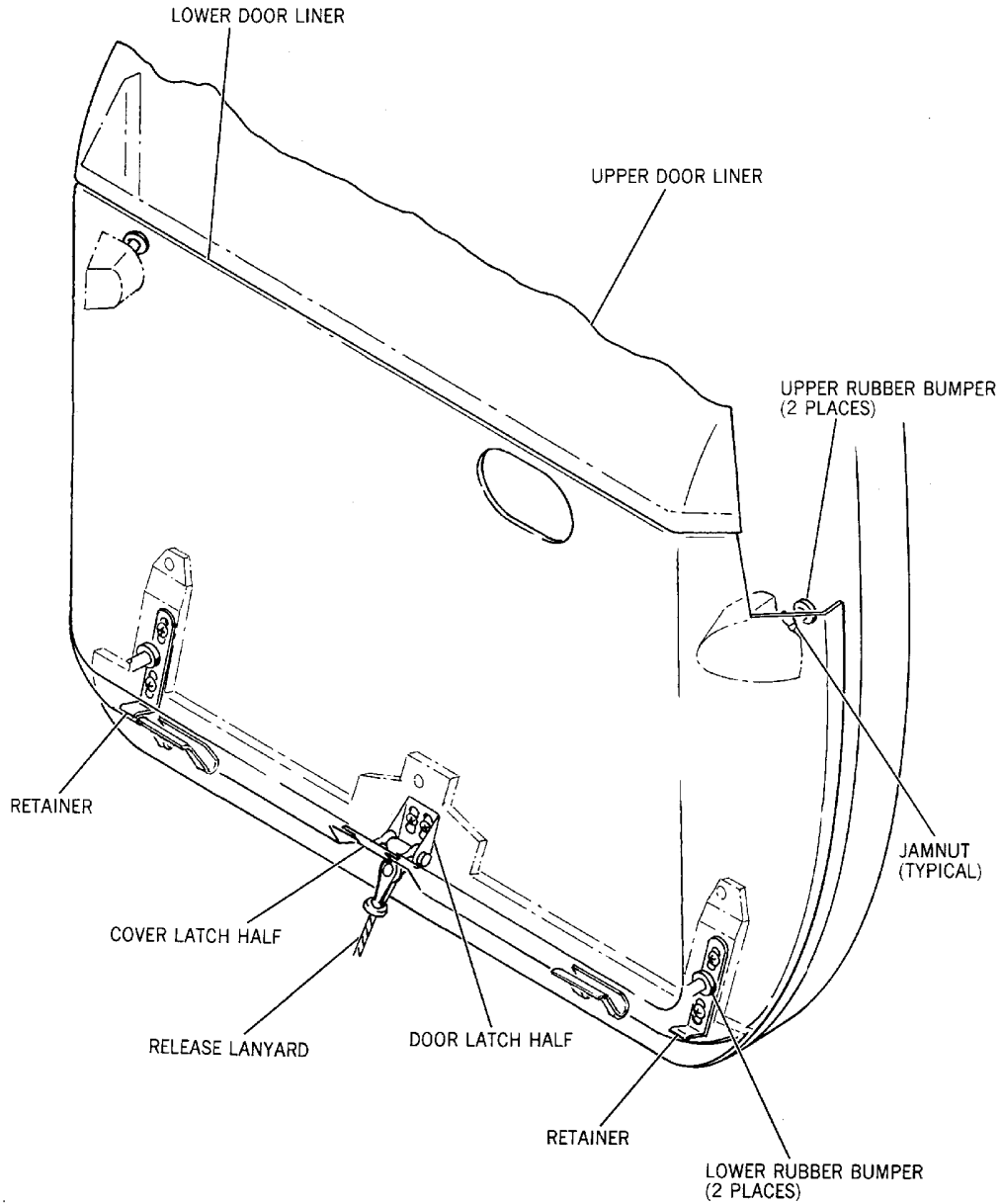
### 3. Adjustment/Test Aft Service Door Lining

NOTE: Adjustment is made with slide pack removed.

#### A. Adjust Aft Service Door Lining

- (1) Remove door lower lining.
- (2) Loosen retainer attaching screws; then tighten snugly until retainers can just be moved up and down with fingers. Pull retainers down.
- (3) Loosen attaching screws on both halves of lanyard latch; then tighten snugly until latch halves can just be moved with fingers.
- (4) Loosen jamnuts on four rubber bumpers.
- (5) Adjust rubber bumpers so they just touch structure when lower lining is held in position.  
NOTE: Lower lining is in position when pushed up snugly against upper lining and sides are flush with door.
- (6) Hold lower lining in position, and adjust lanyard latch until lanyard can be inserted. Check that neither latch half is cocked.
- (7) Gently push retainers up until they contact lining.
- (8) Gently disengage lanyard from latch and remove lower lining.
- (9) Without moving either retainer or latch half, tighten attaching screws.
- (10) Turn rubber bumpers out one full turn and tighten jamnuts.
- (11) Install lower liner and check that retainers and latch halves function correctly.

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-135

**Aft Service Door Lining -- Adjustment**  
**Figure 202/52-42-01-990-802**

EFFECTIVITY  
WJE 422, 424, 429

TP-80MM-WJE

## 52-42-01

Config 1  
Page 204  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AFT SERVICE DOOR LINING - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the aft service door lining upper and lower panels. (Figure 201)
- B. The door lining is divided into two parts to accommodate the evacuation slide.
- C. The upper panel contains the window and covers the main components of the door actuating mechanism. The panel may be removed after opening the door.
- D. The lower panel covers the lower door and hinge. The panel may be removed without opening the door.
- E. The evacuation slide, located outboard of the lower panel, is removed by opening the lower panel.

#### 2. Removal/Installation Aft Service Door Lining

- A. Remove Door Lining Lower Panel
  - (1) Unstow girt bar.
  - (2) Pull lanyard on girt bar to release latch.
  - (3) Remove evacuation slide. (PAGEBLOCK 25-62-00/201)
  - (4) Remove three screws attaching liner to hinge. Remove liner.
- B. Remove Door Lining Upper Panel
  - (1) Open door.
  - (2) Remove pin attaching door handle to door mechanism shaft and remove handle.
  - (3) Remove assist handle attach screws and remove handle.
  - (4) Remove attach screws along outer edge of panel and pull panel away from door.
- C. Install Door Lining Upper Panel
  - (1) Position panel on door and install attaching screws along outer edge of panel.
  - (2) Install assist handle.
  - (3) Position door handle on door mechanism shaft and install pin.
- D. Install Door Lining Lower Panel
  - (1) Position lining and install screws attaching liner to hinge.
  - (2) Position evacuation slide on door and hold in place. (PAGEBLOCK 25-62-00/201)
  - (3) Install latch pin.
  - (4) Stow girt bar.

EFFECTIVITY

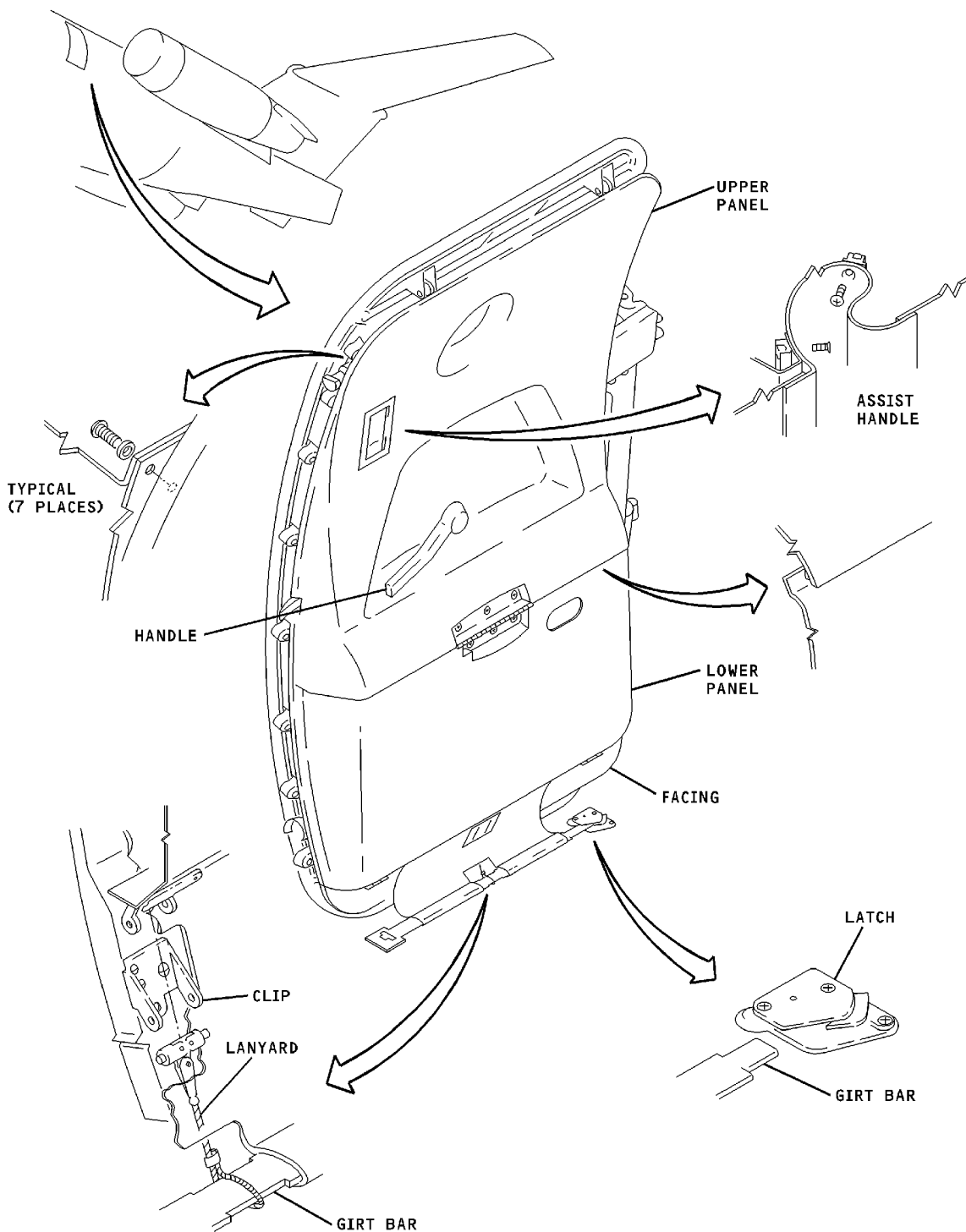
WJE 401-412, 414-421, 423, 425-427, 861-866, 868,  
869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-42-01

Config 2  
Page 201  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IDGS)

BBB2-52-197

**Aft Service Door Lining -- Installation**  
**Figure 201/52-42-01-990-803**

EFFECTIVITY  
WJE 401-412, 414-421, 423, 425-427, 861-866, 868,  
869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

## 52-42-01

Config 2  
Page 202  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Aft Service Door Lining

NOTE: Adjustment is made with slide pack removed.

#### A. Adjust Aft Service Door Lining

- (1) Open door lower lining.
- (2) Loosen attaching screws on both halves of lanyard latch; then tighten snugly until latch halves can just be moved with fingers.
- (3) Loosen jamnuts on four rubber bumpers.
- (4) Adjust rubber bumpers so they just touch structure when lower lining is held closed.
- (5) Hold lower lining in position, and adjust lanyard latch until lanyard can be inserted. Check that neither latch half is cocked.
- (6) Gently disengage lanyard from latch and open lower lining.
- (7) Without moving either latch half, tighten attaching screws.
- (8) Turn rubber bumpers out one full turn (to make longer) and tighten jamnuts.
- (9) Close lower liner and check that latch halves function correctly.

#### EFFECTIVITY

WJE 401-412, 414-421, 423, 425-427, 861-866, 868,  
869, 871-881, 883, 884, 886, 887, 891-893

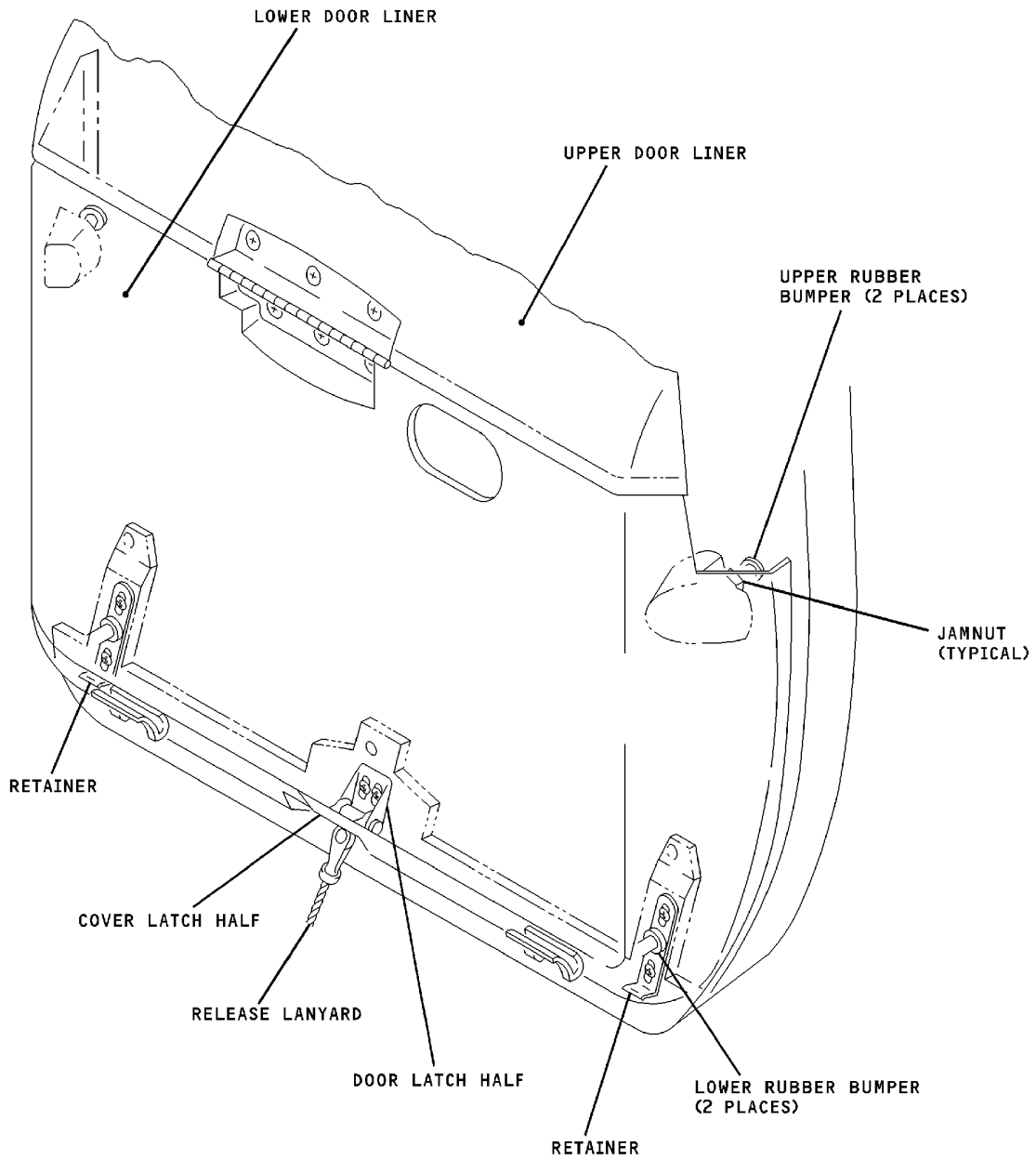
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# 52-42-01

Config 2  
Page 203  
Feb 01/2016



# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Aft Service Door Lining -- Adjustment**  
**Figure 202/52-42-01-990-804**

**EFFECTIVITY**

WJE 401-412, 414-421, 423, 425-427, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

## 52-42-01

Config 2  
Page 204  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## AFT SERVICE DOOR SEAL - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation instructions for the aft door seals. (Figure 201)
- B. The door seals may be removed with the door installed on the aircraft; however, it is extremely difficult to install the seals without removing the door.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Sealant, PR-1422 B 1/2	Products Research and Chemical Corp.

### 3. Removal/Installation Aft Service Door Seals

#### A. Remove Door Seal

- (1) Remove aft service door. (PAGEBLOCK 52-42-00/401)

**CAUTION:** FELT PAD OR SIMILAR MATERIAL SHOULD BE USED TO PROTECT FINISH ON OUTBOARD SIDE OF DOOR.

- (2) Position door on suitable support with inboard side up.
- (3) Push outboard on seal, near retainer, until inner bead of seal is released from retainer.
- (4) Lift outer bead of seal out of retainer and remove seal from door.

#### B. Install Door Seal

- (1) Disconnect control rods from upper and lower gates.
- (2) Position seal evenly around door.
- (3) Install seal four places where hinge seal intersects door seal.

NOTE: Install seal outer bead in retainer first, then inner bead.

- (4) Install short section of lower hinge seal starting from both ends; then install short section in center. Install short sections, alternating from side to side, until complete hinge seal is installed in retainer.

NOTE: A small ribbon of sealant may be applied to concave portion of seal between the retainer beads to ensure retention of seal in hinges and gates.

NOTE: On each short section, install from outboard to inboard; upper bead first, then lower bead.

- (5) Install seal in lower gate, and approximately 5 inches (13 mm) on sides of door past gate, alternating from side to side, inner bead first, then outer bead.
- (6) Install upper hinge and gate seal using procedure outlined in Paragraph 3.B.(4) and Paragraph 3.B.(5).

EFFECTIVITY  
WJE ALL

# 52-42-02

TP-80MM-WJE

Page 201  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (7) Install seal along sides of door in small sections upper end and lower end, inner bead first, then outer bead.

NOTE: Seal should fit smoothly with no evidence of stretch or bulges.

- (8) Fill voids between seal and retainer at ends of hinge seals (4 places) with sealant.
- (9) Reconnect control rods to upper and lower gates.
- (10) Install aft service door. (PAGEBLOCK 52-42-00/401)

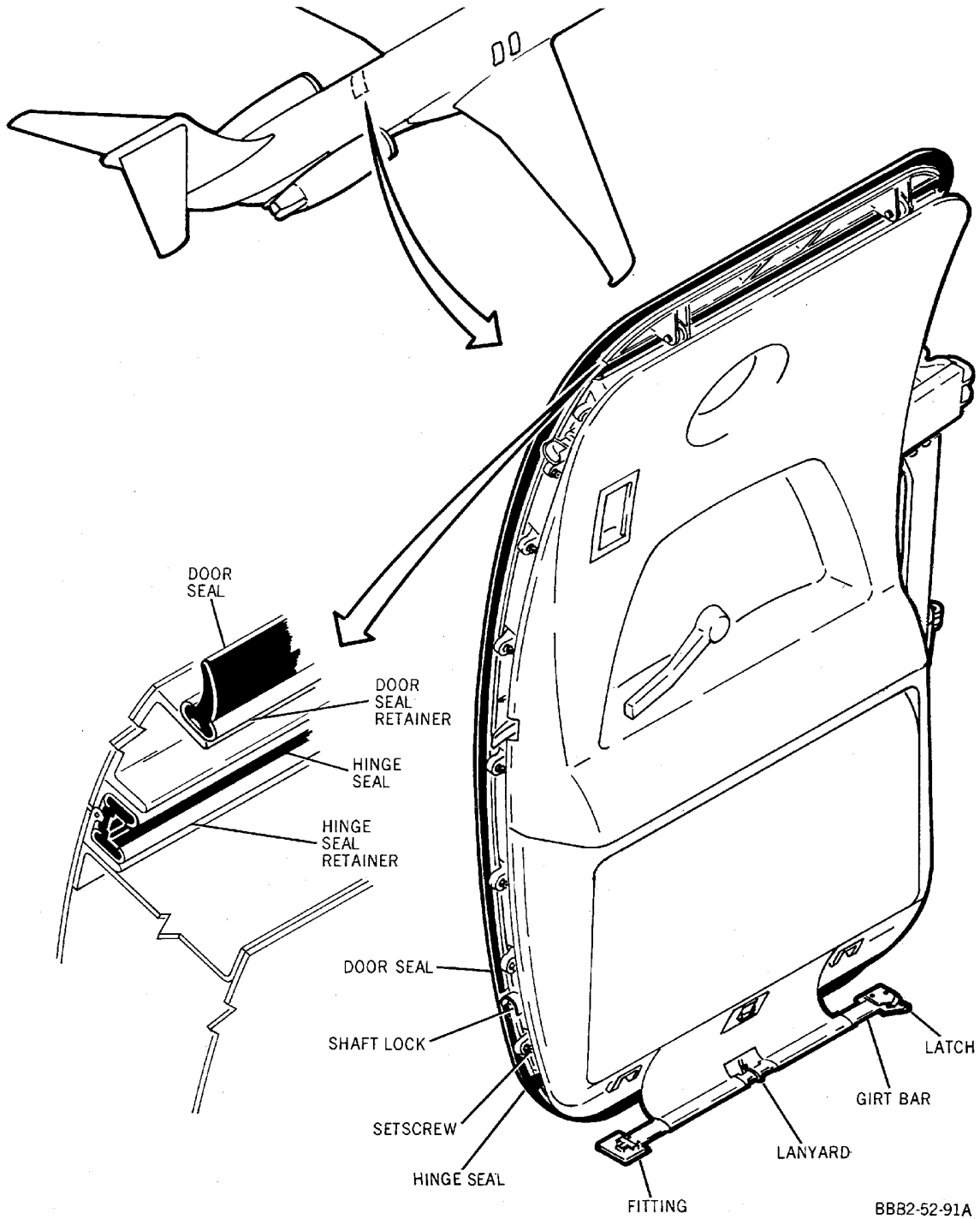
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# 52-42-02

Page 202  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL



**Aft Service Door Seals -- Installation**  
**Figure 201/52-42-02-990-801**

EFFECTIVITY  
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## 52-42-02

TP-80MM-WJE

Page 203  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the electrical/electronics compartment door. (Figure 401)
- B. The electrical/electronics compartment door is attached to the doorjamb by two hinges. When the door is removed, the fore-and-aft and the left-and-right adjustments of the hinges, in the hinge brackets on the doorjamb, are disturbed. If the removed door is to be reinstalled, and no maintenance is to be performed on the door that would change the position of the hinges on the door structure, no adjustments are necessary. The door should require minor, or no adjustment, if close attention is paid to the location and number of adjustment washers during removal.

#### 2. Removal/Installation Electrical/Electronics Compartment Door

- A. Remove Door
  - (1) Open door.
  - (2) Determine and note number and placement of adjustment washers installed between aft hinge and aft hinge bracket.

**WARNING:** DOOR WEIGHS APPROXIMATELY 26 POUNDS (11.8 KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (3) Remove hinge bolts. Retain adjustment washers for installation.
- B. Install Door

- (1) Before installing door check following:
  - (a) Pressure seal for wear, cuts, and proper installation.
  - (b) Hinges and hinge brackets for cracks.
  - (c) Door and doorjamb edges for burrs, cracks, and dents.
  - (d) Seal depressor for cracks, dents, and distortion.

**WARNING:** DOOR WEIGHS APPROXIMATELY 26 POUNDS (11.8 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (2) Position door hinges in hinge brackets and install but do not tighten hinge bolt.
- (3) Position adjustment washers between aft hinge and aft hinge bracket, and install but do not tighten hinge bolt. (Paragraph 2.A.(2))
- (4) Adjust door (PAGEBLOCK 52-43-00/501).
- (5) Check door (PAGEBLOCK 52-43-00/601).
- (6) Check door warning system (PAGEBLOCK 52-70-07/201).

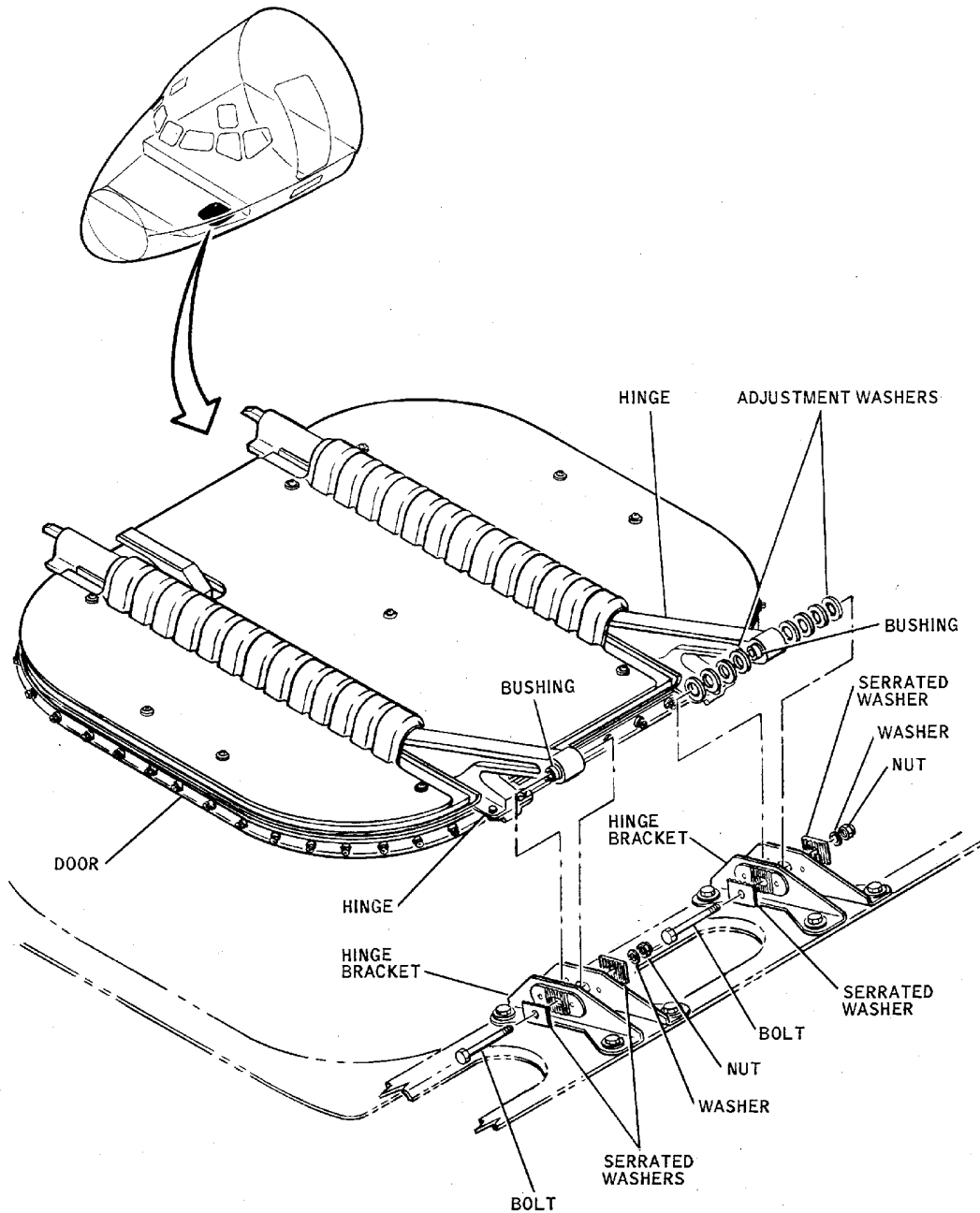
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**52-43-00**

Page 401  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Electrical/Electronics Compartment Door -- Installation  
Figure 401/52-43-00-990-801

EFFECTIVITY  
WJE ALL

## 52-43-00

TP-80MM-WJE

Page 402  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - ADJUSTMENT/TEST

### 1. General

- A. This maintenance practice provides adjustment/test instructions for the electrical/electronics compartment door. (Figure 501)
- B. The fore-and-aft adjustment is accomplished by adding or removing adjustment washers between the fore-and-aft sides of the aft hinge and the hinge bracket.
- C. The left and right adjustment must be accomplished when the door is installed. The adjustment is accomplished by adjusting hinge bolts in slotted bolt holes in the hinge brackets.
- D. The fairing adjustment is accomplished by adjusting setscrews located in the doorjamb, and if necessary adding or removing washers between the hinge brackets and the doorjamb structure.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Spring scales, 0-100 pounds	Commercially Available
Sealant, polysulfide aluminized AC-632, B2	Advanced Chemistry and Technology Garden Grove, CA

### 3. Adjustment/Test Electrical/Electronics Compartment Door

#### A. Adjust Door Fore-and-aft

NOTE: Door should not require fore-and-aft adjustment if same door is being installed and adjustments have not been disturbed. If new door is being installed, it must be adjusted.

- (1) Loosen nut on forward hinge bolt.
- (2) Add or remove adjustment washers between aft hinge and hinge bracket to obtain constant gap, 5/16 inch (7.9 mm) maximum, between fore-and-aft edges of door skin and fuselage skin.
- (3) Adjust door for left and right position. (Paragraph 3.B.)
- (4) Tighten nuts on hinge bolts.

#### B. Adjust Door Left and Right

- (1) Loosen nuts on hinge bolts.
- (2) Close but do not lock door.
- (3) Adjust serrated washers on hinge brackets to obtain constant gap, 5/16 inch (7.9 mm) maximum, between fuselage skin and right and left edges of door skin.
- (4) Tighten nuts on hinge bolts. Make certain that serrations on washers engage serrations on hinge brackets.

NOTE: After door is adjusted for correct fit, setscrews must contact doorstops within a 7/16 inch (11.1 mm) square area located in the center of each doorstop. (Figure 501)

- (5) Check door warning system. (PAGEBLOCK 52-70-07/201)

#### C. Adjust Door to Fair

NOTE: Fairing adjustment should not be required if same door is being installed and adjustments have not been disturbed. Adjustment is required if new door is being installed.

EFFECTIVITY  
WJE ALL

# 52-43-00

TP-80MM-WJE

Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (1) Remove sealant from setscrew access holes located on outside surface of doorjamb.
- (2) Open door.
- (3) Loosen jamnut on setscrews.
- (4) Close door.
- (5) Adjust setscrews to position door approximately 1/16 inch (1.6 mm) underfaired (unpressurized). If left end of door will not fair, add or remove washers between hinge brackets and doorjamb structure. Maximum of three washers may be used at any attach point.
- (6) Pressurize compartment until pressure differential of 3 to 4 psi (20 to 28 kPa) is obtained. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)
- (7) With compartment pressurized, adjust setscrews until door skin fairs with fuselage skin within maximum acceptable tolerances. (Figure 502)
- (8) Depressurize compartment. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 21-00-00/001)
- (9) Open door.
- (10) Hold setscrews and torque jamnuts from 100 in-lb (11 N·m) to 140 in-lb (16 N·m).
  - (a) Check that setscrews do not protrude more than 1/8 inch (3.1 mm)(maximum) from inboard surface of jamnuts. The use of longer or shorter setscrews is permissible.
- (11) Seal setscrew access holes using aluminized sealant, AC-632, B2.
- (12) Adjust serrated plate on doorjamb for each lockpin so that door seal firmly contacts seal depressor on doorjamb when door is closed and compartment is not pressurized. Door must be water tight when aircraft is not pressurized.
- (13) Using spring scale, check handle load required to latch and unlatch door. Handle load shall not exceed 40 pounds (18 kg) with force applied 1 inch (25.4 mm) from inboard end of external handle.
- (14) If handle load is excessive, adjust serrated plates upward in increments of one serration until handle load is acceptable. Door must remain water tight.
- (15) Check door. (PAGEBLOCK 52-43-00/601)
- (16) Check door warning system. (PAGEBLOCK 52-70-07/201)

EFFECTIVITY  
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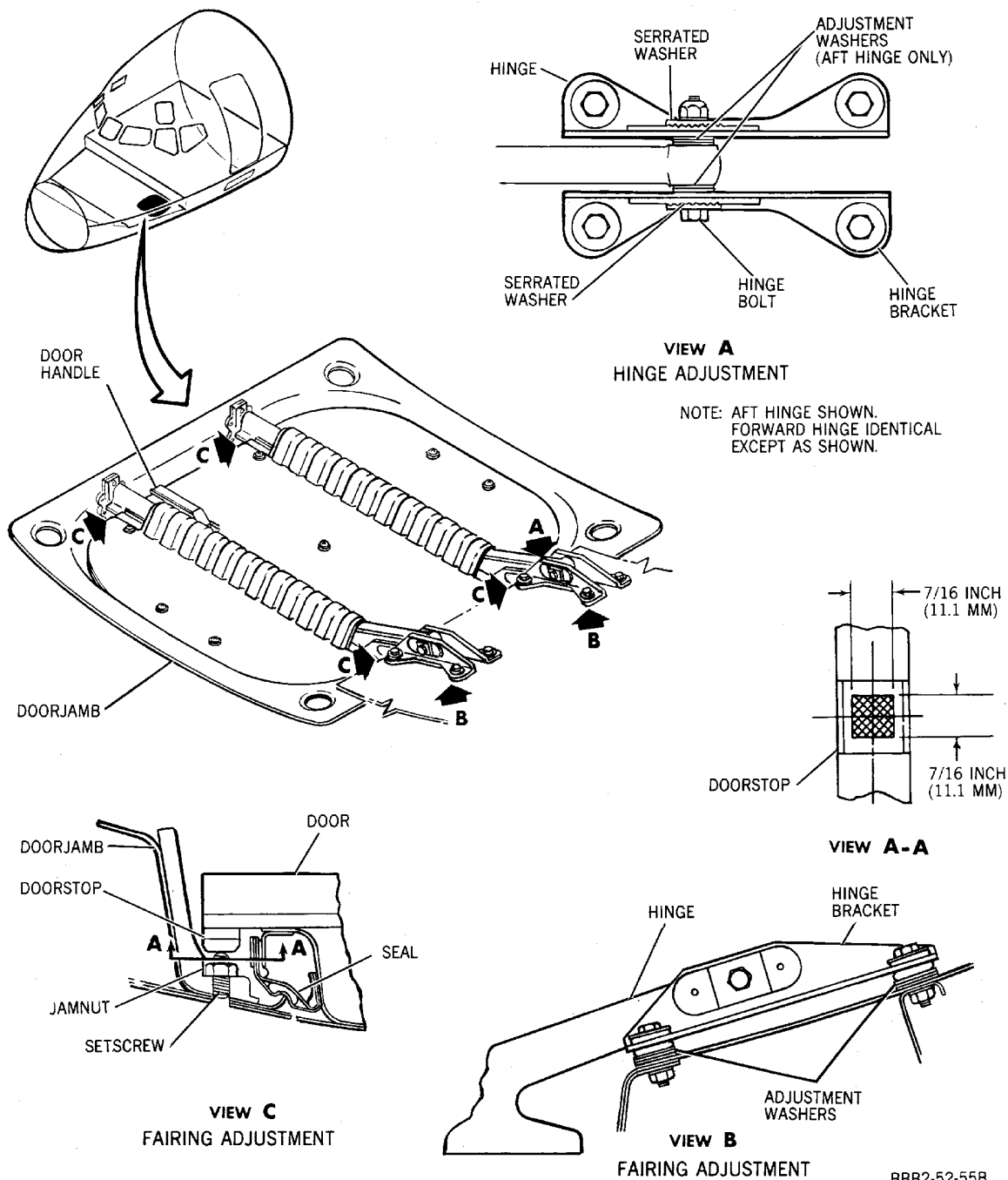
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Page 502  
Feb 01/2015



MD-80  
AIRCRAFT MAINTENANCE MANUAL



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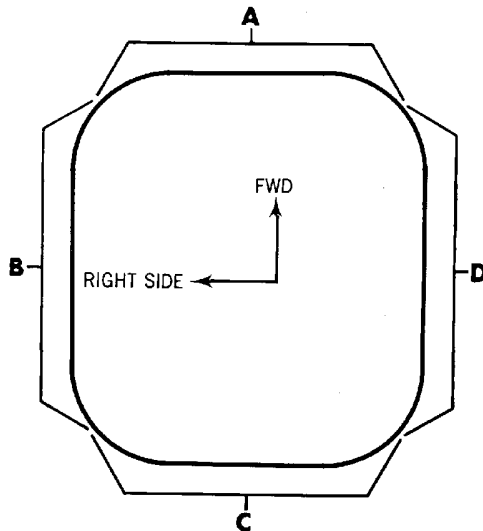
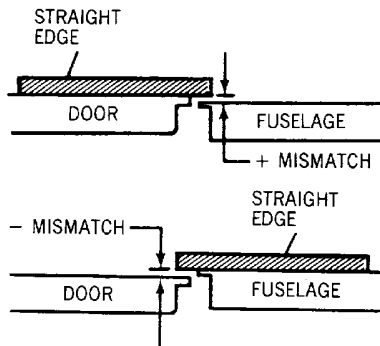
Electrical/Electronics Compartment Door -- Adjustment  
Figure 501/52-43-00-990-802

EFFECTIVITY  
WJE ALL

52-43-00

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

LOCATION	MAXIMUM ACCEPTABLE MISMATCH
A AND C	$\pm 0.055$ INCH (1.4MM)
B AND D	$\pm 0.045$ INCH (1.1MM)



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**Electrical/Electronics Compartment Door Fair -- Adjustment  
Figure 502/52-43-00-990-803**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-43-00**

Page 504  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - ADJUSTMENT/TEST

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 52-43-00-720-801**

**2. Functional Check of the Electrical/Electronics Compartment Door Stop and Set Screws (Torque Door Stop Set Screw and Locknut)**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
52-43-00 P/B 501	ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - ADJUSTMENT/TEST

**B. Tools/Equipment**

Reference	Description
STD-1016	Wrench - Torque, 0 to 300 in-lbs (0 to 33.89 N·m)

**C. Consumable Materials**

NOTE: Equivalent replacements are permitted for the items that follow.

NOTE: It is possible that some materials in the Consumable Materials chart cannot be used for some or all of the necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

Reference	Description	Specification
A60127	Sealant - Polysulfide, Aluminized	DMS 1819
B60104	Solvent - Sealant Remover	DPM 6410
G60085	Cloth - Low Lint	MIL-C-24671

**D. Prepare for Functional Check of the Electrical/Electronics Compartment Door Stop and Set Screw Assemblies.**

SUBTASK 52-43-00-010-001

(1) Open the Electrical/Electronics Compartment Door.

SUBTASK 52-43-00-110-001

(2) Find each of the door stops and remove the sealant from the set screw access holes on the doorjamb.

**WARNING:** SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

EFFECTIVITY WJE ALL	TP-80MM-WJE
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52-43-00

Config 1  
Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (a) Use a low lint cloth, G60085 moist with sealant remover solvent, B60104 and clean the set screws and set screw access holes.

### E. Functional Check of the Electrical/Electronics Compartment Door Stop and Set Screw Assemblies

SUBTASK 52-43-00-720-001

- (1) Do a functional check of the door stop and set screw assemblies.
- (a) Loosen the locknuts on each of the set screws.
- (b) Apply approximately 2 in-lb (0.23 N-m) torque to each set screw.
- 1) If no movement is noticed, proceed to the next step.
  - 2) If movement is noticed, threads are worn-out and set screw should be replaced.  
**NOTE:** Adjust door fair if set screw is replaced. (ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-43-00/501)
- (c) Check the torque on the locknut.
- 1) Turn the locknut on the set screw. You should not be able to turn the locknut without resistance to flat portion of the door being felt.
    - a) If resistance is felt, proceed to the next step.
    - b) If no resistance is felt, locknut has lost torque value and should be replaced.  
**NOTE:** Adjust door fair if locknut is replaced. (ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-43-00/501)
- (d) Torque each of the locknuts as follows:
- 1) Hold the set screw with an Allen wrench to prevent rotation and use a torque wrench, STD-1016 to torque each locknut to 100 in-lb (11 N-m) to 140 in-lb (16 N-m).

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-43-00**

Config 1  
Page 502  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### F. Job Close-up

SUBTASK 52-43-00-390-001

**WARNING:** SEALANT REMOVER SOLVENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SEALANT REMOVER SOLVENT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SEALANT REMOVER SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (1) Use a low lint cloth moist with sealant remover solvent and clean the set screws and the set screw access holes.

**WARNING:** POLYSULFIDE ALUMINIZED SEALANT IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN POLYSULFIDE ALUMINIZED SEALANT IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET POLYSULFIDE ALUMINIZED SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (2) Seal the exterior holes with aluminized polysulfide sealant, A60127.

SUBTASK 52-43-00-942-001

- (3) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-43-00**

Config 1  
Page 503  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### ELECTRICAL/ELECTRONICS COMPARTMENT DOOR - CHECK

#### 1. General

- A. This maintenance practice provides check instructions for the electrical/electronics compartment door.

#### 2. Check Electrical/Electronics Compartment Door

##### A. Check Door

- (1) With door closed and locked, check that gap between door skin and fuselage skin is constant and does not exceed 5/16-inch (7.9 mm).
- (2) Check that door fairs with fuselage skin when compartment is pressurized.
- (3) Check that door locks securely.
- (4) Check that pressure seal is not worn or damaged.
- (5) Check seal depressor for nicks, dents, and distortion.
- (6) Check that door latch engages hold open clip when door is in full open position.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-43-00**

Page 601  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ELECTRICAL/ELECTRONICS COMPARTMENT DOOR SEAL - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation instructions for the electrical/electronics compartment door seal. (Figure 201)
- B. The seal may be removed from the door without removing the door from the aircraft. However, it will be extremely difficult to install the seal without removing the door.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Punch, leather	Commercially available
Ice pick	Commercially available

### 3. Removal/Installation Electrical/Electronics Compartment Door Seal

#### A. Remove Seal

- (1) Remove door. (PAGEBLOCK 52-43-00/401)

**CAUTION:** FELT PAD OR SIMILAR MATERIAL SHOULD BE USED TO PROTECT FINISH ON OUTBOARD SIDE OF DOOR.

- (2) Position door on suitable support with inboard side up.
- (3) Remove outer retainers.

NOTE: Retainers should be marked for identification to facilitate installation.

- (4) Fold outer seal back and remove sponge rubber filler.
- (5) Remove inner retainers.

NOTE: Retainers should be marked for identification to facilitate installation.

- (6) Pull seal away from door.

#### B. Install Seal

- (1) Check that door frame in area where seal is to be installed is clean and free of chips and burrs which may cause wear or damage to seals.
- (2) Check seal retainers for nicks and burrs which may cause wear or damage to seals.
- (3) Place seals in position with outer seal against door surface and stitched edge toward inside face of door.
- (4) Position inner retainers on seal and install attaching screws.

NOTE: If new seal is being installed, cut screw holes in seals with leather punch or similar tool. Ice pick or similar tool may be used to locate seal on door-frame. Allow seals to extend 1/4(±1/8) inch (6.2(±3.1) mm) beyond edge of retainers.

NOTE: If new seal retainers are to be installed, check that holes in retainers will align with holes in doorframe, and that retainers will lay flush with door structure.

- (5) Install sponge rubber filler between inner and outer seals.
- (6) Position outer retainers on seals and install attach screws.

EFFECTIVITY  
WJE ALL

# 52-43-01

TP-80MM-WJE

Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (7) When all retainers are in place, check seals for wrinkles and bulges.
- (8) Install door. (PAGEBLOCK 52-43-00/401)

EFFECTIVITY  
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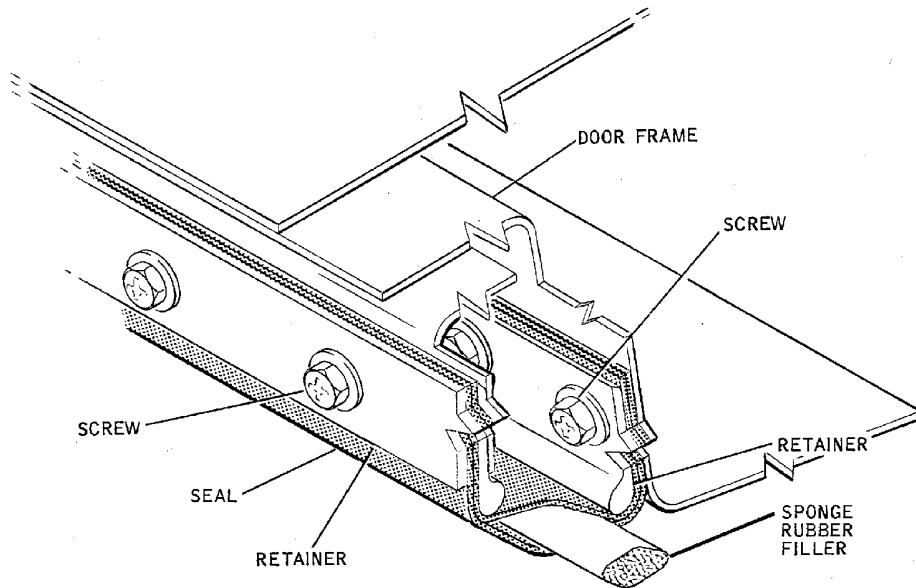
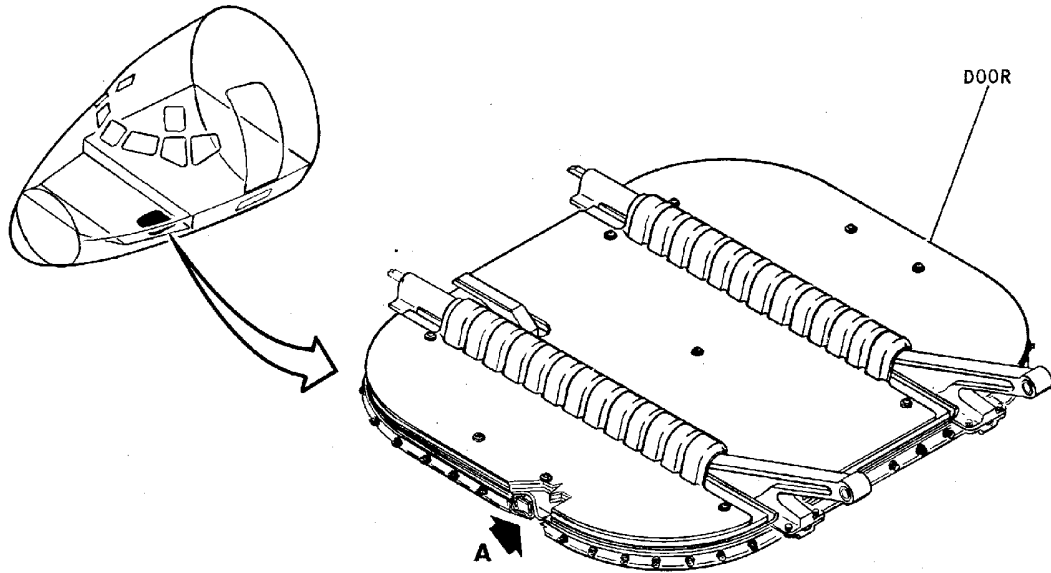
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**52-43-01**

Page 202  
Feb 01/2015



# MD-80 AIRCRAFT MAINTENANCE MANUAL



**VIEW A**

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**Electrical/Electronics Compartment Door Seal -- Installation**  
**Figure 201/52-43-01-990-801**

EFFECTIVITY  
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TP-80MM-WJE

## 52-43-01

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD ACCESSORY COMPARTMENT DOOR - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the forward accessory compartment door. No adjustment of the door is required. (Figure 201)
- B. For removal/installation instructions for the pressure seal, refer to FORWARD ACCESSORY COMPARTMENT DOOR SEAL - MAINTENANCE PRACTICES, PAGEBLOCK 52-44-01/201.

#### 2. Removal/Installation Forward Accessory Compartment Door

- A. Remove Door
  - (1) Release door fasteners.
  - (2) Open door.
  - (3) Remove washers and cotter pins which secure hinge to hinge bracket, and remove door.
- B. Install Door
  - (1) Position ends of tubular hinge in hinge brackets.
  - (2) Install washers and cotter pins on hinge.
  - (3) Close door and secure fasteners.
  - (4) Check door warning system. (PAGEBLOCK 52-70-06/201)

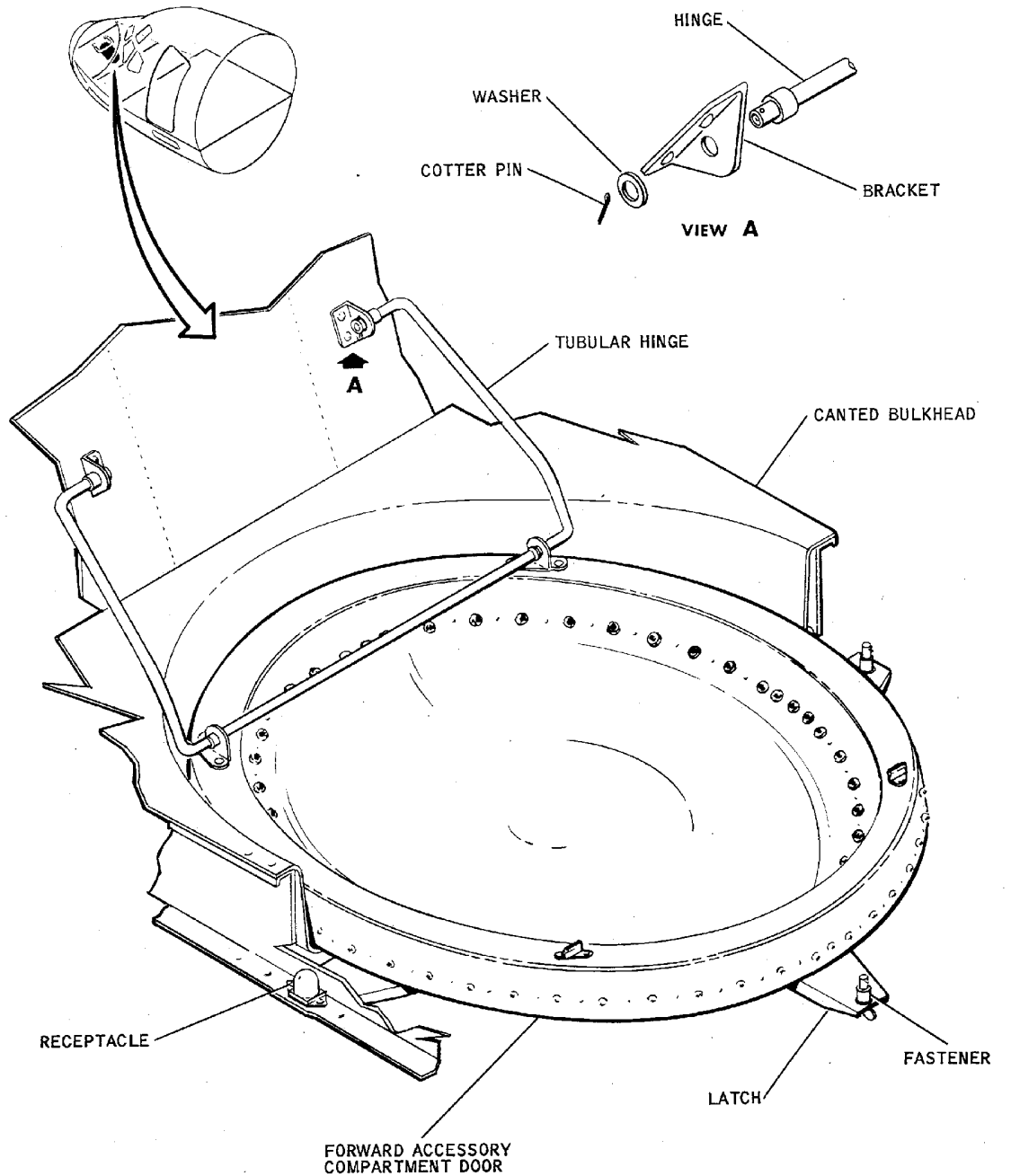
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TP-80MM-WJE

**52-44-00**

Page 201  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Forward Accessory Compartment Door -- Installation**  
**Figure 201/52-44-00-990-801**

EFFECTIVITY  
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TP-80MM-WJE

## 52-44-00

Page 202  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD ACCESSORY COMPARTMENT DOOR SEAL - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation instructions for the forward accessory compartment door seal. (Figure 201)
- B. The forward accessory compartment door must be removed from the aircraft to remove and install the door seal.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Punch, leather	Commercially available
Ice pick	Commercially available

### 3. Removal/Installation Forward Accessory Compartment Door Seal

#### A. Remove Seal

- (1) Remove door. (PAGEBLOCK 52-44-00/201)
- (2) Position door on suitable support with outboard side up.
- (3) Remove door latches.
- (4) Remove inboard retainers.

NOTE: Retainers should be identified to facilitate installation.

- (5) Remove outboard retainers.

NOTE: Retainers should be identified to facilitate installation.

- (6) Pull seal away from door.

#### B. Install Seal

- (1) Check that doorframe in area where seal is to be installed is clean and free of chips and burrs which may cause wear or damage to seal.

- (2) Check seal retainers for nicks and burrs which may cause wear or damage to seal.

- (3) Position seal on door.

- (4) Position outboard retainers on seal and install attach screws.

NOTE: If new seal is being installed, cut screw holes in seal with leather punch or similar tool. Ice pick or similar tool may be used to locate seal on door-frame. Allow seal to extend 1/8 inch (3.1 mm) beyond edge of retainers.

NOTE: If new seal retainers are to be installed, check that holes in retainers align with holes in door structure.

- (5) Position filler in seal cavity, area between seal and door structure.

NOTE: All aircraft are not provided with a filler on the accessory compartment door.

- (6) Position inboard retainers on seal and install attaching screws.

- (7) When all retainers are installed, check seal for wrinkles and bulges.

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Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (8) Trim seal so that approximately 2 inches (50.8 mm) will extend beyond inboard retainers.
- (9) Install door. (PAGEBLOCK 52-44-00/201).

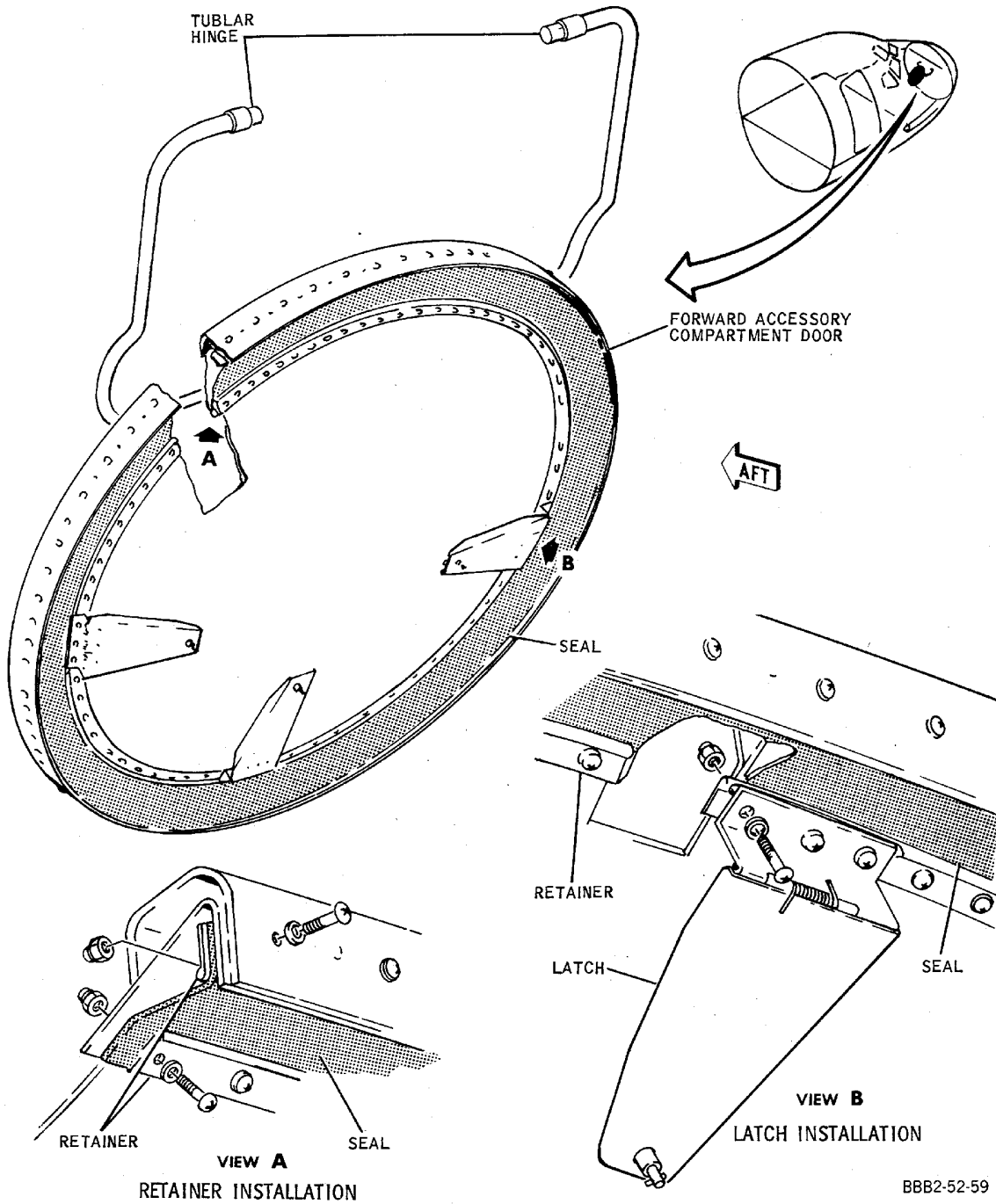
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TP-80MM-WJE

**52-44-01**

Page 202  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Forward Accessory Compartment Door Seal -- Installation  
Figure 201/52-44-01-990-801

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**52-44-01**

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## APU ACCESS DOORS - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practices provides removal/installation instructions for the APU access doors. (Figure 201)
- B. The two hinged access doors for the APU are located on the lower exterior of the aft accessory compartment. Ground maintenance may be performed on the APU with the access doors opened. The right and left doors are alike except for the small pressure relief door installed near the aft end of the right door. Right door is shown in Figure 201.
- C. A functional check of the pressure relief door latches is provided in Paragraph 4..

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials necessary are legally permitted in your location. All persons must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials.

**Table 201**

Name and Number	Manufacturer
Push-pull scale 0-250 pounds (0-113.4 Kg) DPPH-250	
Cleaner, handwipe DPM 6380-1	
Oil, engine V10-077 series	
Cloth (low lint) MIL-C-85043 (Type II)	

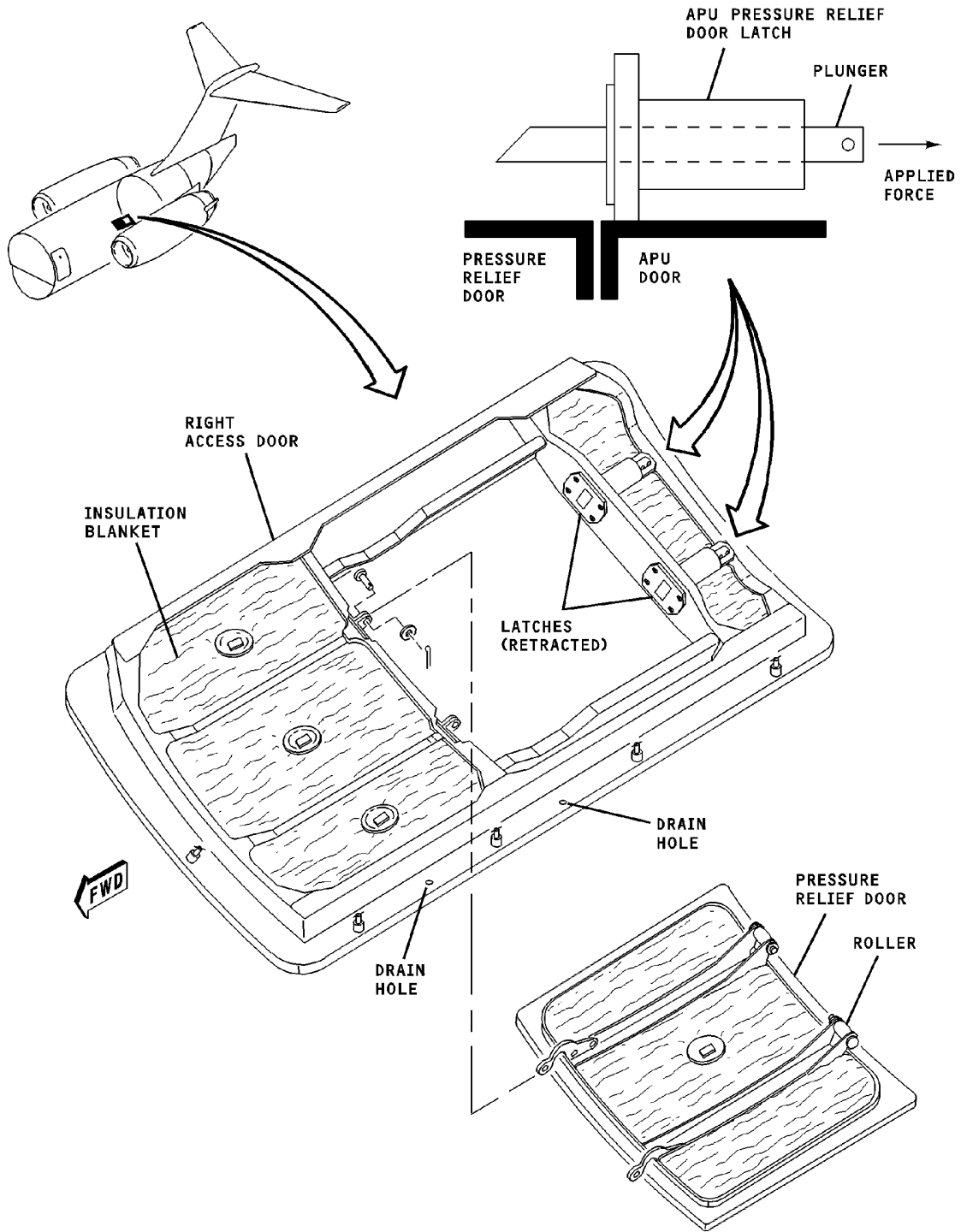
EFFECTIVITY  
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TP-80MM-WJE

**52-45-00**

Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**APU Access Doors**  
Figure 201/52-45-00-990-801

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TP-80MM-WJE

**52-45-00**



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Removal/Installation APU Access Doors

#### A. Remove Doors

**WARNING:** MAKE CERTAIN THAT APU HAS COOLED ENOUGH TO PERMIT WORK ON DOORS.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**OVERHEAD BATTERY BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	21	B1-291	APU CONTROL

- (2) Open left and right APU access doors.
- (3) Remove screw and hinge fairing from forward end of door hinge.
- (4) Remove hinge pin.

**CAUTION:** USE CARE IN HANDLING DOORS SO INSULATION BLANKETS ATTACHED TO INBOARD SIDE ARE NOT DAMAGED.

- (5) Remove access door.

#### B. Install Doors

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**OVERHEAD BATTERY BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	21	B1-291	APU CONTROL

- (2) Position access door and engage hinge halves.
- (3) Install hinge pin.
- (4) Install hinge fairing with screw.
- (5) Close access doors.
- (6) Remove the safety tag and close this circuit breaker:

**OVERHEAD BATTERY BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	21	B1-291	APU CONTROL

### 4. Functional Test - Pressure Relief Door Latches

- A. Do a functional check of the APU Compartment Pressure Relief Door Latches as follows:  
(Figure 201)

EFFECTIVITY	
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TP-80MM-WJE

**52-45-00**

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A SENSITIZER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (1) On APU pressure relief door, thoroughly clean latches with cloth dampened with cleaner.
- (2) Visually check latches for damage.

**WARNING:** LUBRICATING OIL IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LUBRICATING OIL IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LUBRICATING OIL IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE MIST.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (3) Apply light coat of oil to both plungers.
- (4) Lightly lubricate rollers with oil and ensure that they move freely.
- (5) Attach spring scale to hole located in aft end of upper plunger.
- (6) Apply force to spring scale, in line with axis of plunger.

**NOTE:** Visible movement of plunger occurs between 50-65 lb (22.6 - 29.5 kg).

- (7) Remove spring scale from plunger.
- (8) Attach spring scale to hole located in aft end of lower plunger.
- (9) Apply force to spring scale, in line with axis of plunger.

**NOTE:** Visible movement of plunger occurs between 50-65 lb (22.6 - 29.5 kg).

EFFECTIVITY  
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TP-80MM-WJE

**52-45-00**

Page 204  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (10) Remove spring scale from plunger.
- (11) Remove all tools and equipment from work area. Make certain area is clean.
- (12) Close access doors.

EFFECTIVITY  
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TP-80MM-WJE

**52-45-00**

Page 205  
Feb 01/2015

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**  
**APU ACCESS DOORS - ADJUSTMENT/TEST**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 52-45-00-720-801**

**2. Functional Check of the Pressure Relief Door Latches**

NOTE: This procedure is a scheduled maintenance task.

**A. Equipment and Materials**

Name and Number	Manufacturer
Push-pull Scale 0-250 pounds (0-113.4 Kg) DPPH-250	
Cleaner, handwipe DPM 6380-1	
Oil, engine V10-077 series	
Low Lint Cloth, MIL-C-85043 (Type II)	

NOTE: It is possible that some materials in the Equipment and Materials Table cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials are legally permitted in your location. All persons must obey all applicable federal, state, local and provincial laws and regulations when it is necessary to work with these materials.

**B. Prepare for the Functional Check of the APU Pressure Relief Door Latches**

SUBTASK 52-45-00-010-001

(1) Open APU access doors.

SUBTASK 52-45-00-100-001

**WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A SENSITIZER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(2) On APU pressure relief door, thoroughly clean latches with cloth dampened with cleaner.

SUBTASK 52-45-00-212-001

(3) Visually check latches for damage.

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52-45-00

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

SUBTASK 52-45-00-640-001

**WARNING:** LUBRICATING OIL IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LUBRICATING OIL IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LUBRICATING OIL IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE MIST.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS'S MSDS FOR:

- MORE PRECAUTIONARY DATA
- APPROVED SAFETY EQUIPMENT
- EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THESE HAZARDOUS AGENTS.

- (4) Apply light coat of oil to both plungers.
- (5) Lightly lubricate rollers with oil and ensure that they move freely.

### C. Functional Check of the APU Pressure Relief Door Latches

SUBTASK 52-45-00-720-001

- (1) Do a functional check of the APU pressure relief door latches as follows: (Figure 501)
  - (a) Attach spring scale to hole located in aft end of upper plunger.
  - (b) Apply force to spring scale, in line with axis of plunger.
    - 1) Visible movement of plunger should occur between 50-65 lb (22.6 - 29.5 kg).
  - (c) Remove spring scale from upper plunger.
  - (d) Attach spring scale to hole located in aft end of lower plunger.
  - (e) Apply force to spring scale, in line with axis of plunger.
    - 1) Visible movement of plunger should occur between 50-65 lb (22.6 - 29.5 kg).
  - (f) Remove spring scale from lower plunger.

### D. Job Close-up

SUBTASK 52-45-00-942-001

- (1) Remove all tools and equipment from work area. Make certain area is clean.
- (2) Close APU access doors.

————— END OF TASK —————

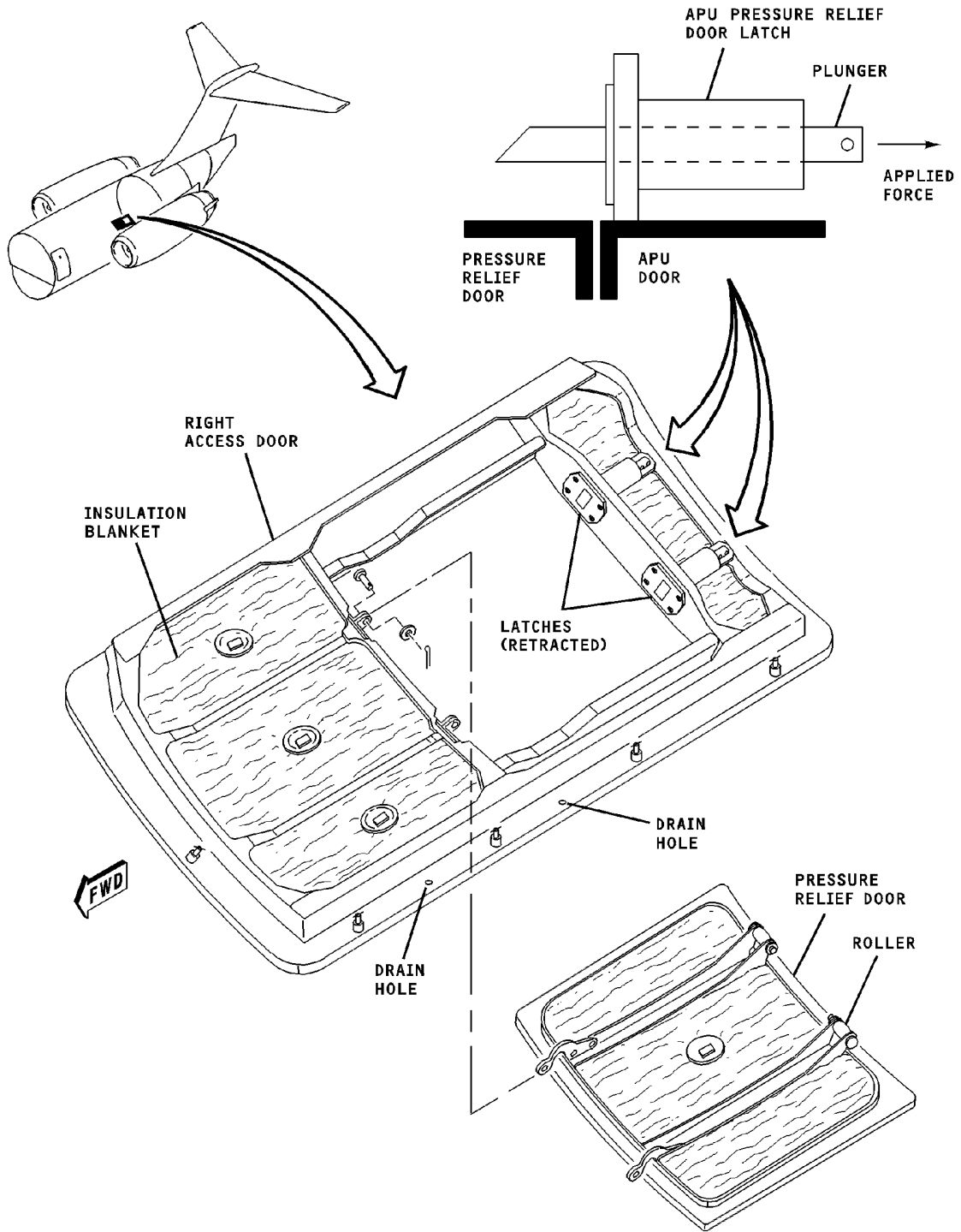
EFFECTIVITY  
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TP-80MM-WJE

**52-45-00**

Page 502  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**APU Access Doors**  
Figure 501/52-45-00-990-802

EFFECTIVITY  
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TP-80MM-WJE

## 52-45-00

Page 503  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FIXED INTERIOR - DESCRIPTION AND OPERATION

#### 1. General

- A. Doors are provided for the lavatories and the flight compartment. The doors are constructed of honeycomb core panels. The doors are hinged to the doorjamb by a hinge which extends along one edge from the top to the bottom of the door.

#### 2. Fixed Interior

A. Description

- (1) Lavatory Door - Each lavatory door is provided with a latch and a lock. The latch can be operated from either side of the door by knobs attached to a common shaft. The door can be locked only from the lavatory side. A two-position sign is attached to the lock bolt. When the lock bolt is in the unlocked position, the sign (visible through a window) indicates that the lavatory is unoccupied. When the lock lever is moved to the locked position the unoccupied sign moves away from the window and the occupied sign is moved into a position visible through the window. If necessary the lock may be unlocked from outside the lavatory by inserting a thin bladed screwdriver or similar tool in a slot in the lower section of the occupied sign and forcing the sign upward, moving the lock bolt to the unlocked position.

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

- (2) Flight Compartment Door - The flight compartment door is made in two sections. Each section contains a blowout panel which is designed to blow forward into the flight compartment if pressure differential between the flight compartment and the passenger compartment is excessive. The lower section of the panel contains louvers/perforated sheet to permit air circulation between the flight compartment and the passenger compartment. A slide panel is provided to cover the louvers on the flight compartment side of the panel. The slide is secured in the up position (louvers open) by a strap equipped with a quick-release snap.

**CAUTION: WHEN SOLENOID IS ENERGIZED, DO NOT TRY TO OPEN DOOR BEFORE STRIKER IS RELEASED, OR DAMAGE TO SOLENOID MECHANISM MAY RESULT.**

- (a) The door can be opened from either side by knobs which are attached by linkage to a latch bolt. The latch bolt engages an electrically released striker installed in the ceiling. The striker is released by a solenoid which is controlled by a switch on the overhead switch panel. When the solenoid is energized, the door can be opened by pushing on the door sections. When the solenoid is deenergized, the door knobs must be actuated to open the door. The electrically released striker enables the flight crew to release the locked door without moving from their flight control positions.
- (b) The door can be locked from inside the flight compartment by actuating a thumb latch and can be locked from the other side by a key. The thumb latch must be released to open the door from the flight compartment, thus, preventing the crew members from leaving the compartment and inadvertently locking the door. A viewing lens is provided in the left door section which enables the crew to view the adjacent area before opening the door.

**WJE 412, 414**

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- (3) Flight Compartment Door - The Flight compartment door is constructed of honeycomb core panels with phenolic face sheets. The panel assemblies, door latch, roller guide, and door surround are reinforced to meet the intrusion resistance requirements set forth in AC 25.795-1. Ballistic material is mechanically attached to the flight deck side of the door panel assemblies to meet ballistic test requirements set forth in AC 25.795-2.

EFFECTIVITY  
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TP-80MM-WJE

**52-50-00**

Page 1  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE WJE 412, 414 (Continued)

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- (a) A ballistic-proof window assembly is installed in the upper right half of the door assembly. The window assembly consists of a window and shade. The shade slides up and locks into an open (exposed) position.
- (b) The flight compartment door is made into two sections. Each section contains a blowout panel designed to blow forward into the flight compartment using mechanical latches only if rapid decompression occurs. The lower section of the panels permit ventilation between the flight compartment and the passenger compartment. A slide panel is provided to cover the vents on the flight compartment and the passenger compartment. A slide panel is provided to cover the vents on the flight compartment side of the panel during a smoke event.

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**CAUTION:** WHEN SOLENOID IS ENERGIZED, DO NOT TRY TO OPEN DOOR BEFORE STRIKER IS RELEASED OR DAMAGE TO SOLENOID MECHANISM MAY RESULT.

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- (c) The door can be opened from the pilot's side by a handle which is attached by linkage to a latch bolt. The latch bolt engages an electrically-released striker installed in the ceiling. The striker is released by a solenoid which is controlled by a Remote Access System (RAS) consisting of a keypad and control panel. When the solenoid is energized, the door is locked and can only be opened from the pilot's side or through the RAS.

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- 1) The programmable tamper-resistant keypad is located at eye level adjacent to the cockpit door and near the flight attendant jump seat. All logic is located in the keypad. The keypad contains three indicator lights - red (locked), amber (auto), and green (unlocked).

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- 2) The control panel is located in the overhead control panel. The panel consists of a rotary switch and two indicator lights. The LOCK FAIL indicator lights if the door does not lock when commanded. The AUTO UNLK indicator lights steady when a request for entry is made and flashes for the final 1/3 of the access request time duration. A single aural alert sounds when a request for entry is made and again at half the access request time duration. A pulsing alert sounds for the final third of the access request time duration. Rotary switch positions are:

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- a) AUTO - The door is locked and keypad is activated. This is the 12 O'clock default position.
- b) UNLK - The door is unlocked and keypad is deactivated. Push and turn switch counterclockwise to the 10 O'clock position. The door remains unlocked while the switch is held in this position.
- c) DENY - The door is locked and keypad is deactivated. Turn switch clockwise to the 2 O'clock position.

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- 3) System Timer Duration - All duration times are programmable through the keypad except for UNLOCK which is instantaneous. The default settings are:

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- a) ACCESS REQUEST - 60 seconds. This is the amount of time the crew has to react to entry request made at the keypad.
- b) DENY/LOCKOUT - 5 minutes. This is the amount of time the keypad remains deactivated after the crew has failed to respond to a denied entry request.
- c) AUTO UNLOCK - 5 seconds. This is the amount of time the door remains unlocked after the crew has failed to respond to an entry request within 60 seconds.

EFFECTIVITY  
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**52-50-00**

TP-80MM-WJE

Page 2  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE WJE 412, 414 (Continued)

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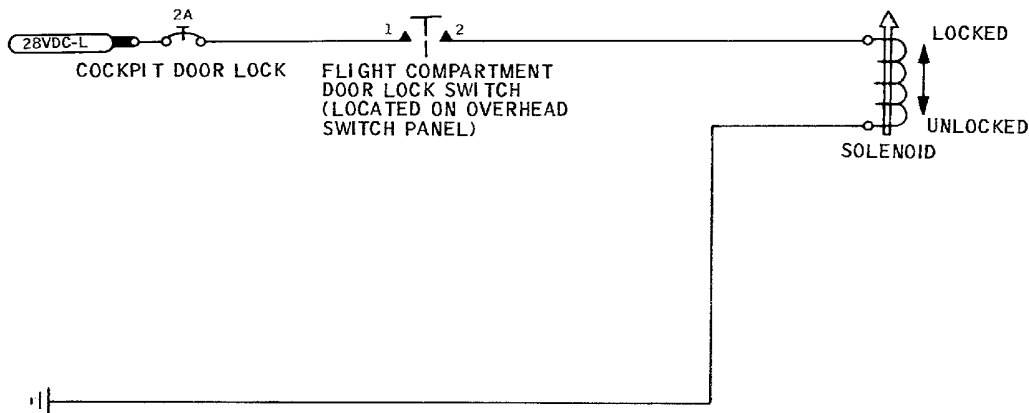
WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- d) UNLOCK - T=0, pilot must hold switch. This is the amount of time the door remains unlocked when the crew has given the UNLK response to an entry request.
- e) In the event the door latch handle becomes inoperable, the door may be opened using the pull assembly located at the top of the door. This is for flight deck emergency egress only.

NOTE: The deadbolt must be unlocked.

- f) In the event the door does not unlock using the latch handle or pull ring, emergency egress may be accomplished through the decompression panel. Push decompression latch release mechanism up to red indicator stripe. Pull latch bolt to remove decompression panel from the door.
- g) The door is fitted with an additional deadbolt located at the top of the door. This is for ground use only. The flight deck can be secured from the cabin side by locking with a key. The deadbolt is placarded with operational instructions.

NOTE: The door is in the unlock condition when aircraft power is off. The deadbolt can be opened from the flight deck even when locked with a key. The deadbolt can be locked and the key function overridden and disabled from the flight deck by turning the deadbolt handle.



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**Flight Compartment Door Latch -- Schematic  
Figure 1/52-50-00-990-801**

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

EFFECTIVITY  
WJE ALL

**52-50-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### LAVATORY DOORS - MODULAR TYPE LAVATORIES - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practices provides removal/installation instructions for the lavatory doors on modular-type lavatories. (Figure 201)
- B. The door on modular lavatories is an integral part of the unit. Later aircraft may have a two-piece bifold door. Removal and installation of these doors is similar to the one-piece doors.

#### 2. Removal/Installation Lavatory Doors

- A. Remove Door (Typical)

**NOTE:** If necessary the door lock may be unlocked from out-side the lavatory by inserting a thin-bladed screwdriver or similar tool in a slot in the lower section of the occupied sign and forcing the sign upward, which will move the lockbolt to the unlocked position.

- (1) Open door.

**WARNING:** DOOR WEIGHS APPROXIMATELY 32 POUNDS (14.5 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (2) Support door and remove screws attaching hinge to structure.

**WARNING:** DOOR WEIGHS APPROXIMATELY 32 POUNDS (14.5 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- B. Install Door (Typical)

- (1) Align door hinge with structure.
- (2) Install attaching screws.

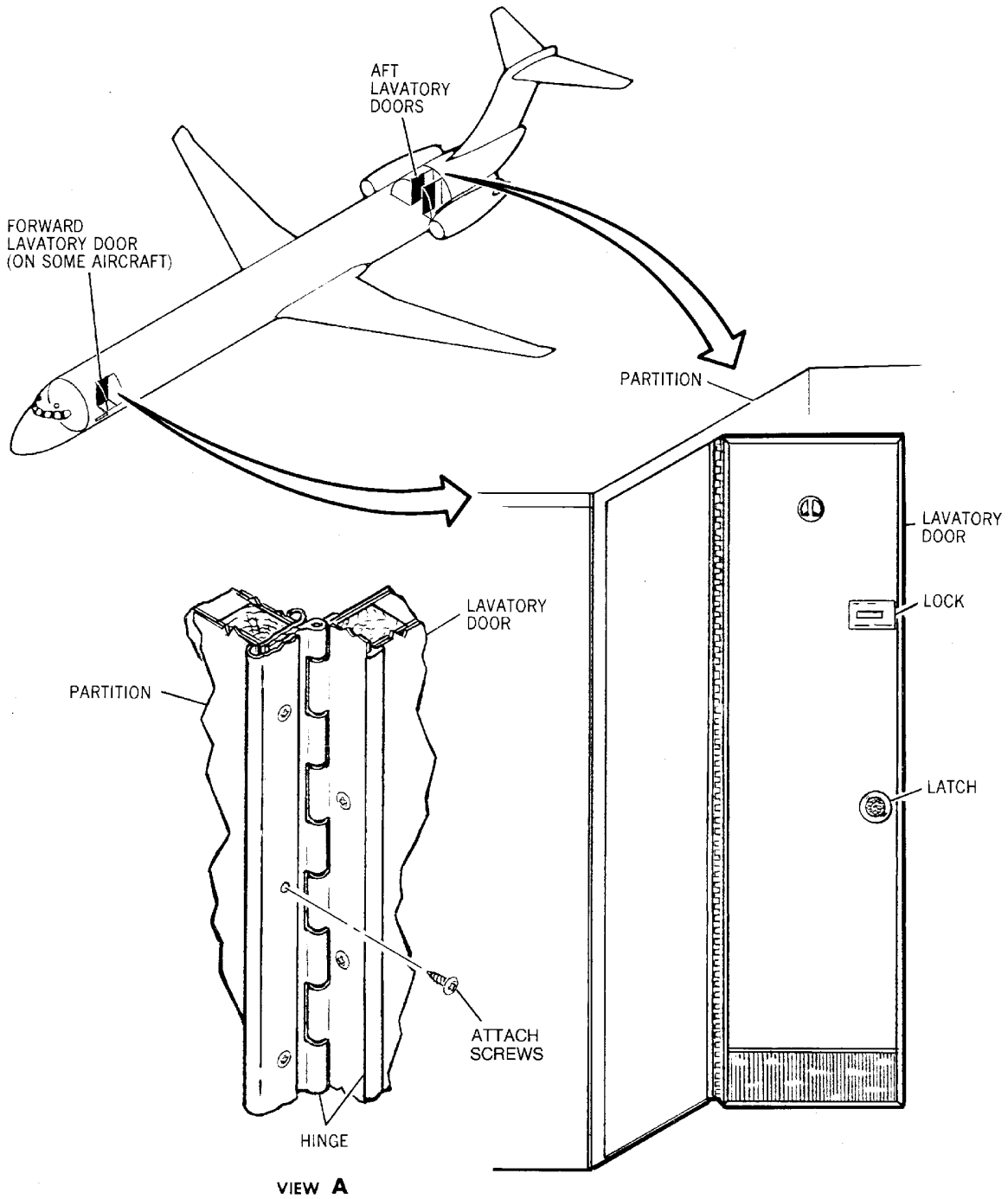
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**52-51-01**

Config 1  
Page 201  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Lavatory Door -- Installation (Typical Slab Door)**  
Figure 201/52-51-01-990-804

EFFECTIVITY  
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TP-80MM-WJE

## 52-51-01

Config 1  
Page 202  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FLIGHT COMPARTMENT DOOR - FAULT ISOLATION

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WJE **1. General**

WJE A. This section contains specific checks, tests, and fault isolations to determine the extent of repair  
WJE required to restore the flight compartment door to operational status or to prove acceptable  
WJE functional capabilities of the door following maintenance.

WJE **2. Mechanical Test**

WJE A. Open and close crew door assembly ensuring that it opens and closes smoothly with minimal effort.  
WJE Verify the locking and latching mechanisms are in working order.

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Fault	Probable Cause	Corrective Action
Door will not open.	Obstruction in aisle.	Remove obstacle.
	Door handle is damaged.	Remove/replace door handle.
	If strike is powered, door may not open.	Remove power to strike solenoid.
	Deadbolt latch is engaged.	Move deadbolt latch to horizontal position.
Door is difficult to open or close.	Latch assembly is damaged.	Pull down on pull assembly. Remove/replace latch assembly.
	Loose molding; protruding objects. Hinge(s) are damaged, misaligned, or obstructed by object.	Repair items. Replace/repair hinge(s); remove obstruction.
Blowout latch/latch release mechanism will not release door.	Blowout latch is damaged or has become contaminated.	Remove/replace blowout latch.
Blowout door does not lock in place.	Latch is not fully engaged.	Ensure latch slider is in green sector.

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EFFECTIVITY  
WJE 412, 414

TP-80MM-WJE

**52-52-01**

Config 1  
Page 101  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FLIGHT COMPARTMENT DOOR - MAINTENANCE PRACTICES

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

### 1. General

- A. This maintenance practices provides removal/installation, and adjustment instructions for the flight compartment door. (Figure 201)
- B. The two sections of the flight compartment door are removed and installed as a unit. The door must be removed before the two sections can be separated. The sections are separated by removing the hinge pin which joins the section halves.

### 2. Equipment and Materials

NOTE: Equivalent substitute may be used instead of the following item.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Force gage, hand held 0-50 pounds	
Spring scale, 0-25 pounds (11.35 Kg)	

### 3. Removal/Installation Flight Compartment Door

#### A. Remove Door

- (1) Open door.
- (2) Remove hinge pin cover plate located approximately midway between upper and lower ends of hinge.

NOTE: It may be necessary to bend tabs on hinge pin plate before plate can be removed.

**WARNING:** DOOR WEIGHS APPROXIMATELY 22 POUNDS (10 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (3) Support door and remove hinge pins.

#### B. Install Door

**WARNING:** DOOR WEIGHS APPROXIMATELY 22 POUNDS (10 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

- (1) Position roller on top edge of left door section in track in ceiling.
- (2) Mate hinge half on door with hinge half on structure.
- (3) Install hinge pins.
- (4) Install hinge pin plate, and bend tabs on plate to secure hinge pins.

#### C. Emergency Removal of Door (Door closed and locked.)

- (1) Using screwdriver or similar tool, pry tabs on hinge plate outward far enough to gain access to hinge pins.

**WARNING:** DOOR WEIGHS APPROXIMATELY 22 POUNDS (10 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

- (2) Support door and remove hinge pins.

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TP-80MM-WJE

# 52-52-01

Config 1  
Page 201  
Feb 01/2016

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)**

**4. Adjustment/Test Flight Compartment Door**

- A. Adjust Door (Figure 201)
  - (1) Open door.
  - (2) Add or remove shims between solenoid mechanism and beam so latch bolt does not bind during operation.
- B. Adjust Blowout Panel Latches (Figure 201)
  - (1) Close flight compartment door.
  - (2) Measure force required to open each blowout panel, applying force to aft side of panel, midway of lower edge of panel, 0.38 inch (9.7 mm) from lower edge of panel. Opening each panel should require force of 20(±1) pounds (9(±0.5) kg), and both latches on each panel should disengage simultaneously.
  - (3) Adjust latches as follows:
    - (a) Remove latch from blowout panel.
    - (b) Turn adjustment screw in barrel, adjusting spring tension on latch pin.
    - (c) Install latch in panel.
  - (4) Repeat adjustment as required to obtain acceptable operation of blowout panels.

**WJE 884; before incorp. of SB 52-159**

- C. Adjust Door Hold Open Latch (Figure 202 or Figure 205)
  - (1) Adjust ceiling fitting with shims so latch bolt engages fitting 0.094 to 0.188 inch (2.388 to 4.775 mm). Install shims with open side forward.

**WJE 420, 422, 424-427, 429, 891; before incorp. of SB 52-159**

- D. Adjust Door Hold Open Plunger (Figure 203 or Figure 205)
  - (1) Adjust ceiling plunger so a 5 to 8 pound (2.27 to 3.63 kg) pull on door handle will dislodge door.

**WJE 401-411, 415-419, 421, 423, 861-866, 868, 869, 871-881, 883, 886, 887, 892, 893**

- E. Adjust Door Hold Open Magnet (Figure 204)
  - (1) Adjust magnet attach screw so it is just loose enough to permit free rotation of magnet.

**WJE 420, 422, 424-427, 429, 884, 891; with SB 52-159 incorp.**

- F. Adjust Door Hold Open Magnet (Figure 202 or Figure 203 or Figure 205)
  - (1) Adjust magnet attach screw so it is just loose enough to permit free rotation of magnet.

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

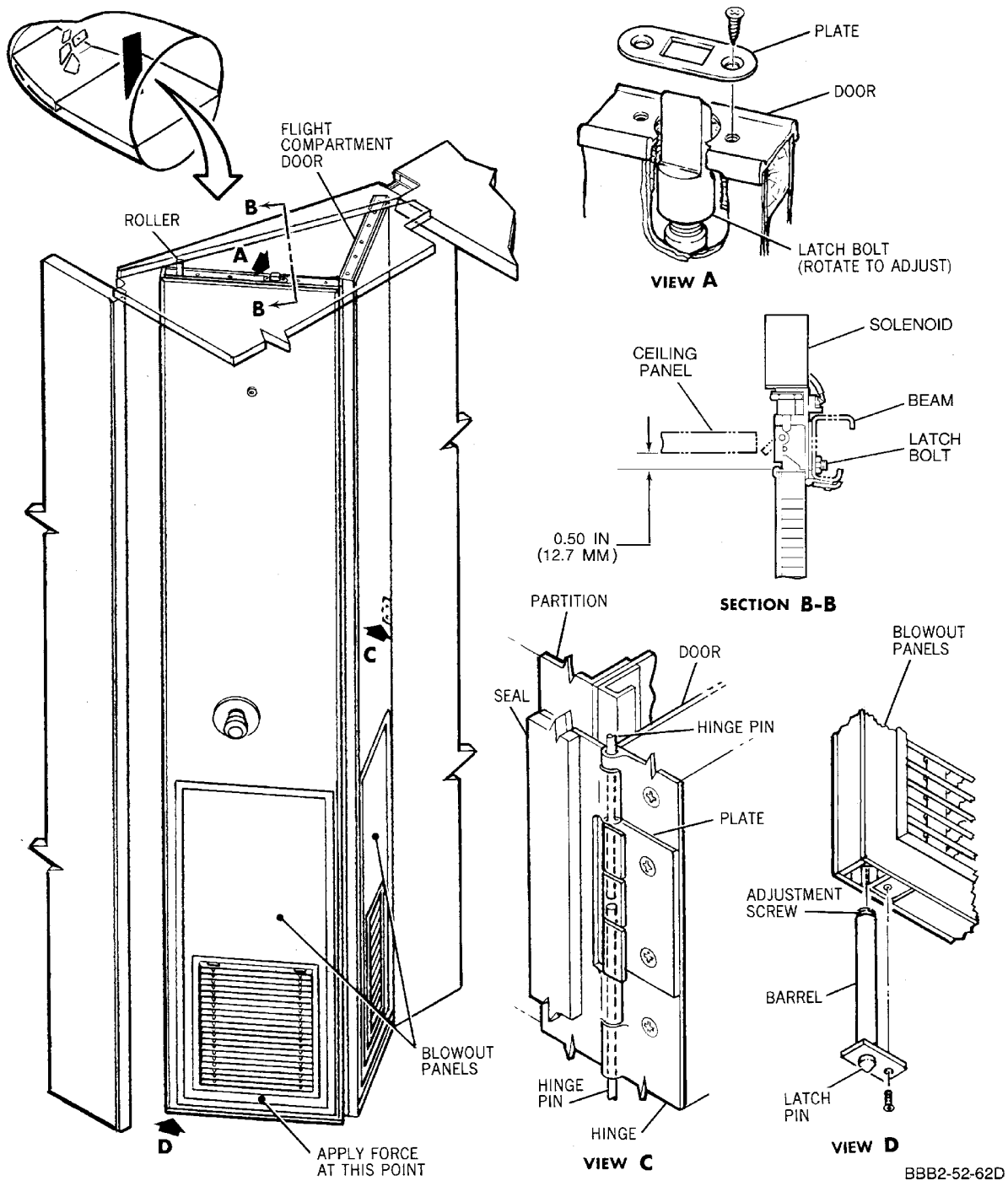
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TP-80MM-WJE

**52-52-01**

Config 1  
Page 202  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Flight Compartment Door -- Installation  
Figure 201/52-52-01-990-801**

**EFFECTIVITY**  
WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

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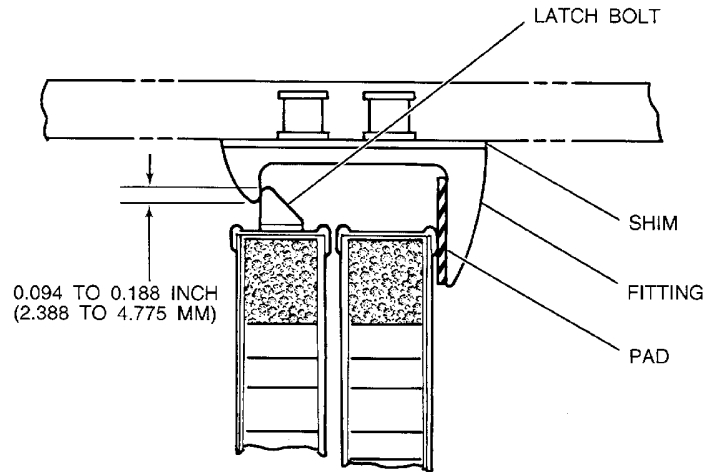
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**52-52-01**

Config 1  
Page 203  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 884; before incorp. of SB 52-159



BBB2-52-156

## Door Hold Open Latch - Adjustment Figure 202/52-52-01-990-809

WJE 884; before incorp. of SB 52-159

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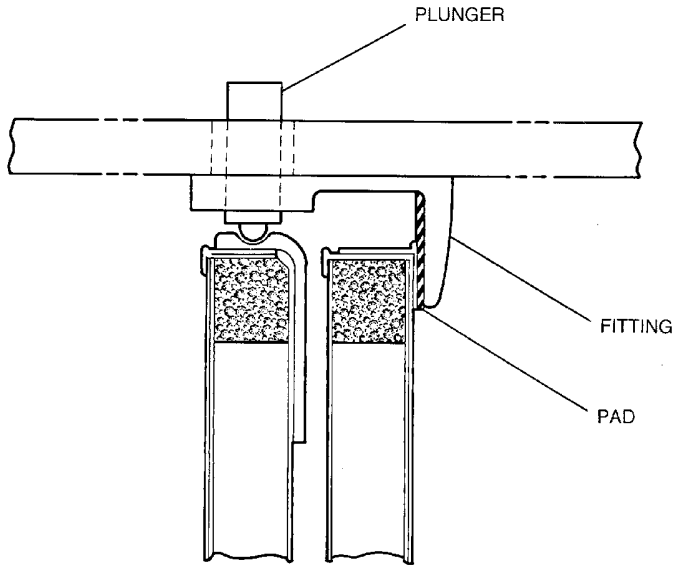
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# 52-52-01

Config 1  
Page 204  
Feb 01/2015

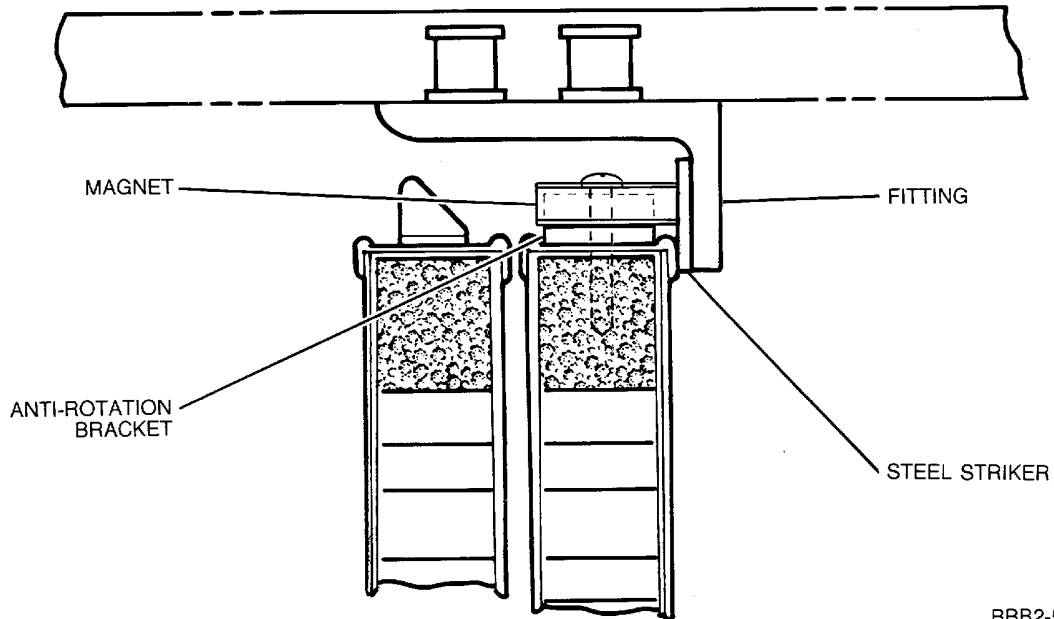


**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-157

**Door Hold Open Plunger - Adjustment**  
Figure 203/52-52-01-990-811



BBB2-52-159

**Door Hold Open Magnet - Adjustment**  
Figure 204/52-52-01-990-807

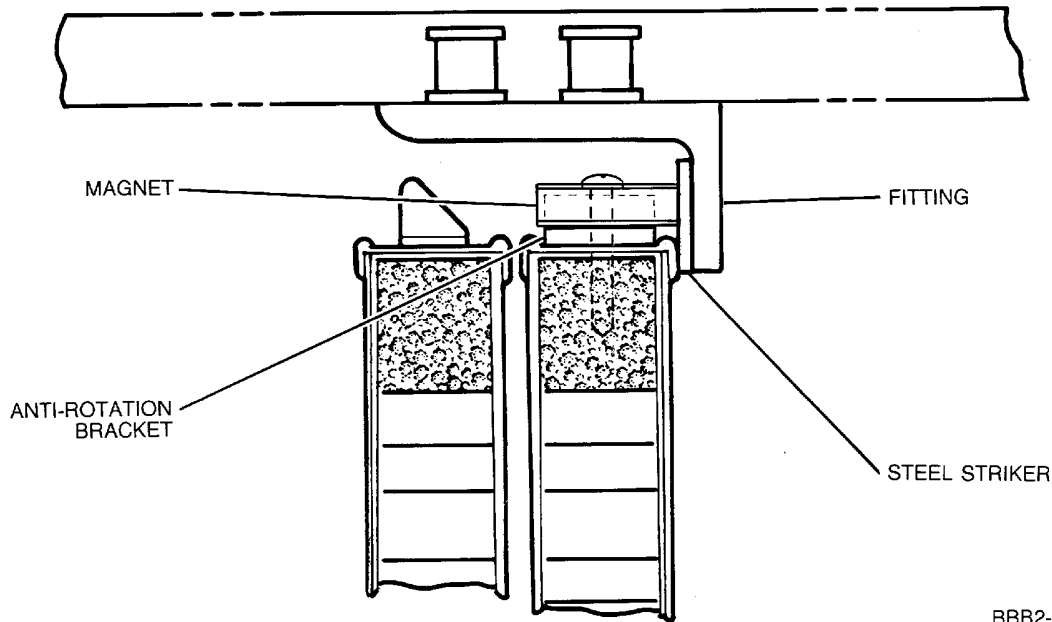
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TP-80MM-WJE

**52-52-01**

Config 1  
Page 205  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-159

**Door Hold Open Magnet - Adjustment**  
**Figure 205/52-52-01-990-813**

WJE 412, 414

WJE **5. General**

WJE A. This maintenance practice provides removal/installation and adjustment instructions for the flight  
WJE compartment door and components.

WJE **6. Removal/Installation Flight Compartment Door and Components**

WJE A. Remove Door (Figure 206)

WJE (1) Remove passenger compartment ceiling panel next to flight compartment door (CEILING  
WJE PANELS, SUBJECT 25-28-00)

WJE (2) Remove screws attaching door hinge to galley.

WJE **WARNING:** DOOR WEIGHS APPROXIMATELY 100 POUNDS (45 KG). MAKE CERTAIN  
WJE SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING DOOR.

WJE (3) Support door and disengage roller from ceiling track.

WJE (4) Remove door.

WJE B. Install Door (Figure 206)

WJE **NOTE:** If G1 galley has been removed for any reason, ensure door deadbolt and latch maintain  
WJE alignment. Adjust galley so that deadbolt is centered in header slot (G1 GALLEY,  
WJE SUBJECT 25-31-00)

WJE **WARNING:** DOOR WEIGHS APPROXIMATELY 100 POUNDS (45 KG). MAKE CERTAIN  
WJE SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING DOOR.

WJE (1) Make sure passenger compartment ceiling panel next to flight compartment door opening is  
WJE removed (CEILING PANELS, SUBJECT 25-28-00).

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TP-80MM-WJE

**52-52-01**

Config 1  
Page 206  
Feb 01/2015

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

WJE **WJE 412, 414 (Continued)**

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- (2) With roller assembly loosely attached (located on top edge of the left door section), position roller into the header guide slot. Utilize the slotted holes to ensure the door roller is centered in the guide slot. Once properly positioned, mark location, remove door, tighten the roller assembly into place, and reinstall roller into the header guide slot.

NOTE: The plastic barrier between the stainless steel roller assembly and aluminum door trim is intended to combat galvanic corrosion between the dissimilar metals.

- (3) Mate hinge with galley channel and attach with screws.

NOTE: Use spacer tool 01T023D528-19 (or equivalent) to support door and align hinge with galley channel.

- (4) Install passenger compartment ceiling panel next to flight compartment door opening.

C. Remove Door Strike Assembly (Figure 206)

- (1) Remove flight compartment ceiling panel next to door (CEILING PANELS, SUBJECT 25-28-00).

- (2) Disconnect plugs from aircraft wiring.

- (3) Remove screws, washers, and nuts attaching door strike to header.

- (4) Lift and remove door strike assembly.

D. Install Door Strike Assembly (Figure 206)

- (1) Make sure flight compartment ceiling panel next to door opening is removed (CEILING PANELS, SUBJECT 25-28-00).

- (2) Connect plugs to aircraft wiring.

- (3) Install shims, if required.

NOTE: The latch must engage the strike  $0.19 \pm 0.02$  inches.

- (4) Install screws, washers, and nuts attaching door strike to header.

- (5) Install flight compartment ceiling panel next to door opening.

E. Remove Deadbolt/Shaft (Figure 207)

NOTE: Remove door assembly from door jamb or remove passenger compartment ceiling panel before starting this procedure.

- (1) Remove screws attaching shroud assembly to door and remove shroud.

- (2) Turn flight deck handle to horizontal (unlocked) position and find four (4) cover screws.

- (3) Remove screws from bezel/handle.

NOTE: Screws have been installed with Loctite.

- (4) Turn handle 90 degrees to a vertical (locked) position and remove two (2) cover screws securing shaft to housing.

- (5) Pull flight deck handle straight out to remove from housing.

- (6) Remove (2) inner set screws.

- (7) Pull shaft up and remove from door.

- (8) Remove housing from door.

F. Install Deadbolt/Shaft (Figure 207)

NOTE: Remove door assembly from door jamb or remove passenger compartment ceiling panel before starting this procedure.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-52-01**

Config 1

Page 207

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE WJE 412, 414 (Continued)

- WJE  
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- WJE (1) Install deadbolt housing into door panel cutout and rotate to align with panel shaft hole.
  - WJE (2) Slide shaft into panel through hole at top of deadbolt housing.
  - WJE (3) Install two (2) inner set screws.
  - WJE (4) Locate banjo with red color-coded surface.
  - WJE (5) Position handle of housing.

WJE NOTE: Make sure flight deck handle is installed with red indicators visible when deadbolt is in  
WJE the unlocked (horizontal) position. Ensure green indicators are hidden.

WJE WARNING: LOCTITE 592 SEALANT IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE,  
WJE POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE  
WJE PRECAUTIONS WHEN LOCTITE 592 SEALANT IS USED.

- WJE
- WJE • GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN  
WJE CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY  
WJE IGNITION.
  - WJE • USE IN AN AREA OPEN TO THE AIR.
  - WJE • CLOSE THE CONTAINER WHEN NOT USED.
  - WJE • DO NOT GET LOCTITE 592 SEALANT IN THE EYES, ON THE SKIN, OR ON  
WJE YOUR CLOTHES.
  - WJE • DO NOT BREATHE THE GAS.

WJE WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:

- WJE
- WJE • MORE PRECAUTIONARY DATA
  - WJE • APPROVED SAFETY EQUIPMENT
  - WJE • EMERGENCY MEDICAL AID.

WJE TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE  
WJE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- WJE (6) Apply Loctite 222 (or Loctite 290, optional) to six (6) cover screws.
- WJE (7) Install handle with six (6) screws. Rotate handle as necessary to locate screw holes.
- WJE (8) Install shroud assembly and attach with two screws in door upper edge and two screws in flight  
WJE deck side of door.

### WJE G. Remove Latch Assembly (Figure 207)

WJE NOTE: Remove door assembly from door jamb or remove ceiling panel before starting this  
WJE procedure.

- WJE (1) Remove screw attaching pull assembly and spacer.
- WJE (2) Remove screws from latch body assembly to remove escutcheon assembly.
- WJE (3) Remove body assembly from rod assembly.
- WJE (4) Remove screws from shroud assembly (two on top and two on flight deck side of door).
- WJE (5) Pull shroud assembly up and over rod assembly.
- WJE (6) Remove rod assembly by pulling through top of door.

### WJE H. Install Latch Assembly (Figure 210)

WJE NOTE: Remove door assembly from door jamb or remove ceiling panel before starting this  
WJE procedure.

EFFECTIVITY  
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TP-80MM-WJE

# 52-52-01

Config 1  
Page 208  
Feb 01/2015

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

**WJE WJE 412, 414 (Continued)**

- WJE (1) Insert rod assembly through hole in top of door.
- WJE (2) Partially install body assembly into cutout.
- WJE (3) Align and adjust rod assembly bolt to obtain 0.27 protrusion
- WJE NOTE: Rod adjustment may be modified to satisfy door assembly installation requirements.
- WJE (4) Rotate squared mushroom fitting until it aligns with slot in slide.
- WJE (5) Slide latch assembly onto mushroom.
- WJE (6) Install escutcheon assembly from flight deck side of door with four (4) screws.
- WJE (7) Place shroud assembly over rods (bolts) and align screw holes.
- WJE NOTE: Shroud assembly should not be installed until both deadbolt and latch rods are in place.
- WJE (8) Install shroud assembly with two (2) screws on top and two (2) screws on flight deck side of door.

I. Remove Blowout Latch (Figure 206)

NOTE: Remove door assembly from door jamb before starting this procedure.

- WJE (1) Place door, cabin side down, on protected surface.
- WJE (2) Remove screws to remove blowout latch and spacers.

J. Install Blowout Latch (Figure 206)

NOTE: Remove door assembly from door jamb before starting this procedure.

- WJE (1) Place door, cabin side down, on protected surface.
- WJE (2) Make sure two layers of adhesive-backed foam tape are installed before installing blowout latch.
- WJE (3) Install screws to latch and spacers.

NOTE: Push spacers towards latch before tightening screws to ensure proper seal around latch.

K. Remove Viewing Glass and Shade Assembly (Figure 208)

- WJE (1) Slide shade assembly to upper position and fasten in place with Velcro strap.
- WJE (2) Remove two (2) screws from lower track assembly.
- WJE NOTE: It may be necessary to loosen side-mounted Velcro to remove lower track assembly.
- WJE (3) Slide shade assembly down to remove.
- WJE (4) Support bezel assembly and viewing glass on cabin side and remove four (4) screws from flight deck side.
- WJE (5) Remove viewing glass and bezel assembly.

L. Install Viewing Glass and Shade Assembly (Figure 208)

- WJE (1) Place viewing glass and bezel assembly in cabin side window opening.
- WJE (2) Fill gaps, as necessary, around viewing glass.
- WJE (3) Support viewing glass and bezel assembly while aligning bezel and installing four (4) screws.
- WJE (4) Slide shade assembly, with strap positioned on top, through bottom of track and fasten in place with Velcro strap.

EFFECTIVITY  
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TP-80MM-WJE

**52-52-01**

Config 1  
Page 209  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**WJE** **WJE 412, 414 (Continued)**

**WJE**

**WJE** (5) Install two (2) screws to secure track assembly.

**WJE** NOTE: Make sure side-mounted Velcro is laying flat and shade can move freely. Replace  
**WJE** Velcro, if necessary.  
**WJE**

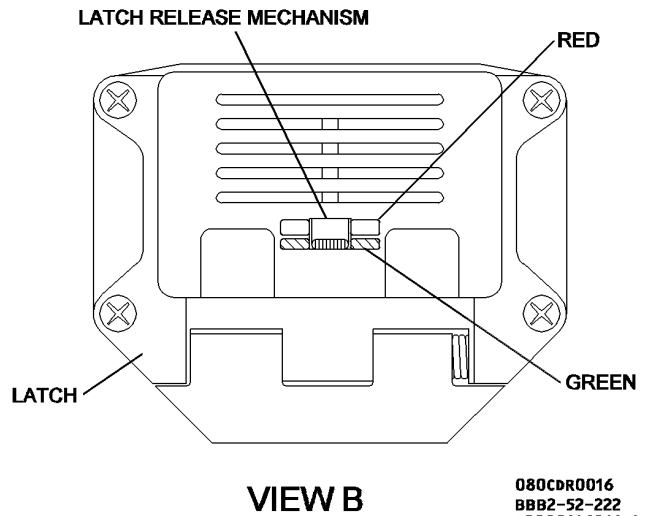
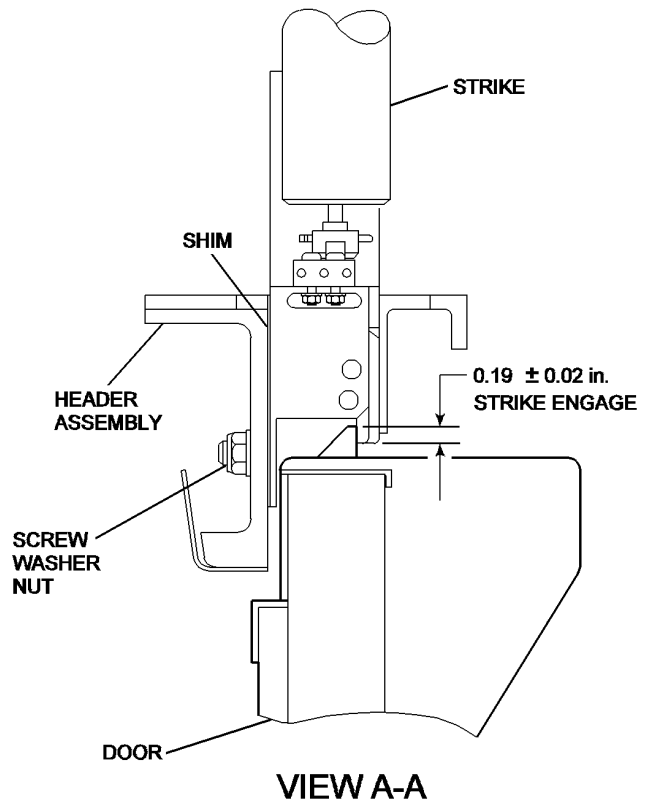
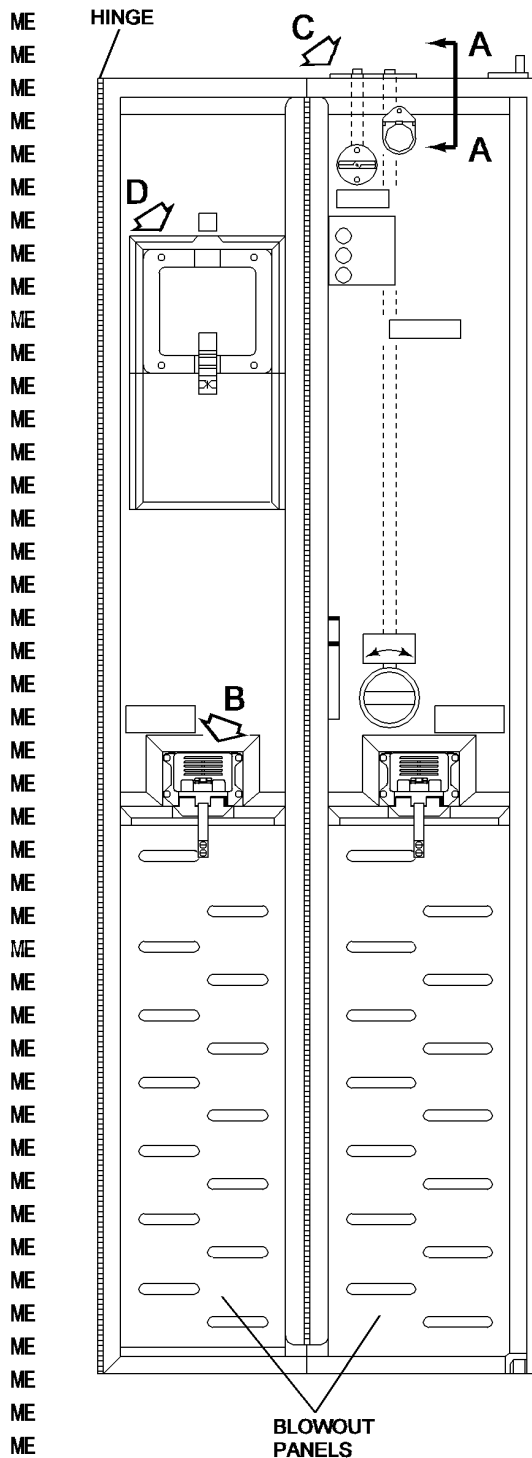
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**52-52-01**

Config 1  
Page 210  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Flight Compartment Door - Removal/Installation**  
Figure 206/52-52-01-990-816

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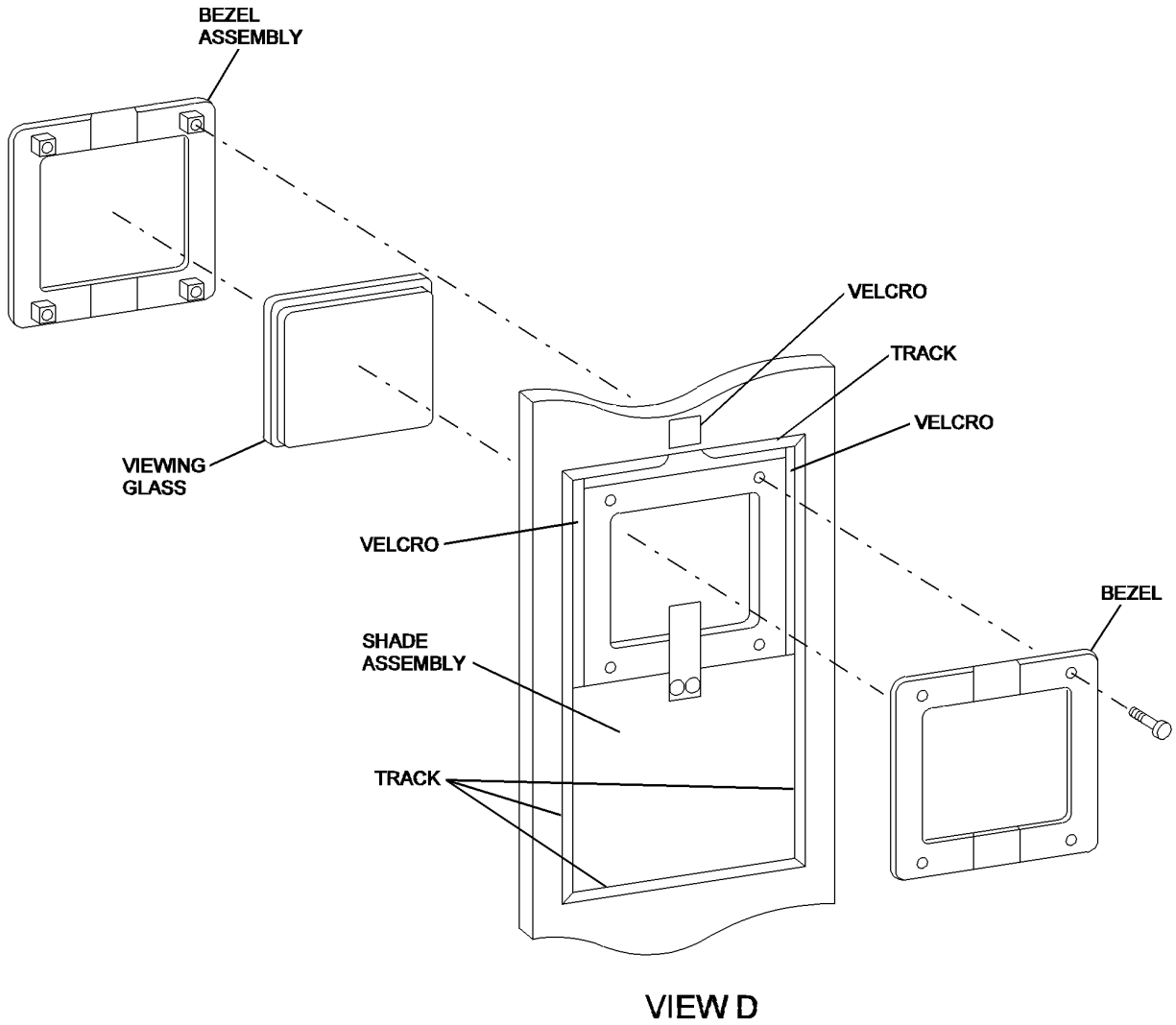
Config 1  
Page 211  
Feb 01/2015





# MD-80 AIRCRAFT MAINTENANCE MANUAL

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**Flight Compartment Door - Removal/Installation**  
**Figure 208/52-52-01-990-818**

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EFFECTIVITY  
WJE 412, 414

TP-80MM-WJE

## 52-52-01

Config 1  
Page 213  
Feb 01/2015





## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE WJE 412, 414 (Continued)

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WJE **7. Adjustment/Test Flight Compartment Door**

WJE A. Adjust Door (Figure 206)

WJE (1) Open door.

WJE (2) Add or remove shims between solenoid mechanism and beam so latch bolt does not bind  
WJE during operation.

WJE NOTE: The latch must engage the strike  $0.19 \pm 0.02$  inches.

WJE B. Check Blowout Panel Latches

WJE (1) Close flight compartment door.

WJE (2) Ensure latch slider is locked in the green sector. If slider does not fully engage, replace latch.

WJE C. Deadbolt Key Functionality Test

WJE (1) Rotate cabin side key in both directions and make sure bolt extends and retracts.

WJE (2) If key does not lock or unlock bolt, return latch to manufacturer.

WJE NOTE: When deadbolt is engaged (locked) using the cabin side key only, the flight deck side  
WJE handles split and rotate  $90^\circ$  to each other. The stationary handle can then be rotated to  
WJE the unlocked or lock-out (key disabled) position (Figure 209).

WJE (3) Make sure cabin side key cannot retract the bolt and handles remain in lock-out position.  
WJE Green dots are fully visible in the lock-out position.

WJE D. Check Door Strike Functionality

WJE (1) Do Door Unlock Test (COCKPIT DOOR REMOTE ACCESS SYSTEM - ADJUSTMENT/TEST,  
WJE PAGEBLOCK 52-52-07/501) to make sure door strike operates correctly.

EFFECTIVITY  
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TP-80MM-WJE

**52-52-01**

Config 1  
Page 216  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FLIGHT COMPARTMENT DOOR - ADJUSTMENT/TEST

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 52-52-01-720-801**

**2. Functional Check of the Flight Compartment Door Blowout Panels**

NOTE: This procedure is a scheduled maintenance task.

**A. General**

(1) This task is not applicable to the enhanced intrusion resistant flight compartment door. It is applicable to the standard type flight compartment door only.

**B. Equipment and Materials**

Description	Part Number
Force gage, hand held	0-50 pounds

NOTE: It is possible that some materials in the Equipment and Materials Table cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials are legally permitted in your location. All persons must obey all applicable federal, state, local and provincial laws and regulations when it is necessary to work with these materials.

**C. Prepare for the Functional Check of the Flight Compartment Door Blowout Panels**

SUBTASK 52-52-01-940-001

(1) Close flight compartment door.

**D. Functional Check of the Flight Compartment Door Blowout Panels**

SUBTASK 52-52-01-720-001

(1) Measure force required to open each blowout panel.

(a) Apply force to aft side of panel, midway of lower edge of panel, 0.38 inch (9.7 mm) from lower edge of panel.

(b) Opening each panel should require force of  $20 \pm 1$  pounds ( $9 \pm 0.5$  Kg) and both latches on each panel should disengage simultaneously.

(2) Install blowout panels.

**E. Job Close-up**

SUBTASK 52-52-01-942-001

(1) Remove all tools and equipment from work area. Make certain area is clean.

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————— END OF TASK —————

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52-52-01

TP-80MM-WJE

Page 501  
Feb 01/2015

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

**FLIGHT COMPARTMENT DOOR - INSPECTION/CHECK**

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**1. Door Latch**

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A. Make sure deadbolt latch is in the unlocked position. Open and close door to make sure latch engages.

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B. With the door in the closed position, pull down on pull assembly and make sure rod disengages the door jamb. Make sure rod engages the door jamb when pull assembly is released.

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**2. Blowout Latch**

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(Figure 601)

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A. Check latch for contamination or tampering. Remove and return latch to the manufacturer if signs of contamination or tampering are evident.

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B. Push latch release mechanism up to the red indicator stripe. Make sure latch opens and the blowout panel moves freely.

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C. Push latch to lock in place and make sure latch release mechanism moves to the green indicator stripe.

EFFECTIVITY  
WJE 412, 414

TP-80MM-WJE

**52-52-01**

Page 601  
Feb 01/2015



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

- WJE 3. **Deadbolt T-Key Full Engagement Check**  
WJE (Figure 602)  
WJE A. Remove deadbolt cover assembly.  
WJE (1) From flight deck side of door, rotate deadbolt handle 90° counterclockwise to extend the bolt  
WJE and expose the four (4) cover screws.  
WJE (2) Remove cover screws.  
WJE (3) Rotate handle 90° clockwise to retract the bolt. Remove remaining two (2) cover screws.  
WJE B. Check T-Key “wings” are seated correctly within the handle slot and the handle halves are not  
WJE distorted or damaged.  
WJE C. Replace cover assembly if there is evidence of damage to the handle.  
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EFFECTIVITY  
WJE 412, 414

TP-80MM-WJE

**52-52-01**

Page 603  
Feb 01/2015





# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FLIGHT COMPARTMENT DOOR - CLEANING/PAINTING

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WJE **1. Cleaning Procedures**

WJE A. General

- WJE (1) Protect all fabricated assemblies at all times during storage to avoid soiling.
- WJE (2) Do not allow airborne dust to accumulate on assembly surfaces. A thorough, routine vacuum cleaning and wiping with a clean cotton cloth will remove loose dust before it can be driven into the surface of the fabric or decorative material.
- WJE (3) Immediately contain and wipe up all spills as they occur. Wipe, blot, or soak up the spillage using a clean, white cotton cloth. Confine the area of the spill by working from the edges toward the center. Clean the soiled area immediately afterwards. Properly dispose of cleaning cloths in approved containers.
- WJE (4) Protect blowout latch by covering with plastic when adjacent parts are cleaned to prevent contamination and/or damage to latch.

WJE B. Equipment and Materials

- WJE (1) Use of the following material is authorized:

**Table 701**

Name and Number	Manufacturer
Fantastik™ Liquid Cleaner	Dow Products, Indianapolis, IN
Formula 409™ Liquid Cleaner	Clorox Company, Oakland, CA
Joy™ Liquid Detergent	Procter & Gamble, Cincinnati, OH
Butyl Cellosolve Solvent	commercially available
Cotton Cloth	commercially available
Rubber Gloves	commercially available
Distilled Water	commercially available

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C. Detailed Instructions

- WJE (1) Identify the surface requiring cleaning.
- WJE (2) Select the proper cleaning solution from Table 702.

**Table 702**

Surface to be Cleaned	Cleaning Solution
Non-metallic parts Decorative Laminate, Rubstrips, Plastic, Painted Surfaces, etc.	Fantastik™ Liquid Cleaner Formula 409™ Liquid Cleaner Joy™ Liquid Detergent
Metal parts	Butyl Cellosolve Solvent
<b>NOTE:</b> Equivalent substitutes may be used for listed items.	

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- (3) Put on protective gloves.
- (4) Wash non-metallic parts (excluding electrical components) (door surface, louvers, etc.).

EFFECTIVITY  
WJE 412, 414

**52-52-01**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- WJE (a) Prepare a cleaner and water solution. Use one ounce (30 ml) of detergent per two and  
WJE one half gallons (9.5 liters) water or use liquid cleaner.
- WJE (b) Test the surface to be cleaned by first applying the cleaning agent to a small, obscure  
WJE area of the material.
- WJE (c) Clean the soiled area with a clean, white cotton cloth dampened (not saturated) with the  
WJE appropriate cleaning agent. Avoid spreading any stains by working from the outer edges  
WJE toward the center.
- WJE NOTE: During the application of a cleaning agent with a cloth, rotate the cloth frequently  
WJE so that a clean section is presented to the material being cleaned. The same  
WJE applies to rinsing or drying.
- WJE (d) Evaporate cleaning solutions rapidly from fabric and plastic surfaces by directing an air  
WJE stream from clean compressed air; clean, air-driven vacuum cleaner; or by fanning  
WJE toward the material to aid in preventing formation of rings.
- WJE (e) Thoroughly rinse each part with distilled water at room temperature. Allow parts to dry  
WJE thoroughly at room temperature.

**CAUTION:** DO NOT USE ANY KIND OF CLEANING SOLUTION ON THE BLOWOUT LATCH ASSEMBLIES.

- WJE (5) Wash metallic parts (excluding electrical components) (hinges, trims, plates, etc.).
- WJE (a) Test the surface to be cleaned by first applying the cleaning agent to a small, obscure  
WJE area of the material.
- WJE (b) Clean the soiled area with a clean, white cotton cloth dampened (not saturated) with the  
WJE appropriate solvent. Removable parts may be submerged in solvent to allow cleaning  
WJE solution to flush all internal and external surfaces.
- WJE (c) Thoroughly dry each part using clean compressed air or a clean, air-driven vacuum  
WJE cleaner.
- WJE (6) Store all parts in a dry, dust-free container if check or assembly is not performed immediately.

### 2. Painting Procedures

#### A. General

- WJE (1) Work areas shall be clear and reasonably free of dust and severe temperature changes which  
WJE adversely affect the application and cure of the coatings.
- WJE (2) All films shall be smooth, reasonably free of lint, and free of imperfections such as overspray,  
WJE runs, sags, blisters, and orange peel. If the film is decorative, it shall provide the desired hiding  
WJE or color match.
- WJE (3) Use a soft, natural-bristled brush. Use round or oval brush for rivets, bolts, and rough irregular  
WJE surfaces. Use flat brushes, maximum five inches wide, for large flat or plain areas.
- WJE (4) use wipers (cheesecloth, gauze, new or laundered rags, or other absorbent materials) free of  
WJE contamination from silicone grease, silicone oil, or metal chips and shavings.

#### B. Hazards and Safety

- WJE (1) Many solvents and paint materials are flammable and toxic. Consult appropriate fire, industrial  
WJE hygiene, and safety organizations on facilities, equipment, ventilation, and safety procedures.
- WJE (2) Dispose of solvents and paint saturated rags in appropriate containers.
- WJE (3) Avoid prolonged or repeated breathing of vapors and skin contact with solvents.
- WJE (4) Take necessary precautions to protect personnel and all items adjacent to paint area from  
WJE paint overspray, fumes, and dust.

EFFECTIVITY  
WJE 412, 414

# 52-52-01

TP-80MM-WJE

Page 702  
Feb 01/2015

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

- WJE C. Pre-Application Procedures
- WJE (1) Surface Abrading
- WJE (a) Lightly abrade all surfaces with appropriate grade of aluminum oxide abrasive paper.
- WJE (2) Masking
- WJE (a) Mask or protectively cover all areas not to be coated. Cover floor, seats, dividers, etc., as required.
- WJE (b) Use masking products which do not cause damage to painted or finished surfaces. Do not use masking products having silicone adhesives.
- WJE (3) Cleaning
- WJE (a) All surfaces, painted or unpainted, shall be clean and dry at time of painting. The surface shall be free from dust, dirt, grease, rust, corrosion, loose paint, fingerprints, or other contamination.
- WJE (b) Clean the abrasion products and/or dust by wiping the surface with a clean wiping cloth or blow the dust off with clean air. Use a tack-rag on the surface immediately prior to painting. The tack-rag method cleans by lightly wiping the surface to remove loose dirt, dust, or lint. It is not a scrubbing or washing operation.
- WJE 1) Prepare a tack-rag by moistening a clean cloth with an appropriate solvent.
- WJE 2) Wipe the surface very lightly. Change to a clean tack-rag as soon as soil is noticed on the cloth.
- WJE 3) No visible residue or solvent should remain on the surface.
- WJE 4) Paint the surface immediately.
- WJE D. Application Procedures
- WJE (1) Paint Application
- WJE (a) Apply paint in short light strokes at first, holding the brush at approximately 45° angle to the surface. Paint in one general direction.
- WJE (b) Work the paint into irregular surfaces.
- WJE (c) Continue to spread paint evenly by using long, rapid, light strokes. Allow only the tip of the brush to drag lightly to prevent brush marks, runs, or sags.
- WJE (d) Cure all coatings sufficiently beyond the tender stage before handling or inspection.
- WJE E. Clean-up Procedures
- WJE (1) Clean brush immediately upon completion of job and at the end of each day.
- WJE (2) Do not allow brush to rest on its bristles.
- WJE (3) Remove all masking.
- WJE (4) Dispose of solvent-saturated and paint-saturated rags in appropriate containers.
- WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FLIGHT COMPARTMENT DOOR - APPROVED REPAIRS

WJE

WJE **1. General**

WJE A. Protect all fabricated assemblies at all times during storage to avoid soiling.

WJE B. All damage exceeding damage limits listed below must be referred to Engineering for disposition.

WJE C. Minor repairs to decorative laminate surfaces or trim are allowed. Repairs must not compromise the  
WJE door's ballistic and intrusion-resistant qualities. Contact the manufacturer for repair procedures on  
WJE questionable repairs or dimensions.

WJE **2. Repair Door Panels**

WJE A. Repair Panels

WJE (1) Small Dents and Scratches (cabin side) - Surface damage only (damage less than 0.005 inch  
WJE deep) - no damage to skins or core.

WJE (a) Materials Required

WJE

WJE

ITEM	IDENTIFICATION	SOURCE
Solvent	MEK™ (DPM 535)	Commercially available
	Isopropyl alcohol (DPM 530)	Commercially available
	Butyl Carbitol	Union Carbide
Filling and Fairing	Ultra Smooth #8™ 15-3	Ad-Tech

WJE

(b) Clean damaged area of moisture and debris.

WJE

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**WARNING:** METHYL ETHYL KETONE IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN METHYL ETHYL KETONE IS USED.

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- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.

WJE

- USE IN AN AREA OPEN TO THE AIR.

WJE

- CLOSE THE CONTAINER WHEN NOT USED.

WJE

- DO NOT GET METHYL ETHYL KETONE IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.

WJE

- DO NOT BREATHE THE GAS.

WJE

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WJE

**WARNING:** ISOPROPYL ALCOHOL IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, AND POISONOUS. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN ISOPROPYL ALCOHOL IS USED.

WJE

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.

WJE

- USE IN AN AREA OPEN TO THE AIR.

WJE

- CLOSE THE CONTAINER WHEN NOT USED.

WJE

- DO NOT GET ISOPROPYL ALCOHOL IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.

WJE

- DO NOT BREATHE THE GAS.

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EFFECTIVITY  
WJE 412, 414

**52-52-01**

TP-80MM-WJE

Page 801  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE (WARNING PRECEDES)**

**WJE**                    **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS  
**WJE**                    FOR:

- WJE**                    • MORE PRECAUTIONARY DATA
- WJE**                    • APPROVED SAFETY EQUIPMENT
- WJE**                    • EMERGENCY MEDICAL AID.

**WJE**                    TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE  
**WJE**                    PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- WJE**                    (c) Wipe repair are clean with solvent.
- WJE**                    (d) Fill and fair, as required, with surface fillers.
- WJE**                    (e) For decorative surfaces, reapply paint or decorative laminate as required per drawing.

**WJE**                    (2) Small Holes and Gouges (cabin side) - Damage less than 0.5 square inch and penetrates  
**WJE**                    skins without damage to the core.

**WJE**                    (a) Materials Required

ITEM	IDENTIFICATION	SOURCE
Solvent	MEK™ (DPM 535)	Commercially available
	Isopropyl alcohol (DPM 530)	Commercially available
	Butyl Carbitol	Union Carbide
Edge potting	Epocast 87005™ (DPM 5357-2)	Ciba-Geigy
	FR-8136™ (DPM 5357-1)	Ciba-Geigy
Filling and Fairing	Ultra Smooth #8™ 15-3	Ad-Tech

**WJE**                    (b) Potting Compound Details

POTTING COMPOUND	MIX RATIO	CURE TEMPERATURE	CURE TIME
SLE-3012	100A:100B		
Epocast 87005	100A:35B	77°F	48 hours
FR-8136	100A:50B		

**WJE**                    (c) Clean damaged area of moisture and debris.

**WJE**                    **WARNING:** METHYL ETHYL KETONE IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE,  
**WJE**                    POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF  
**WJE**                    THE PRECAUTIONS WHEN METHYL ETHYL KETONE IS USED.

- WJE**                    • GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL)  
**WJE**                    CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY  
**WJE**                    IGNITION.
- WJE**                    • USE IN AN AREA OPEN TO THE AIR.
- WJE**                    • CLOSE THE CONTAINER WHEN NOT USED.
- WJE**                    • DO NOT GET METHYL ETHYL KETONE IN THE EYES, ON THE SKIN, OR  
**WJE**                    ON YOUR CLOTHES.
- WJE**                    • DO NOT BREATHE THE GAS.

EFFECTIVITY  
**WJE 412, 414**

# 52-52-01

TP-80MM-WJE

Page 802  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE (WARNING PRECEDES)

- WJE **WARNING:** ISOPROPYL ALCOHOL IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE,  
WJE AND POISONOUS. MAKE SURE ALL PERSONS OBEY ALL OF THE  
WJE PRECAUTIONS WHEN ISOPROPYL ALCOHOL IS USED.
- WJE • GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL)  
WJE CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY  
WJE IGNITION.
  - WJE • USE IN AN AREA OPEN TO THE AIR.
  - WJE • CLOSE THE CONTAINER WHEN NOT USED.
  - WJE • DO NOT GET ISOPROPYL ALCOHOL IN THE EYES, ON THE SKIN, OR ON  
WJE YOUR CLOTHES.
  - WJE • DO NOT BREATHE THE GAS.

- WJE **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS  
WJE FOR:
- WJE • MORE PRECAUTIONARY DATA
  - WJE • APPROVED SAFETY EQUIPMENT
  - WJE • EMERGENCY MEDICAL AID.
- WJE TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE  
WJE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

WJE (d) Wipe repair area clean with solvent.

- WJE **WARNING:** LOW DENSITY EDGE EPOXY FILLER IS AN AGENT THAT IS POISONOUS,  
WJE CARCINOGENIC, A SENSITIZER, AND AN IRRITANT. MAKE SURE ALL  
WJE PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LOW DENSITY EDGE  
WJE EPOXY FILLER IS USED.
- WJE • DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR  
WJE FLAMES.
  - WJE • USE IN AN AREA OPEN TO THE AIR.
  - WJE • CLOSE THE CONTAINER WHEN NOT USED.
  - WJE • DO NOT GET LOW DENSITY EDGE EPOXY FILLER IN THE EYES, ON THE  
WJE SKIN, OR ON YOUR CLOTHES.
  - WJE • DO NOT BREATHE THE GAS.

- WJE **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS  
WJE FOR:
- WJE • MORE PRECAUTIONARY DATA
  - WJE • APPROVED SAFETY EQUIPMENT
  - WJE • EMERGENCY MEDICAL AID.
- WJE TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE  
WJE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- WJE (e) Inject edge potting into all exposed core.
- WJE (f) Cure edge potting per manufacturer's recommendations.
- WJE (g) Fill and fair, as required, with surface fillers.

EFFECTIVITY  
WJE 412, 414

TP-80MM-WJE

**52-52-01**

Page 803  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- WJE (h) For decorative surfaces, reapply paint or decorative as required per drawing.
- WJE (3) Large Holes and Gouges
- WJE (a) Engineering will be contacted for proper repair procedures.

### WJE 3. Repair Decorative Laminate Covering

#### WJE A. Repair Covering

- WJE (1) Small Tears, Nicks - Material Attached

#### WJE (a) Materials Required

ITEM	IDENTIFICATION	SOURCE
Contact Cement	Fastbond 10™	3M
	Fastbond 30™ (DPM 6073)	3M

#### WJE (b) Adhesive Details

ADHESIVE	MIX RATIO	CURE TEMPERATURE	CURE TIME
Fastbond 10™	N/A	See manufacturer's requirements	See manufacturer's requirements
Fastbond 30™	N/A	See manufacturer's requirements	See manufacturer's requirements

- WJE (c) Clean faying surfaces.
- WJE (d) Use contact cement to bond faying surfaces together using pressure to ensure permanent bond.
- WJE (e) Touch-up splice line with matching paint, as required.
- WJE (2) Large Tears, Nicks - (greater than 2 in<sup>2</sup>) or Burns (loss of texture)
- WJE (a) Remove decorative laminate from panel and replace per drawing.

### WJE 4. Repair Inserts

#### WJE A. Repair Inserts

- WJE (1) Thread Damage, Cracked or Broken Insert, Spun Insert
  - WJE (a) Remove and replace by use of heated insert iron.
- WJE (2) Sanded Insert that Removes Insert Coating
  - WJE (a) Apply one coat of corrosion-resistant epoxy primer per KME-P-1012.

EFFECTIVITY  
WJE 412, 414

# 52-52-01

TP-80MM-WJE

Page 804  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE COCKPIT DOOR REMOTE ACCESS SYSTEM - REMOVAL/INSTALLATION

WJE **1. General**

WJE A. This procedure has the removal/installation instructions for the cockpit door remote access system.  
WJE (Figure 401)

WJE **2. Removal/installation Cockpit Door Remote Access System**

WJE A. Remove Keypad

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

**LOWER EPC, DC**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD
R	33	B10-9045	RAS CONTROL

(2) Remove EPC aft wall upper partition.

(3) Remove screws attaching keypad mounting assembly to EPC aft wall structure.

(4) Support keypad assembly and disconnect electrical plug from aircraft wiring harness.

(5) Remove keypad assembly.

B. Install Keypad

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that these circuit breakers are open and have safety tags:

**LOWER EPC, DC**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD
R	33	B10-9045	RAS CONTROL

(2) Engage keypad rear electrical plug to aircraft wiring harness.

(3) Place keypad mounting assembly in EPC partition cutout.

(4) Install screws attaching keypad mounting assembly to EPC aft wall structure.

(5) Install EPC aft wall upper partition.

(6) Remove the safety tags and close these circuit breakers:

**LOWER EPC, DC**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD
R	33	B10-9045	RAS CONTROL

C. Remove Control Panel

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE**                    **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE  
**WJE**                    CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO  
**WJE**                    PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

**WJE**                    (1) Open these circuit breakers and install safety tags:

**WJE**                    **LOWER EPC, DC**  
**WJE**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD
R	33	B10-9045	RAS CONTROL

**WJE**                    (2) Loosen Dzus fasteners attaching control panel to overhead panel.  
**WJE**                    (3) Support panel and disconnect electrical plug from overhead panel wiring harness.  
**WJE**                    (4) Remove control panel.

**WJE**                    D. Install Control Panel

**WJE**                    **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE  
**WJE**                    CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO  
**WJE**                    PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

**WJE**                    (1) Make sure that these circuit breakers are open and have safety tags:

**WJE**                    **LOWER EPC, DC**  
**WJE**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD
R	33	B10-9045	RAS CONTROL

**WJE**                    (2) Engage panel rear electrical plug to overhead panel wiring harness.  
**WJE**                    (3) Position control panel in overhead panel.  
**WJE**                    (4) Tighten Dzus fasteners attaching control panel to overhead panel.

**WJE**                    E. Remove Control Panel Indicator Lights

**WJE**                    (1) Hold lens cap and turn counterclockwise to loosen and remove.  
**WJE**                    (2) Hold lamp and pull forward to release from base.

**WJE**                    F. Install Control Panel Indicator Lights

**WJE**                    (1) Place lamp in base push in firmly.  
**WJE**                    (2) Position lens cap and turn clockwise until tight.  
**WJE**                    (3) Remove the safety tags and close these circuit breakers:

**WJE**                    **LOWER EPC, DC**  
**WJE**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD
R	33	B10-9045	RAS CONTROL

**WJE**                    **3. Access Code Modification**

**WJE**                    A. Program Access Code

**WJE**                    **NOTE:** Programming is enabled ONLY when the cockpit control switch is held in the UNLK position  
**WJE**                    for the entire programming procedure.

**WJE**                    **NOTE:** The access code is to be modified only when appropriate engineering or maintenance  
**WJE**                    documents are issued to do so. Code information is available only by contacting the Director  
**WJE**                    of Maintenance or Chief Inspector and is not contained in any engineering or maintenance  
**WJE**                    documents.

EFFECTIVITY WJE 412, 414
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**52-52-07**

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

- WJE (1) On the overhead cockpit control panel, push in, turn counterclockwise from default AUTO
- WJE position, and hold the cockpit control switch in the UNLK position.
- WJE (2) Push \*\*, the current four digit access code, Then # to enter the Programming mode.
- WJE • Make sure the green LED blinks at a half-second rate.
- WJE (3) Push \*, 0 (zero), the new four digit access code, then # to change the access code.
- WJE • Make sure two (2) short beeps sound to indicate modification is complete.
- WJE (4) Push \*\*# or wait ten (10) seconds to exit Programming mode.
- WJE (5) Release the cockpit control switch.
- WJE (6) Perform an Auto Unlock Test. (PAGEBLOCK 52-52-07/501)
- WJE

EFFECTIVITY  
WJE 412, 414

TP-80MM-WJE

**52-52-07**

Page 403  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE** COCKPIT DOOR REMOTE ACCESS SYSTEM - ADJUSTMENT/TEST

**WJE** **1. General**

**WJE** A. This section provides adjustment/test procedures for the Cockpit Door Remote Access System  
**WJE** (RAS). The RAS control panel is located in the overhead control panel. The RAS keypad is located  
**WJE** at eye level adjacent to the cockpit door and near the flight attendant jump seat.

**WJE** **2. Equipment and Materials**

**WJE** NOTE: Equivalent substitutes may be used instead of the following listed items:

Name and Number	Manufacturer
Stopwatch or timer	Commercially available

**WJE** **3. Operational Test - Cockpit Door Remote Access System**

**WJE** A. Prepare for Test

- WJE** (1) Supply electrical power. (SUBJECT 24-20-00 Page 1)
- WJE** (2) Prior to applying power to the aircraft, make sure the door will not lock when closed.
- WJE** (3) Make sure that these circuit breakers are closed:

**LOWER EPC, DC**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD
R	33	B10-9045	RAS CONTROL

**UPPER EPC, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT

- WJE** (4) The keypad buzzer sounds briefly and the red LED lights momentarily.
- WJE** (5) Make sure the door solenoid moves to the locked (pin down) position.
- WJE** NOTE: The door does not have to be in the closed position for the lock solenoid to operate.
- WJE** (6) Make sure no keypad LEDs light.

**WJE** B. Control Panel Lighting Test

- WJE** (1) Make sure that these circuit breakers are closed:

**LOWER EPC, LIGHTS - R DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
N	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	25	B1-188	WARNING LIGHT DIMMING

- WJE** (2) Push and hold ANNUN/DIGITAL LTS test switch on the forward overhead switch panel. Make  
**WJE** sure "AUTO UNLOCK" and "LOCK FAIL" annunciators light on the cockpit control.
- WJE** (3) Pull the "DIM" switch on the forward overhead switch panel. Make sure "AUTO UNLOCK" and  
**WJE** "LOCK FAIL" annunciators dim on the cockpit control.
- WJE** (4) Release ANNUN/DIGITAL LTS test switch. Make sure "AUTO LOCK" and "LOCK FAIL"  
**WJE** annunciators go off.

EFFECTIVITY  
**WJE 412, 414**

**52-52-07**

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- WJE (5) Push "DIM" switch to the off position.
- WJE (6) Turn the control knob fully clockwise on the overhead panel light control. Make sure the cockpit control panel back lighting becomes brighter.
- WJE (7) Turn knob to off position. Make sure the cockpit control panel back lighting goes out.

### C. Power Loss Simulation Test

- WJE (1) Make sure the door solenoid is in the locked (pin down) position.
- WJE (2) Open this circuit breaker:

#### LOWER EPC, DC

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD

- WJE (3) Make sure the door remains locked and no keypad LEDs light.
- WJE (4) Close this circuit breaker:

#### LOWER EPC, DC

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	24	B1-454	RAS KEYPAD

- WJE (5) Make sure the door remains locked and no keypad LEDs light.

WJE NOTE: The door may momentarily unlock during the keypad power up sequence. The red LED may light and the buzzer may sound.

- WJE (6) Open this circuit breaker:

#### LOWER EPC, DC

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	33	B10-9045	RAS CONTROL

- WJE (7) Make sure the door remains locked.

- WJE (8) Close this circuit breaker:

#### LOWER EPC, DC

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	33	B10-9045	RAS CONTROL

- WJE (9) Make sure the door remains locked and no LEDs light.

### D. Auto Unlock Test

- WJE (1) Enter current valid code followed by #. At each key stroke, an audible sound is heard and the amber LEDs light.

WJE NOTE: Current valid code information is available only by contacting the Director of Maintenance or Chief Inspector and is not contained in any engineering or maintenance documents.

WJE NOTE: Entering an illegal code will be indicated by a short 1 second sound. Failure to press a key for a duration of 10 seconds will abort the sequence, indicated by a 1 second sound.

WJE NOTE: The following parameters are preset to these default values:

- WJE • Access code: Variable
- WJE • Access request timeout (Ta): 60 ± 5 seconds
- WJE • Deny duration (Td): 30 Minutes ± 10 seconds

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- WJE • Auto unlock duration (Tr): 5 ± 1 seconds.
- WJE (2) Make sure the amber LED (Auto) on keyboard lights.
- WJE (3) Make sure the amber "AUTO UNLOCK" on the cockpit control panel lights at Ta = 0s.
- WJE (4) Make sure the cockpit aural warning sounds for approximately 2 seconds at Ta = 0s.
- WJE (5) Make sure the cockpit aural warning sounds for approximately 2 seconds at Ta = 30s or 1/2 Ta.
- WJE (6) Make sure the cockpit aural warning sounds a constant pulsed tone from approximately Ta = 40s (or 2/3 Ta) to Ta = 60s (or Ta).
- WJE (7) Make sure the amber "AUTO UNLOCK" on the cockpit control panel flashes at approximately Ta = 40s (or 2/3 Ta).
- WJE (8) At approximately Ta = 60s, the keypad amber (Auto) LED goes off and the green (Unlock) LED lights for 5 seconds.
- WJE (9) The door unlocks at Ta = 60s for 5 seconds (Tr). Make sure the solenoid locks and unlocks the door during this period.
- WJE (10) "LOCK FAIL" on the control panel lights and aural warning sounds a constant tone at Ta = 60s for the 5 second Auto Unlock duration (Tr).
- WJE (11) After the Auto Unlock duration of 5 seconds, the door and door indications return to the Locked status - door solenoid locked (pin down), no keypad LEDs light, cockpit lamps off, and no aural warning sounds.

### E. Deny Entry Test

- WJE (1) Enter current valid code followed by #. At each keystroke, an audible sound is heard and the amber LED lights.
- WJE NOTE: This test verifies the proper operation of the "DENY" function. The crew can deny the Auto Unlock request from the keypad by momentarily turning the cockpit control function switch to the "DENY" (clockwise) position. This test section requires a digital watch or stopwatch. The elapsed time for this section is identified as "Td" followed by the seconds elapsed since the start of the mode. Default time for "DENY" mode is 30 minutes.
- WJE NOTE: Current valid code information is available only by contacting the Director of Maintenance or Chief Inspector and is not contained in any engineering or maintenance documents.
- WJE (2) Make sure the door goes into the Auto Unlock mode. Refer to Paragraph 3.D. for indications.
- WJE (3) Turn the cockpit control function switch momentarily to the "DENY" (clockwise) position within fifteen seconds after Auto Unlock mode begins. Start the timer.
- WJE (4) Make sure the cockpit control "AUTO UNLOCK" goes off.
- WJE (5) Make sure the red (Locked) LED on the keypad lights and the amber LED goes out.
- WJE (6) Make sure the door remains in the locked position.
- WJE (7) At any time while in "DENY" mode, enter the access code and make sure keypad does not respond.
- WJE (8) After Td = 30 minutes, the "DENY" mode ends. Make sure red (Locked) LED goes off and the door remains locked.

### F. Door Unlock Test

- WJE (1) Make sure the door solenoid is in the locked (pin down) position and no keypad LEDs light.
- WJE NOTE: This test does not require the Auto Unlock mode. The crew can unlock the door any time by turning the cockpit control function switch to the "UNLOCK" position.
- WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- WJE (2) From the default "AUTO" position, push in, turn counterclockwise, and hold the cockpit control  
WJE switch to the "UNLOCK" position.
- WJE (3) Make sure the green (Unlock) LED on the keypad lights.
- WJE (4) Make sure the red "LOCK FAIL" on the cockpit control panel lights and the aural warning  
WJE sounds.
- WJE (5) Make sure the door solenoid moves to the unlocked (pin up) position.
- WJE (6) Release the cockpit control switch. The switch returns to the center position.
- WJE (7) Make sure the door solenoid moves to the locked (pin down) position.
- WJE (8) Make sure the red "LOCK FAIL" on the cockpit control goes off and the aural warning stops.
- WJE (9) Make sure no keypad LEDs light.
- WJE G. Door Unlock Test During Auto Unlock
- WJE (1) Enter current valid code followed by #. At each keystroke, an audible sound is heard and the  
WJE amber LED lights.
- WJE NOTE: Current valid code information is available only by contacting the Director of  
WJE Maintenance or Chief Inspector and is not contained in any engineering or  
WJE maintenance documents.
- WJE NOTE: This test verifies the operation of the "UNLOCK" function while "Auto Unlock" is in  
WJE progress.
- WJE (2) Make sure the door goes into the Auto Unlock mode. Refer to Paragraph 3.D. for indications.
- WJE (3) Push in, turn counterclockwise, and hold the cockpit control switch to the "UNLOCK" position at  
WJE any time during the Auto Unlock sequence.
- WJE (4) Make sure the green (Unlock) LED on the keypad lights and the amber LED goes off.
- WJE (5) Make sure the red "LOCK FAIL" on the cockpit control panel lights and the aural warning  
WJE sounds.
- WJE (6) Make sure the door solenoid moves to the unlocked (pin up) position.
- WJE (7) Release the cockpit control switch. The switch returns to the center position.
- WJE (8) Make sure the door solenoid moves to the locked (pin down) position.
- WJE (9) Make sure the red "LOCK FAIL" on the cockpit control goes off and the aural warning stops.
- WJE (10) Make sure no keypad LEDs light.
- WJE H. Door Unlock Test During Deny
- WJE (1) Make sure the door solenoid moves to the locked (pin down) position.
- WJE NOTE: The door does not have to be in the closed position for the lock solenoid to operate.
- WJE (2) Turn cockpit control switch to the DENY position.
- WJE (3) Make sure the red LED lights on the keypad.
- WJE (4) From the default "AUTO" position, push in, turn counterclockwise, and hold the cockpit control  
WJE switch to the "UNLOCK" position.
- WJE (5) Make sure the green (Unlock) LED on the keypad lights and the red (Locked) LED goes out.
- WJE (6) Make sure red "LOCK FAIL" lights on the cockpit control panel and the aural warning sounds.
- WJE (7) Make sure the door solenoid moves to the unlocked (pin up) position.
- WJE (8) Release the cockpit control switch. The switch returns to the center position.
- WJE (9) Make sure the door solenoid moves to the locked (pin down) position.



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

- WJE** (10) Make sure the red "LOCK FAIL" goes out on the cockpit control panel and aural warning stops.
- WJE** (11) Make sure no LEDs on the keypad light.
- WJE** (12) Remove electrical power. (SUBJECT 24-20-00, Page 1)

EFFECTIVITY  
WJE 412, 414

TP-80MM-WJE

**52-52-07**

Page 505  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### ENTRANCE STAIRS - DESCRIPTION AND OPERATION

#### 1. General

- A. The aircraft is equipped with a forward stairway and an aft stairway. The stairways provide a means for the passengers and crew to enter or leave the aircraft without requiring the use of airport equipment.

#### 2. Entrance Stairs

##### A. Description

- (1) Passenger Forward Entrance Door Stairway - The passenger forward entrance door stairway is installed in a well below the passenger forward entrance door and is electrically operated. Manual operation from outside the aircraft is possible when electrical power is not available. Internal controls for the stairway are located on the forward attendant's control panel. External controls for the stairway door are located adjacent to the stairwell door. For a complete description and operation of passenger forward entrance door stairway, refer to PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION, PAGEBLOCK 52-61-00/001 Config 1.
- (2) Forward Stairwell Door - The forward stairwell door covers the stairwell opening in the fuselage when the stairway is retracted. Internal controls for the stairwell door are located on the forward attendant's control panel. External controls for the stairwell door are located adjacent to the stairwell door. For a complete description and operation of forward stairwell door, refer to FORWARD STAIRWELL DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-62-00/001.
- (3) Passenger Aft Entrance Door Stairway - The passenger aft entrance door stairway is installed in the aft accessory compartment and is hydraulically operated. Manual operation from outside the aircraft is possible when hydraulic pres-sure is not available. Internal controls for the stairway are located on the aft attendants stairway control panel. External controls for the stairway are located adjacent to the stairway door. For a complete description and operation of passenger aft entrance door stairway, refer to PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION, PAGEBLOCK 52-63-00/001.

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-60-00**

Config 1

Page 1

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### ENTRANCE STAIRS - DESCRIPTION AND OPERATION

#### 1. General

- A. The aircraft is equipped with a forward stairway and an aft stairway. The stairways provide a means for the passengers and crew to enter or leave the aircraft without requiring the use of airport equipment.
- B. The aircraft is equipped with an aft stairway. The stairway provide a means for the passengers and crew to enter or leave the aircraft without requiring the use of airport equipment.

#### 2. Entrance Stairs

##### A. Description

- (1) Passenger Forward Entrance Door Stairway - The passenger forward entrance door stairway is installed in a well below the passenger forward entrance door and is electrically operated. Manual operation from outside the aircraft is possible when electrical power is not available. Internal controls for the stairway are located on the forward attendant's control panel. External controls for the stairway door are located adjacent to the stairwell door. For a complete description and operation of passenger forward entrance door stairway, refer to PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTIO, PAGEBLOCK 52-61-00/001 Config 2.
- (2) Forward Stairwell Door - The forward stairwell door covers the stairwell opening in the fuselage when the stairway is retracted. Internal controls for the stairwell door are located on the forward attendant's control panel. External controls for the stairwell door are located adjacent to the stairwell door. For a complete description and operation of forward stairwell door, refer to FORWARD STAIRWELL DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-62-00/001.
- (3) Passenger Aft Entrance Door Stairway - The passenger aft entrance door stairway is installed in the aft accessory compartment and is hydraulically operated. Manual operation from outside the aircraft is possible when hydraulic pres-sure is not available. Internal controls for the stairway are located on the aft attendants stairway control panel. External controls for the stairway are located adjacent to the stairway door. For a complete description and operation of passenger aft entrance door stairway, refer to PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION, PAGEBLOCK 52-63-00/001.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-60-00**

Config 2  
Page 1

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION

#### 1. General

- A. The passenger forward entrance door stairway is electromechanically operated. When extended, the stairway provides a means for entering and leaving the aircraft through the passenger forward entrance door. The stairway is normally operated by dc power supplied by the APU or an external source. If normal power is not available, the stairway can be operated by dc power supplied by the aircraft batteries. If electrical power is not available, the stairway can be operated manually from outside the aircraft. The stairway is installed in the upper aft section of the electrical/electronics compartment. A door covers the stairwell opening in the fuselage when the stair is retracted. A mechanical interlock, which is part of the forward stairwell door latching mechanism, prevents opening the forward stairwell door when the passenger door is locked, and prevents locking the passenger door when the stairwell door is unlatched. For a complete description and operation of the forward stairwell door, refer to FORWARD STAIRWELL DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-62-00/001.

#### 2. Passenger Forward Entrance Door Stairway

##### A. Description (Figure 1)

- (1) The major components of the stairway are the carriage, stair, handrails, and shroud. The carriage consists of an actuator, side plates, shafts, gears, chains, sprockets, cams, and cam followers. The stair consists of beams, steps, fittings, cam followers, and ground rollers. The handrails consist of an actuator, posts, safety cables, and tubular sections hinged together to fold as the stair is retracted. The shroud is a metal enclosure for the stair and carriage and has a fiberglass bottom designed to prevent moisture or debris entering the electrical/electronics compartment when the stair is retracted. The shroud is designed to collapse around the carriage and stairs if depressurization should occur by opening the stairwell door while the fuselage is pressurized. Moisture collected in the shroud is drained into a sump tank for overboard drain-age. Tracks in the forward and aft sides of the shroud support the carriage and provides a means of installing the stairway in the aircraft. Springs, mounted in the closed end of the shroud, provide tension on the carriage to prevent movement of the stair when the stair is retracted and to open the airstair door slightly when it is unlatched.
- (2) A detent stop with a mechanical lock is provided for securing the carriage and stair in the extended position when electrical power is to be removed from the stairway circuits. The locking device is mounted on the forward outboard corner of the carriage.
- (3) Lights are provided for the illumination of each step and of the ground at the lower end of the stair when the stair is extended. The lights will not operate when normal power is not available and battery power is used to operate the stairway. The lights are controlled by both stairwell door latch switches during normal operation of the stairway. A manual switch is located adjacent to the electrical/ electronics compartment circuit breaker panel for operation of the stairway lights to inspect the stairwell door latch mechanism when the stairwell door is closed.

##### B. Component Description

- (1) Stairway Actuator - The stairway actuator provides torque to the stair and carriage drive train to extend/retract the stair. The actuator is installed on the inner end of the carriage and consists of two permanent dc motors, magnetic motor brakes, thermal switches, a gear box, and a torque sensing mechanism. (Figure 2)
  - (a) Each of the stairway actuator motors is equipped with magnetic motor brakes that engage when power is removed from the motor and disengage when power is applied to the motor.
  - (b) The thermal switches protect the actuator motors from excessively high temperatures and will automatically reset upon reduction of temperature.

EFFECTIVITY  
WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-00**

Config 1

Page 1

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (c) The torque sensing mechanism removes power from the motors when the torque, applied to the stair and carriage drive train by the stairway actuator, exceeds 830 lb-in. (93.8 N·m). The torque increases when the carriage contacts the extend or retract stops in the shroud. When power is removed from the motors, the magnetic motor brakes engage to secure the stair and carriage in position.
  - (d) The torque sensing mechanism also acts as a clutch, permitting the cable drum to rotate freely during manual operation of the stair.
  - (e) The torque sensing mechanism is comprised of a solenoid, actuating arm, cable crossbar, switch actuators, switches, cables, and the cable drum/ring gear of the gear train.
  - (f) When power is applied to the system, the solenoid pulls in, causing the actuating arm to raise, simultaneously closing both motor shutoff switches and pulling both ends of a cable that is wrapped around the cable drum/ring gear, preventing the drum from turning. When either motor is actuated to extend or retract the stair, the gear train passes through the ring gear by rotating a set of planetary gears. When the carriage reaches an extremity, the gears can no longer rotate, and causes the planetary gears to exert a force on the ring gear, causing one end of the cable to pull slightly. The cable movement is just enough to actuate the motor shutoff switch, causing the motors to stop. The motors cannot be operated in this direction again, until they have been operated in the opposite direction. At any intermediate position of the stair, the motors may be switched to the reverse direction.
  - (g) When power is removed from the system, the solenoid actuating arm is dropped, permitting the cable crossbar to drop, simultaneously opening both motor shutoff switches, causing the magnetic brakes to hold the motors from turning. This locks the gear train up to the ring gear. During manual operation of the stair, the cables are loose, permitting the gear train from the carriage to the planetary gears to rotate the ring gear. This permits the stair to be manually extended and retracted.
- (2) Handrail Actuators - The handrail actuator is installed as the entire upper rail of each handrail. Each actuator consists of a link, a fitting, an inner and outer tubular handrail, and a housing containing a release lever and extend/retract limit switches. The fitting connects the outboard end of the actuator to the outboard handrail post and provides an adjustment for the actuator when the handrails are folded. The link is installed on the exposed end of the inner handrail and provides an attachment for the spring-loaded safety cable that protrudes from the lower handrail. (Figure 3)
- (a) The inner handrail can be extended into the passenger forward entrance doorway to provide a continuous handrail from the doorway to the lower end of the stair when the stair is extended. An adjustment shaft is located inside the outer handrail at the outboard end of the actuator for adjusting the travel of the inner handrail. The cap must be removed from the outboard end of the outer handrail to gain access to the adjustment shaft.
  - (b) The inner handrail actuates the handrail extend/retract limit switches. The handrail retract limit switch opens the retract circuit to the stairway actuator power control relay to prevent the stair being retracted with either or both of the inner handrails extended and closes the circuit when both inner handrails are fully retracted. The handrail extend limit switches close the circuit to the stair down light on the forward attendants control panel, indicating that the stair is in a safe loading condition, when both inner handrails are fully extended. The stair down light circuit is opened by the corresponding handrail extend limit switch when either inner handrail is retracted.

C. Control (Figure 1) (Figure 2) (Figure 3) (Figure 4) (Figure 5)

### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-00

Config 1

Page 2

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (1) Internal and external controls are provided for operating the forward entrance stairway. A stair extend/retract switch is located on the forward attendants control panel. Adjacent to the panel is a handle for latching/unlatching the stairwell door. Stair up/down switch buttons are mounted in the fuselage skin forward and below the stairwell door. Adjacent to the switch buttons is a handle for latching/unlatching the stairwell door. Operating the stairway from the external controls is the same as with the internal controls when using normal power sources. A power switch is mounted in the external stairwell door control handle well and is accessible only when the handle is in the unlatched position. The power switch has normal, off, and battery positions to provide normal, battery, or manual stairway operation. The switch must be held in the battery position (momentary on) while the stairway is being operated by power from the batteries and should not be released until the stair is fully extended or fully retracted to prevent the stair falling from an intermediate position. The switch must be in the off position when manually operating the stairway and normal power is available.
- (2) The stairwell door latch mechanism actuates the No. 1 and No. 2 latch switches and a target the door actuates the stairwell door proximity switch. The No. 1 latch switch controls circuits to the stair step lights and to the stairwell door warning indications located on the annunciator panel and the forward attendant's panel. The No. 2 latch switch controls circuits to the stairway lights, door warning indications, and the stairway actuator solenoid. The stairwell door proximity switch controls circuits to the door warning indications and stairway actuator solenoid. When the stairwell door is unlatched, the stair step lights and door warning indications come on, and the stairway actuator solenoid is energized. If the door should open during flight, the door warning lights come on, the solenoid is energized to prevent the stairway extending. The shroud will collapse around the stair and carriage, further preventing inadvertent stair extension in flight.

D. Operation (Normal) (Figure 1) (Figure 2) (Figure 3) (Figure 4) (Figure 5)

**WARNING:** POWER SWITCH MUST BE HELD IN BATTERY POSITION UNTIL STAIR IS FULLY EXTENDED OR FULLY RETRACTED, TO PREVENT STAIR FALLING FROM AN INTERMEDIATE POSITION WHEN STAIRWAY IS OPERATED BY BATTERY POWER.

- (1) To operate the forward entrance stairway electrically, the dc transfer bus must be energized for normal electrical operation, or the battery direct bus for battery operation. The 115-volt, phase C ground service bus must be energized for the stair step lights. (ELECTRICAL POWER, CHAPTER 24)

**NOTE:** The stair step lights are inoperative if battery power only is available.

(a) Normal electrical operation:

The following circuit breakers must be closed to operate the stairway with normal dc power:

**LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-00**

Config 1

Page 3

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

(b) Battery operation:

The following circuit breakers must be closed to operate the stairway with the battery:

**OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

- (2) To operate the stairway, the passenger door is unlocked to release the stairwell door latch mechanism interlock. With the passenger door unlocked, the stairwell door control handle is rotated upward until the handle is locked in the unlatched position. As the stairwell door is unlatched and the door moved outward, power is connected to the stairway control circuits and the solenoid in the stairway actuator. The stairway lights come on. The stairwell door warning indications, on the annunciator panel and the attendant's forward control panel, come on.
- (3) To extend the stair, the stairway control switch on the attendant's panel is placed in the extend position (or the down pushbutton on the outside of the aircraft is actuated). When either switch is actuated, power is supplied to the actuator motors in the stairway actuator and gears attached to the actuator drive shafts are rotated. The gears rotate on the rack gears in the shroud, moving the carriage outward. Cam followers, on the carriage, guide the carriage along the shroud tracks. Chain sprockets, attached to the drive shafts, drive the stairway chains to move the stair outward. The stairwell door rotates downward as the stair moves outward. As the carriage and stair move outward, cam followers on the stair beams and inboard handrail posts are guided by cams on the carriage side plates. When the carriage and stair near the end of their travel, the outboard end of the stair is rotated downward, and the handrails are rotated upward. When the stair reaches the full outward extent of travel, the ground rollers, at the outboard end of the stair, contact the ground and the cams on the carriage have rotated the handrails to the vertical position. When the stairway is extended and the handrails erected, the torque sensing cable mechanism actuates the torque limit switches in the stairway actuator, deenergizing the motors. The stair and carriage are held securely in a safe loading condition by the solenoid, the torque sensing mechanism, and the motor brakes in the stairway actuator. The stairway will remain secure as long as dc power is supplied to the stairway circuit and current is not applied to the actuator motors (control switch placed in the retract position). If the power circuit to the stairway is opened, the detent stop must be manually locked to provide a safe loading condition.

EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-00**

Config 1

Page 4

Feb 01/2016



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (4) The passenger forward entrance door is then opened and latched. The spring-loaded release levers, in the actuator housings, are actuated to unlock the inner handrails. Both inner handrails are fully extended and the levers are released to lock the handrails in the extended position. The limit switches, in the handrail actuator housings, have opened the retract circuit to the stairway actuator motors and have closed the circuit to the stair down light on the forward attendant's control panel. The stairway is in a safe loading condition when the stair down light comes on.

**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

**WARNING:** WHEN CLOSING EXTERNAL STAIR DOOR CONTROL HANDLE, DO NOT GRASP HANDLE. USE PALM OF HAND ONLY.

- (5) To retract the stair, the inner handrails are retracted by extending handrails slightly, actuating the release levers, and restraining the handrails to prevent rapid retraction. The levers are released, locking the inner handrails, when the handrails are fully retracted. The retract circuit to the stairway actuator motors is energized, and the stair down light goes off. If the detent stop was locked while the stair was extended, it must be unlocked before the stair can be retracted. The stairway control switch is placed in the retract position (or the external stair up button is actuated). The stairway actuator motors are energized to operate in reverse so as to drive the stair and carriage into the shroud. As the stair and carriage are driven into the shroud, the outer end of the stair raises and the hand-rails fold. A hook, located on the outer stair step, passes over one stairwell door roller and engages a second roller to pull the door into position for latching. The carriage contacts the retract stops in the shroud, the torque sensing mechanism removes power from the actuator motors, and the magnetic motor brakes engage to hold the stair and carriage in the retracted position. The stairwell door control handle (internal or external) is rotated to the latched position. As the door is closed and latched, the stairway circuits are deenergized, and the stairwell door warning indications go off. The stair is now held firmly by the stairwell door rollers and the stair hook, preventing movement of the stair and carriage during flight.

### E. Operation (Manual)

**WARNING:** WHEN UNLATCHING STAIRWELL DOOR WITH STAIRWAY ELECTRICAL CIRCUIT DEENERGIZED, REMAIN CLEAR OF STAIR-WELL DOOR AREA. STAIRWAY CAN CAUSE STAIRWELL DOOR TO SPRING OUTWARD WITH ENOUGH FORCE TO CAUSE INJURY TO PERSONNEL.

- (1) The passenger forward entrance door must be unlocked, releasing the stairwell door mechanical interlock, to extend the forward entrance stairway. The external stairwell door control handle is rotated until the handle is locked in the unlatched position. The power switch, in the control handle well, should be placed in the off position (with or without electrical power available to stairway circuits). The stairwell door is rotated outward and downward and the stair is pulled outward and lowered until ground rollers contact the ground. The handrails are pushed upward and toward the aircraft, while standing on the lower step of the stair, to force the carriage cam follower past the spring-loaded roller of the detent stop. The lock on the detent stop is rotated outward and upward to lock the stair and carriage in the extended position. The passenger forward entrance door is opened and latched in the open position. The release levers, in the handrail actuator housings, are actuated, the inner handrails are extended, and the levers are released to lock the inner handrails in the extended position. The stairway is now in a safe loading condition.

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

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## 52-61-00

Config 1

Page 5

Feb 01/2016



## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

**WARNING:** WHEN CLOSING EXTERNAL STAIR DOOR CONTROL HANDLE, DO NOT GRASP HANDLE. USE PALM OF HAND ONLY.

- (2) To retract the stair, the inner handrails are retracted and locked by the spring-loaded release levers. The detent stop is unlocked, a foot is placed on the lower step of the stair, and a sudden pull is exerted downward on the hand-rails to force the carriage cam follower past the roller on the detent stop. The outer end of the stair is lifted, and the stair is pushed into the shroud. The stairwell door is pushed to the closed position, and the door control handle is rotated to the latched position.

### F. To Operate System (Manual)

- (1) To manually extend passenger forward stairway:

**WARNING:** WHEN UNLATCHING STAIRWELL DOOR WITH STAIRWAY ELECTRICAL CIRCUIT DEENERGIZED, REMAIN CLEAR OF STAIRWELL DOOR AREA. STAIRWAY CAN CAUSE STAIRWELL DOOR TO SPRING OUTWARD WITH ENOUGH FORCE TO CAUSE INJURY TO PERSONNEL.

- (a) Lift external handle to unlatch stairwell door.
  - (b) Place power switch to OFF (located under external handle).
  - (c) Pull out on stairwell door until top step is accessible.
  - (d) Pull stairway out horizontally until fully extended, then pull down until rollers touch ground.
  - (e) Step on bottom step and push handrail toward doorway until stairway is fully extended.
  - (f) Place detent latch in locked position.
  - (g) Latch passenger forward entrance door open.
  - (h) Push handrail manual release lever (one on each handrail) and extend handrail into doorway until detent is engaged.
- (2) To manually retract passenger forward stairway:

**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (a) Place external power switch to OFF.
- (b) Push handrail manual release lever, pull handrail up approximately 1/4 inch (6.35 mm) to disengage detent, then manually retract handrails. Hold handrail while retracting to prevent a sudden retraction.
- (c) Close passenger forward entrance door.
- (d) Place detent latch in unlocked position.
- (e) Stand on bottom step and pull (jerk) handrail down to disengage carriage roller from detent.
- (f) Lift up on bottom step and push up and in until stairwell door starts closing.

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# 52-61-00

Config 1

Page 6

Feb 01/2016

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

**WARNING:** WHEN CLOSING EXTERNAL STAIR DOOR CONTROL HANDLE, DO NOT GRASP HANDLE. USE PALM OF HAND ONLY.

- (g) Push in stairwell door until within 1/2 inch (12.7 mm) of faired. Push in external handle until stairwell door is latched, and both door and handle are flush to fuselage.
- (h) Visually check from electrical/electronic compartment that stairway door is closed and latched properly.

**NOTE:** Passenger entrance door cannot be locked until stairway door is closed and latched.

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871-881, 883, 884, 886, 887, 891-893

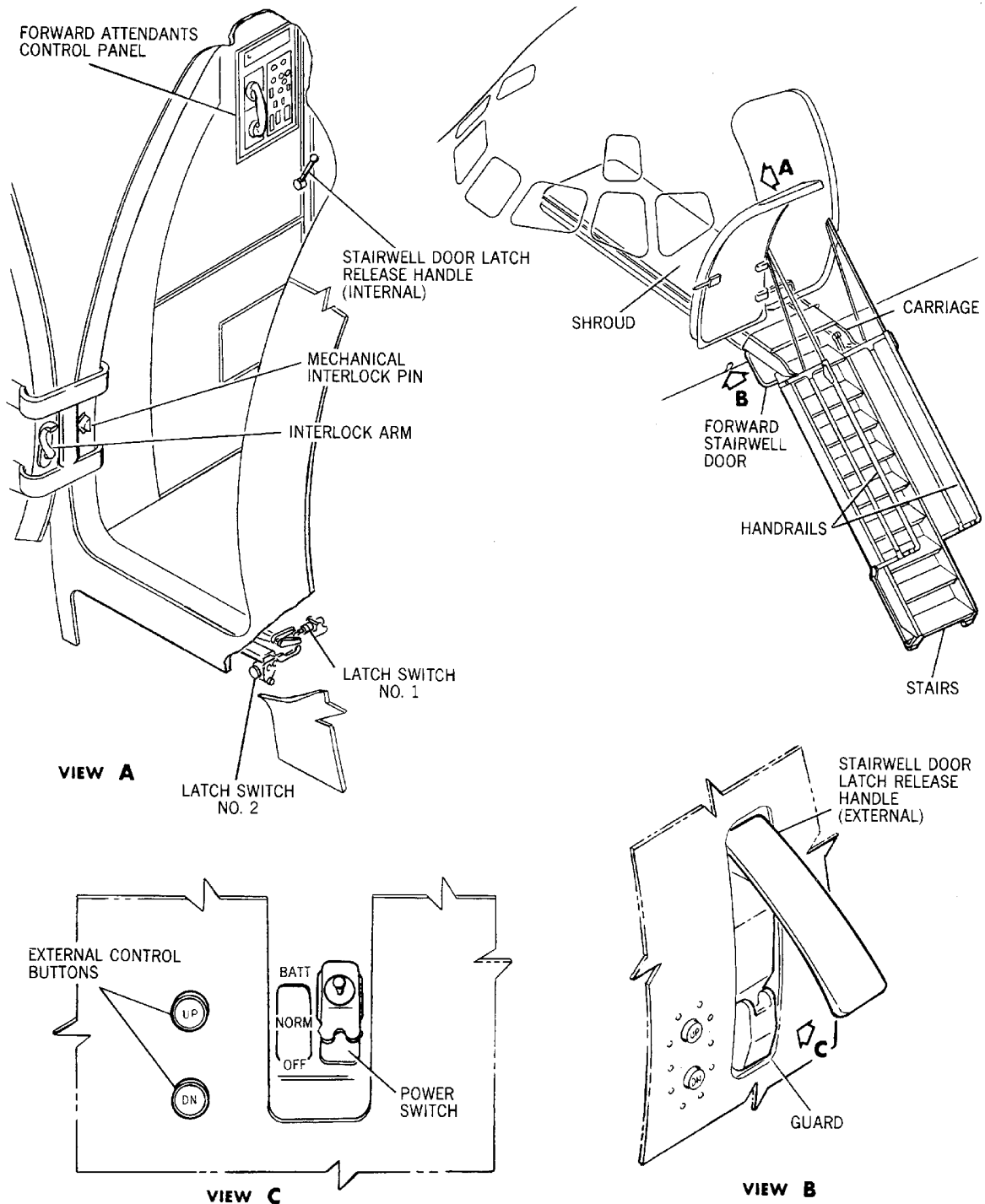
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**52-61-00**

Config 1  
Page 7

Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-22B

**Passenger Forward Entrance Door Stairway  
Figure 1/52-61-00-990-801 (Sheet 1 of 3)**

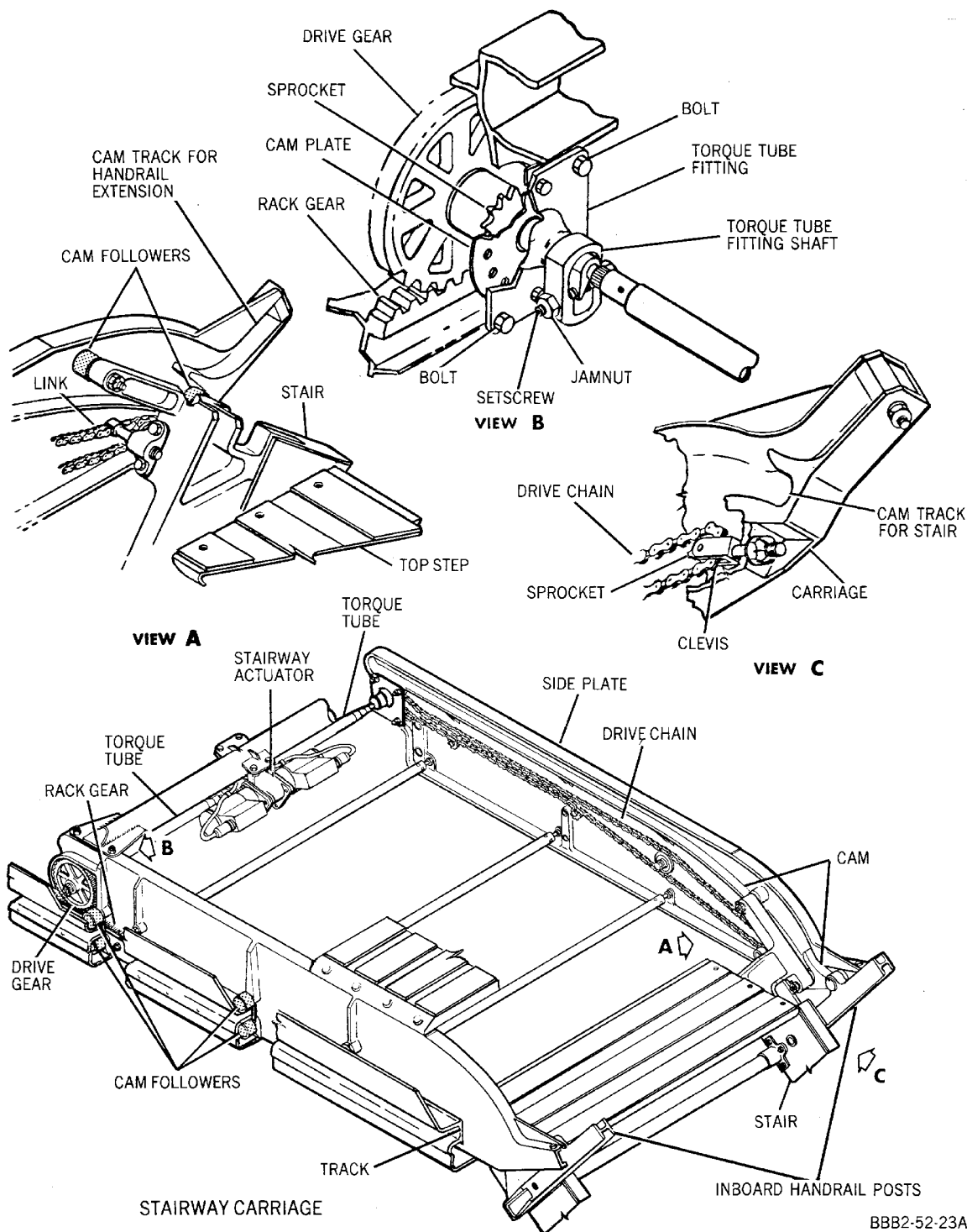
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WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

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**52-61-00**

Config 1  
Page 8  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Stairway  
Figure 1/52-61-00-990-801 (Sheet 2 of 3)**

BBB2-52-23A

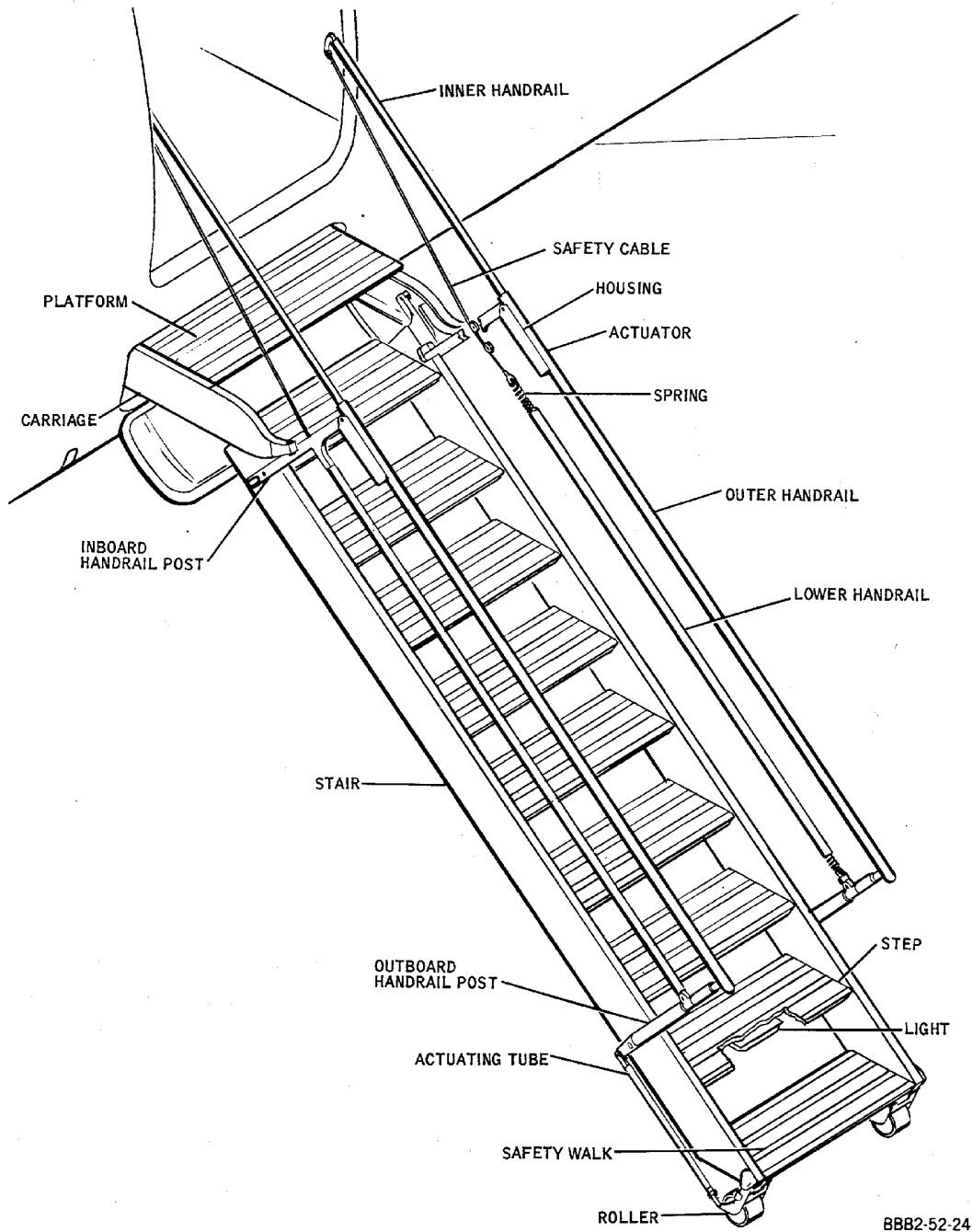
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871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-00**

Config 1  
Page 9  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Passenger Forward Entrance Door Stairway  
Figure 1/52-61-00-990-801 (Sheet 3 of 3)

**EFFECTIVITY**

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871-881, 883, 884, 886, 887, 891-893

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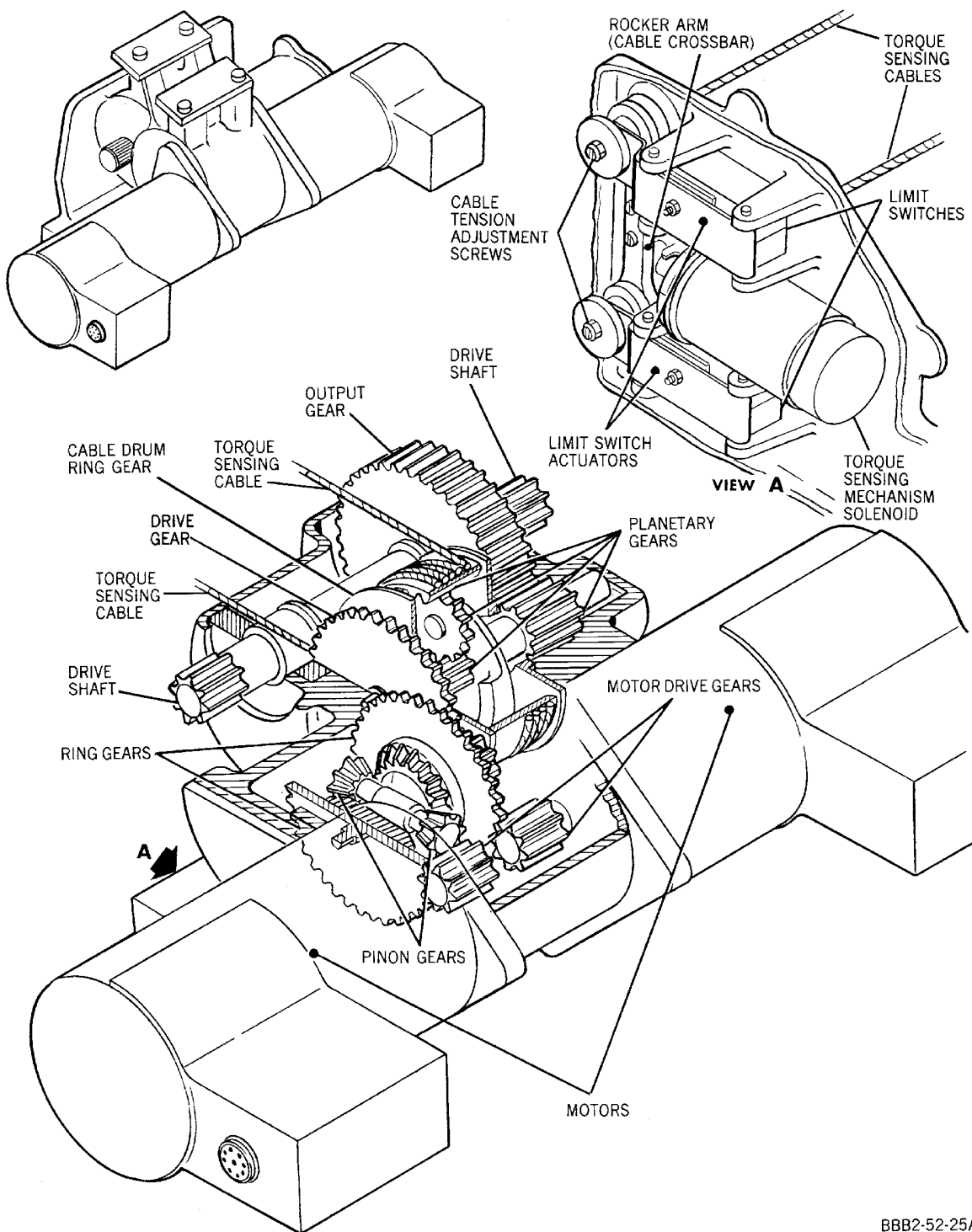
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Config 1  
Page 10  
Feb 01/2016

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**Passenger Forward Entrance Door Stairway Actuator**  
Figure 2/52-61-00-990-802

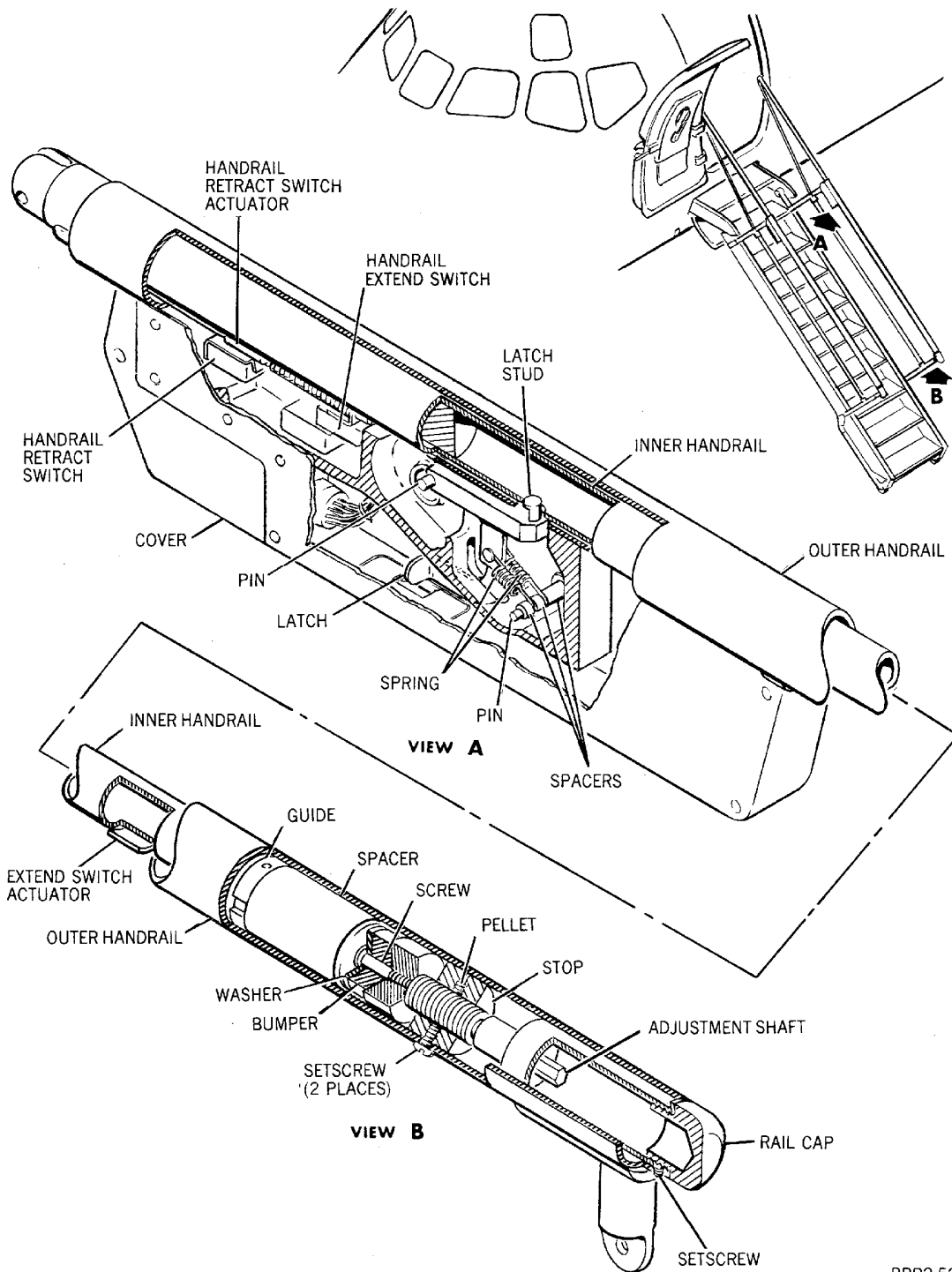
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**52-61-00**

Config 1  
Page 11  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Passenger Forward Entrance Door Stairway Handrail Actuator  
Figure 3/52-61-00-990-803**

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871-881, 883, 884, 886, 887, 891-893

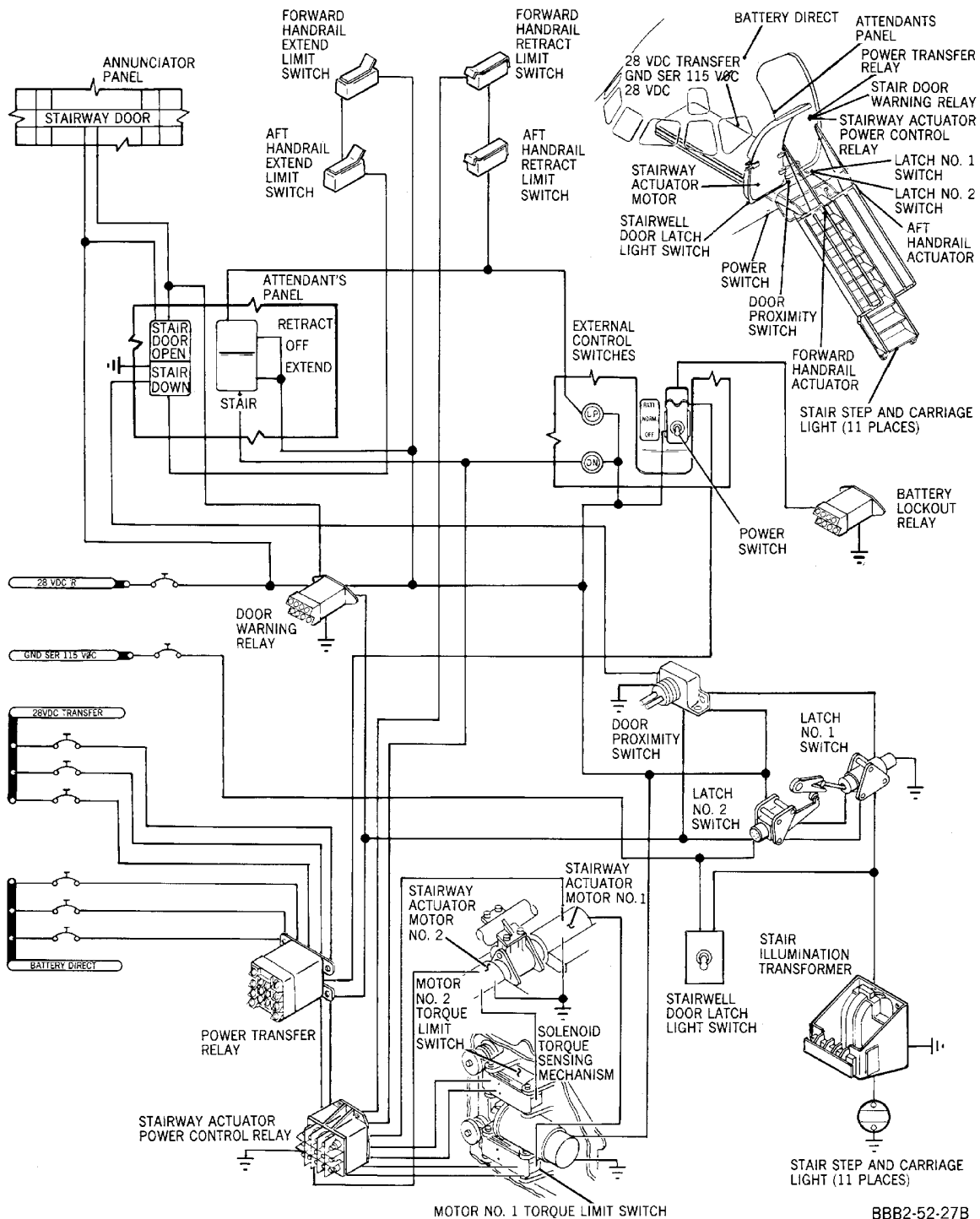
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**52-61-00**

Config 1  
Page 12  
Feb 01/2016



# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Passenger Forward Entrance Door Stairway -- Operation**  
**Figure 4/52-61-00-990-804**

**EFFECTIVITY**

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871-881, 883, 884, 886, 887, 891-893

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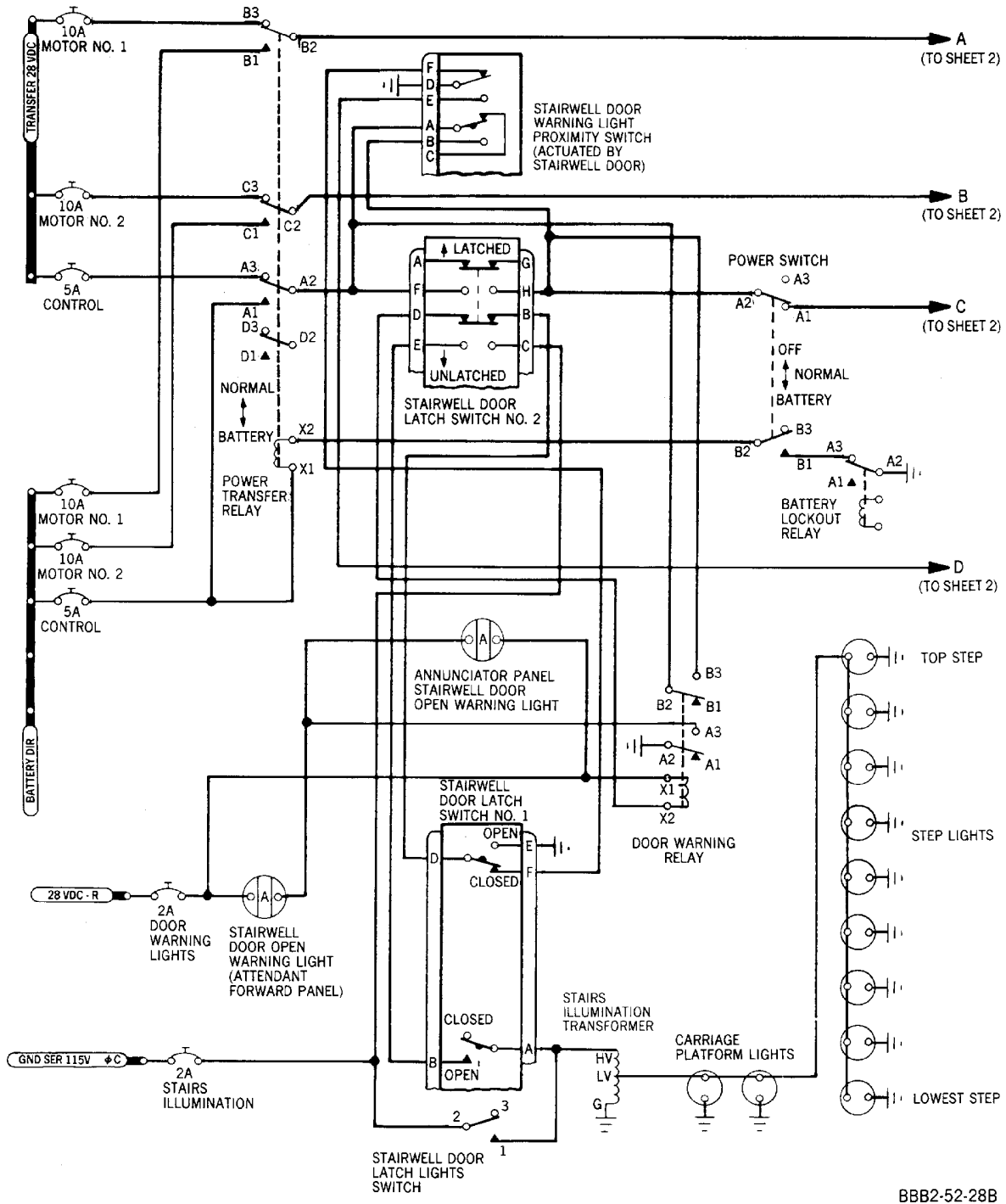
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Page 13

Feb 01/2016



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Passenger Forward Entrance Door Stairway -- Schematic  
Figure 5/52-61-00-990-805 (Sheet 1 of 2)

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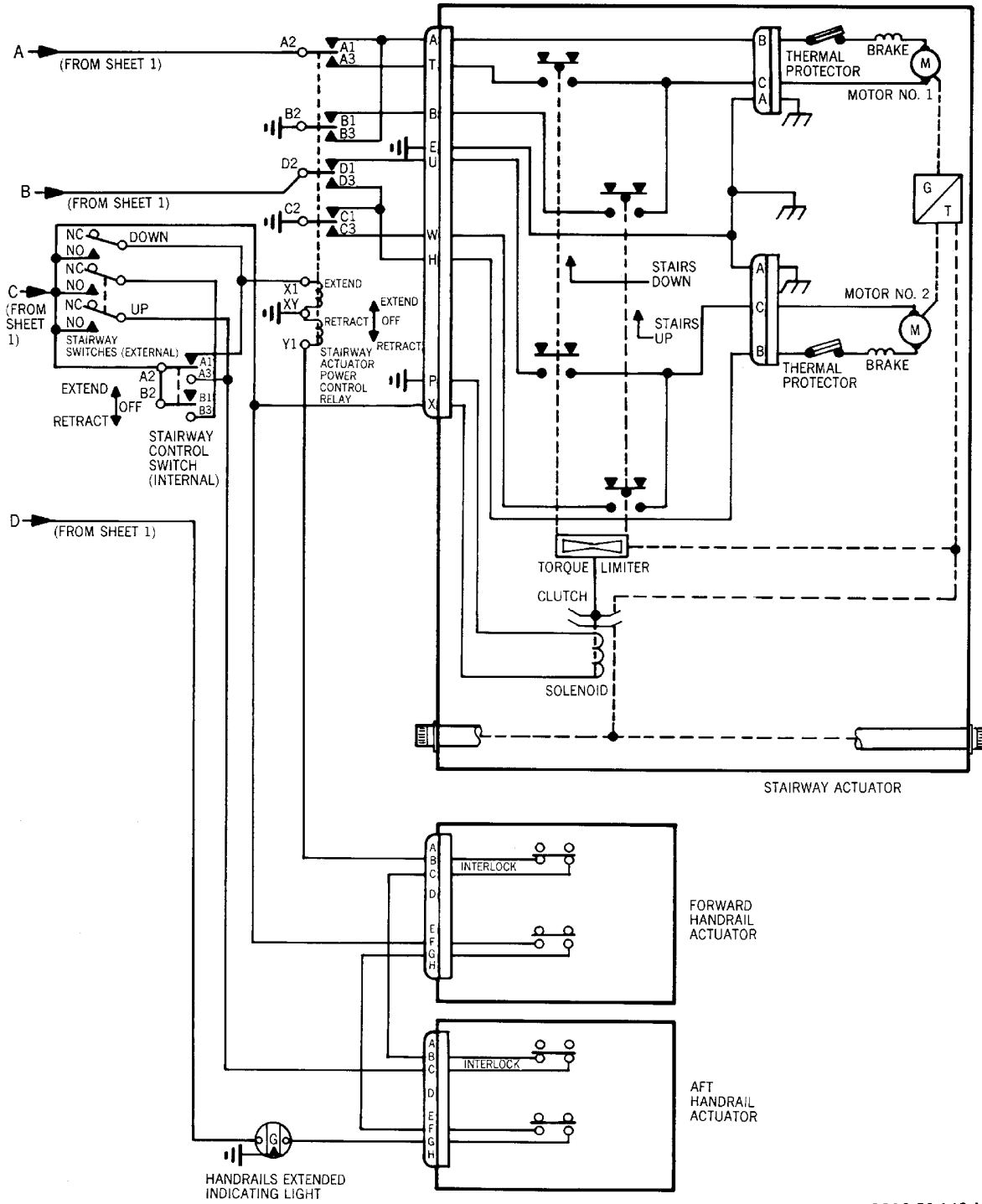
Config 1  
Page 14  
Feb 01/2016

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BB82-52-143 A

**Passenger Forward Entrance Door Stairway -- Schematic**  
**Figure 5/52-61-00-990-805 (Sheet 2 of 2)**

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TP-80MM-WJE

**52-61-00**

Config 1  
Page 15  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - DESCRIPTIO

#### 1. General

- A. The passenger forward entrance door stairway is electromechanically operated. When extended, the stairway provides a means for entering and leaving the aircraft through the passenger forward entrance door. The stairway is normally operated by dc power supplied by the APU or an external source. If normal power is not available, the stairway can be operated by dc power supplied by the aircraft batteries. If electrical power is not available, the stairway can be operated manually from outside the aircraft. The stairway is installed in the upper aft section of the electrical/electronics compartment. A door covers the stairwell opening in the fuselage when the stair is retracted. A mechanical interlock, which is part of the forward stairwell door latching mechanism, prevents opening the forward stairwell door when the passenger door is locked, and prevents locking the passenger door when the stairwell door is unlatched. For a complete description and operation of the forward stairwell door, refer to FORWARD STAIRWELL DOOR - DESCRIPTION AND OPERATION, PAGEBLOCK 52-62-00/001.

#### 2. Passenger Forward Entrance Door Stairway

##### A. Description (Figure 1)

- (1) The major components of the stairway are the carriage, stair, handrails, and shroud. The carriage consists of an actuator, side plates, shafts, gears, chains, sprockets, cams, and cam followers. The stair consists of beams, steps, fittings, cam followers, and ground rollers. The handrails consist of an actuator, posts, safety cables, and tubular sections hinged together to fold as the stair is retracted. The shroud is a metal enclosure for the stair and carriage and has a fiberglass bottom designed to prevent moisture or debris entering the electrical/electronics compartment when the stair is retracted. The shroud is designed to collapse around the carriage and stairs if depressurization should occur by opening the stairwell door while the fuselage is pressurized. Moisture collected in the shroud is drained into a sump tank for overboard drain-age. Tracks in the forward and aft sides of the shroud support the carriage and provides a means of installing the stairway in the aircraft. Springs, mounted in the closed end of the shroud, provide tension on the carriage to prevent movement of the stair when the stair is retracted and to open the airstair door slightly when it is unlatched.
- (2) A detent stop with a mechanical lock is provided for securing the carriage and stair in the extended position when electrical power is to be removed from the stairway circuits. The locking device is mounted on the forward outboard corner of the carriage.
- (3) Lights are provided for the illumination of each step and of the ground at the lower end of the stair when the stair is extended. The lights will not operate when normal power is not available and battery power is used to operate the stairway. The lights are controlled by both stairwell door latch switches during normal operation of the stairway. A manual switch is located adjacent to the electrical/ electronics compartment circuit breaker panel for operation of the stairway lights to inspect the stairwell door latch mechanism when the stairwell door is closed.

##### B. Component Description

- (1) Stairway Actuator - The stairway actuator provides torque to the stair and carriage drive train to extend/retract the stair. The actuator is installed on the inner end of the carriage and consists of two permanent dc motors, magnetic motor brakes, thermal switches, a gear box, and a torque sensing mechanism. (Figure 2)
  - (a) Each of the stairway actuator motors is equipped with magnetic motor brakes that engage when power is removed from the motor and disengage when power is applied to the motor.
  - (b) The thermal switches protect the actuator motors from excessively high temperatures and will automatically reset upon reduction of temperature.

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**52-61-00**

Config 2

Page 1

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (c) The torque sensing mechanism removes power from the motors when the torque, applied to the stair and carriage drive train by the stairway actuator, exceeds 830 lb-in. (93.8 N·m). The torque increases when the carriage contacts the extend or retract stops in the shroud. When power is removed from the motors, the magnetic motor brakes engage to secure the stair and carriage in position.
  - (d) The torque sensing mechanism also acts as a clutch, permitting the cable drum to rotate freely during manual operation of the stair.
  - (e) The torque sensing mechanism is comprised of a solenoid, actuating arm, cable crossbar, switch actuators, switches, cables, and the cable drum/ring gear of the gear train.
  - (f) When power is applied to the system, the solenoid pulls in, causing the actuating arm to raise, simultaneously closing both motor shutoff switches and pulling both ends of a cable that is wrapped around the cable drum/ring gear, preventing the drum from turning. When either motor is actuated to extend or retract the stair, the gear train passes through the ring gear by rotating a set of planetary gears. When the carriage reaches an extremity, the gears can no longer rotate, and causes the planetary gears to exert a force on the ring gear, causing one end of the cable to pull slightly. The cable movement is just enough to actuate the motor shutoff switch, causing the motors to stop. The motors cannot be operated in this direction again, until they have been operated in the opposite direction. At any intermediate position of the stair, the motors may be switched to the reverse direction.
  - (g) When power is removed from the system, the solenoid actuating arm is dropped, permitting the cable crossbar to drop, simultaneously opening both motor shutoff switches, causing the magnetic brakes to hold the motors from turning. This locks the gear train up to the ring gear. During manual operation of the stair, the cables are loose, permitting the gear train from the carriage to the planetary gears to rotate the ring gear. This permits the stair to be manually extended and retracted.
- (2) Handrail Actuators - The handrail actuator is installed as the entire upper rail of each handrail. Each actuator consists of a link, a fitting, an inner and outer tubular handrail, and a housing containing a release lever and extend/retract limit switches. The fitting connects the outboard end of the actuator to the outboard handrail post and provides an adjustment for the actuator when the handrails are folded. The link is installed on the exposed end of the inner handrail and provides an attachment for the spring-loaded safety cable that protrudes from the lower handrail. (Figure 3)
- (a) The inner handrail can be extended into the passenger forward entrance doorway to provide a continuous handrail from the doorway to the lower end of the stair when the stair is extended. An adjustment shaft is located inside the outer handrail at the outboard end of the actuator for adjusting the travel of the inner handrail. The cap must be removed from the outboard end of the outer handrail to gain access to the adjustment shaft.
  - (b) The inner handrail actuates the handrail extend/retract limit switches. The handrail retract limit switch opens the retract circuit to the stairway actuator power control relay to prevent the stair being retracted with either or both of the inner handrails extended and closes the circuit when both inner handrails are fully retracted. The handrail extend limit switches close the circuit to the stair down light on the forward attendants control panel, indicating that the stair is in a safe loading condition, when both inner handrails are fully extended. The stair down light circuit is opened by the corresponding handrail extend limit switch when either inner handrail is retracted.

C. Control (Figure 1) (Figure 2) (Figure 3) (Figure 4) (Figure 5)

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TP-80MM-WJE

**52-61-00**

Config 2

Page 2

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (1) Internal and external controls are provided for operating the forward entrance stairway. A stair extend/retract switch is located on the forward attendants control panel. Adjacent to the panel is a handle for latching/unlatching the stairwell door. Stair up/down switch buttons are mounted in the fuselage skin forward and below the stairwell door. Adjacent to the switch buttons is a handle for latching/unlatching the stairwell door. Operating the stairway from the external controls is the same as with the internal controls when using normal power sources. A power switch is mounted in the external stairwell door control handle well and is accessible only when the handle is in the unlatched position. The power switch has normal, off, and battery positions to provide normal, battery, or manual stairway operation. The switch must be held in the battery position (momentary on) while the stairway is being operated by power from the batteries and should not be released until the stair is fully extended or fully retracted to prevent the stair falling from an intermediate position. The switch must be in the off position when manually operating the stairway and normal power is available.
- (2) The stairwell door latch mechanism actuates the No. 1 and No. 2 latch switches and a target the door actuates the stairwell door proximity switch. The No. 1 latch switch controls circuits to the stair step lights and to the stairwell door warning indications located on the annunciator panel and the forward attendant's panel. The No. 2 latch switch controls circuits to the stairway lights, door warning indications, and the stairway actuator solenoid. The stairwell door proximity switch controls circuits to the door warning indications and stairway actuator solenoid. When the stairwell door is unlatched, the stair step lights and door warning indications come on, and the stairway actuator solenoid is energized. If the door should open during flight, the door warning lights come on, the solenoid is energized to prevent the stairway extending. The shroud will collapse around the stair and carriage, further preventing inadvertent stair extension in flight.

D. Operation (Normal) (Figure 1) (Figure 2) (Figure 3) (Figure 4) (Figure 5)

**WARNING:** WHEN STAIRWAY IS OPERATED BY BATTERY POWER, POWER SWITCH MUST BE HELD IN BATTERY POSITION UNTIL STAIR IS FULLY EXTENDED OR FULLY RETRACTED TO PREVENT STAIR FALLING FROM AN INTERMEDIATE POSITION.

- (1) To operate the forward entrance stairway electrically, the dc transfer bus must be energized for normal electrical operation, or the battery direct bus for battery operation. The 115-volt, phase C ground service bus must be energized for the stair step lights. (ELECTRICAL POWER, CHAPTER 24)

**NOTE:** The stair step lights are inoperative if battery power only is available.

(a) Normal electrical operation:

The following circuit breakers must be closed to operate the stairway with normal dc power:

**LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

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**52-61-00**

Config 2

Page 3

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

(b) Battery operation:

The following circuit breakers must be closed to operate the stairway with the battery:

**OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (2) To operate the stairway, the passenger door is unlocked to release the stairwell door latch mechanism interlock. With the passenger door unlocked, the stairwell door control handle is rotated upward until the handle is locked in the unlatched position. As the stairwell door is unlatched and the door moved outward, power is connected to the stairway control circuits and the solenoid in the stairway actuator. The stairway lights come on. The stairwell door warning indications, on the annunciator panel and the attendant's forward control panel, come on.
- (3) To extend the stair, the stairway control switch on the attendant's panel is placed in the extend position (or the down pushbutton on the outside of the aircraft is actuated). When either switch is actuated, power is supplied to the actuator motors in the stairway actuator and gears attached to the actuator drive shafts are rotated. The gears rotate on the rack gears in the shroud, moving the carriage outward. Cam followers, on the carriage, guide the carriage along the shroud tracks. Chain sprockets, attached to the drive shafts, drive the stairway chains to move the stair outward. The stairwell door rotates downward as the stair moves outward. As the carriage and stair move outward, cam followers on the stair beams and inboard handrail posts are guided by cams on the carriage side plates. When the carriage and stair near the end of their travel, the outboard end of the stair is rotated downward, and the handrails are rotated upward. When the stair reaches the full outward extent of travel, the ground rollers, at the outboard end of the stair, contact the ground and the cams on the carriage have rotated the handrails to the vertical position. When the stairway is extended and the handrails erected, the torque sensing cable mechanism actuates the torque limit switches in the stairway actuator, deenergizing the motors. The stair and carriage are held securely in a safe loading condition by the solenoid, the torque sensing mechanism, and the motor brakes in the stairway actuator. The stairway will remain secure as long as dc power is supplied to the stairway circuit and current is not applied to the actuator motors (control switch placed in the retract position). If the power circuit to the stairway is opened, the detent stop must be manually locked to provide a safe loading condition.
- (4) The passenger forward entrance door is then opened and latched. The spring-loaded release levers, in the actuator housings, are actuated to unlock the inner handrails. Both inner handrails are fully extended and the levers are released to lock the handrails in the extended position. The limit switches, in the handrail actuator housings, have opened the retract circuit to the stairway actuator motors and have closed the circuit to the stair down light on the forward attendant's control panel. The stairway is in a safe loading condition when the stair down light comes on.

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TP-80MM-WJE

**52-61-00**

Config 2  
Page 4

Feb 01/2015



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**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

**WARNING:** WHEN CLOSING EXTERNAL STAIR DOOR CONTROL HANDLE, DO NOT GRASP HANDLE. USE PALM OF HAND ONLY.

- (5) To retract the stair, the inner handrails are retracted by extending handrails slightly, actuating the release levers, and restraining the handrails to prevent rapid retraction. The levers are released, locking the inner handrails, when the handrails are fully retracted. The retract circuit to the stairway actuator motors is energized, and the stair down light goes off. If the detent stop was locked while the stair was extended, it must be unlocked before the stair can be retracted. The stairway control switch is placed in the retract position (or the external stair up button is actuated). The stairway actuator motors are energized to operate in reverse so as to drive the stair and carriage into the shroud. As the stair and carriage are driven into the shroud, the outer end of the stair raises and the hand-rails fold. A hook, located on the outer stair step, passes over one stairwell door roller and engages a second roller to pull the door into position for latching. The carriage contacts the retract stops in the shroud, the torque sensing mechanism removes power from the actuator motors, and the magnetic motor brakes engage to hold the stair and carriage in the retracted position. The stairwell door control handle (internal or external) is rotated to the latched position. As the door is closed and latched, the stairway circuits are deenergized, and the stairwell door warning indications go off. The stair is now held firmly by the stairwell door rollers and the stair hook, preventing movement of the stair and carriage during flight.

### E. Operation (Manual)

**WARNING:** WHEN UNLATCHING STAIRWELL DOOR WITH STAIRWAY ELECTRICAL CIRCUIT DEENERGIZED, REMAIN CLEAR OF STAIRWELL DOOR AREA. STAIRWAY CAN CAUSE STAIRWELL DOOR TO SPRING OUTWARD WITH ENOUGH FORCE TO CAUSE INJURY TO PERSONNEL.

- (1) The passenger forward entrance door must be unlocked, releasing the stairwell door mechanical interlock, to extend the forward entrance stairway. The external stairwell door control handle is rotated until the handle is locked in the unlatched position. The power switch, in the control handle well, should be placed in the off position (with or without electrical power available to stairway circuits). The stairwell door is rotated outward and downward and the stair is pulled outward and lowered until ground rollers contact the ground. The handrails are pushed upward and toward the aircraft, while standing on the lower step of the stair, to force the carriage cam follower past the spring-loaded roller of the detent stop. The lock on the detent stop is rotated outward and upward to lock the stair and carriage in the extended position. The passenger forward entrance door is opened and latched in the open position. The release levers, in the handrail actuator housings, are actuated, the inner handrails are extended, and the levers are released to lock the inner handrails in the extended position. The stairway is now in a safe loading condition.

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TP-80MM-WJE

**52-61-00**

Config 2

Page 5

Feb 01/2015

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**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

**WARNING:** WHEN CLOSING EXTERNAL STAIR DOOR CONTROL HANDLE, DO NOT GRASP HANDLE. USE PALM OF HAND ONLY.

- (2) To retract the stair, the inner handrails are retracted and locked by the spring-loaded release levers. The detent stop is unlocked, a foot is placed on the lower step of the stair, and a sudden pull is exerted downward on the hand-rails to force the carriage cam follower past the roller on the detent stop. The outer end of the stair is lifted, and the stair is pushed into the shroud. The stairwell door is pushed to the closed position, and the door control handle is rotated to the latched position.

### F. To Operate System (Manual)

- (1) To manually extend passenger forward stairway:

**WARNING:** WHEN UNLATCHING STAIRWELL DOOR WITH STAIRWAY ELECTRICAL CIRCUIT DEENERGIZED, REMAIN CLEAR OF STAIRWELL DOOR AREA. STAIRWAY CAN CAUSE STAIRWELL DOOR TO SPRING OUTWARD WITH ENOUGH FORCE TO CAUSE INJURY TO PERSONNEL.

- (a) Lift external handle to unlatch stairwell door.
  - (b) Place power switch to OFF (located under external handle).
  - (c) Pull out on stairwell door until top step is accessible.
  - (d) Pull stairway out horizontally until fully extended, then pull down until rollers touch ground.
  - (e) Step on bottom step and push handrail toward doorway until stairway is fully extended.
  - (f) Place detent latch in locked position.
  - (g) Latch passenger forward entrance door open.
  - (h) Push handrail manual release lever (one on each handrail) and extend handrail into doorway until detent is engaged.
- (2) To manually retract passenger forward stairway:

**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (a) Place external power switch to OFF.
- (b) Push handrail manual release lever, pull handrail up approximately 1/4 inch (6.35 mm) to disengage detent, then manually retract handrails. Hold handrail while retracting to prevent a sudden retraction.
- (c) Close passenger forward entrance door.
- (d) Place detent latch in unlocked position.
- (e) Stand on bottom step and pull (jerk) handrail down to disengage carriage roller from detent.
- (f) Lift up on bottom step and push up and in until stairwell door starts closing.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2

Page 6

Feb 01/2015



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

**WARNING:** WHEN CLOSING EXTERNAL STAIR DOOR CONTROL HANDLE, DO NOT GRASP HANDLE. USE PALM OF HAND ONLY.

- (g) Push in stairwell door until within 1/2 inch (12.7 mm) of faired. Push in external handle until stairwell door is latched, and both door and handle are flush to fuselage.
- (h) Visually check from electrical/electronic compartment that stairway door is closed and latched properly.

**NOTE:** Passenger entrance door cannot be locked until stairway door is closed and latched.

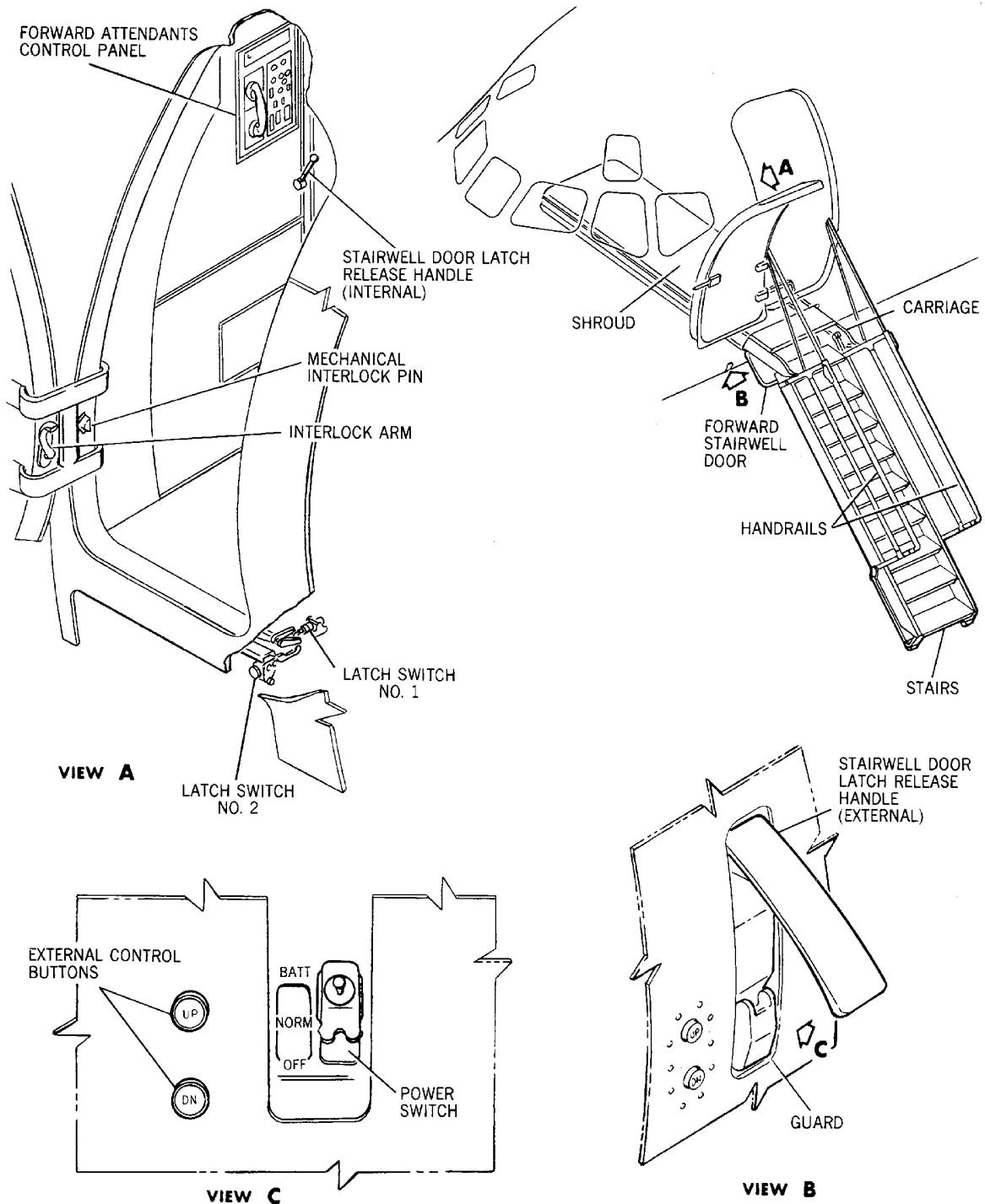
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 7  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-22B

**Passenger Forward Entrance Door Stairway  
Figure 1/52-61-00-990-810 (Sheet 1 of 3)**

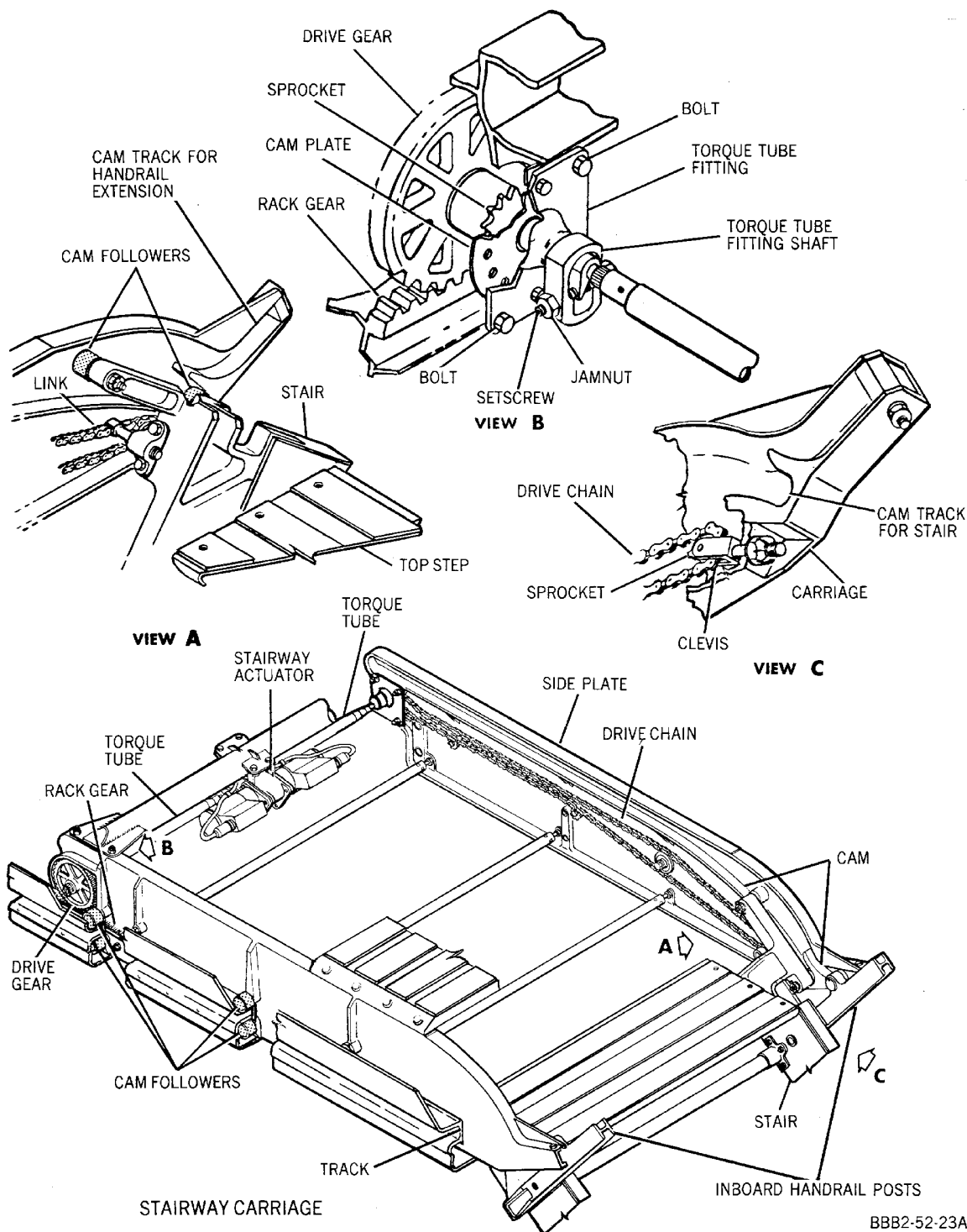
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 8  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-23A

**Passenger Forward Entrance Door Stairway  
Figure 1/52-61-00-990-810 (Sheet 2 of 3)**

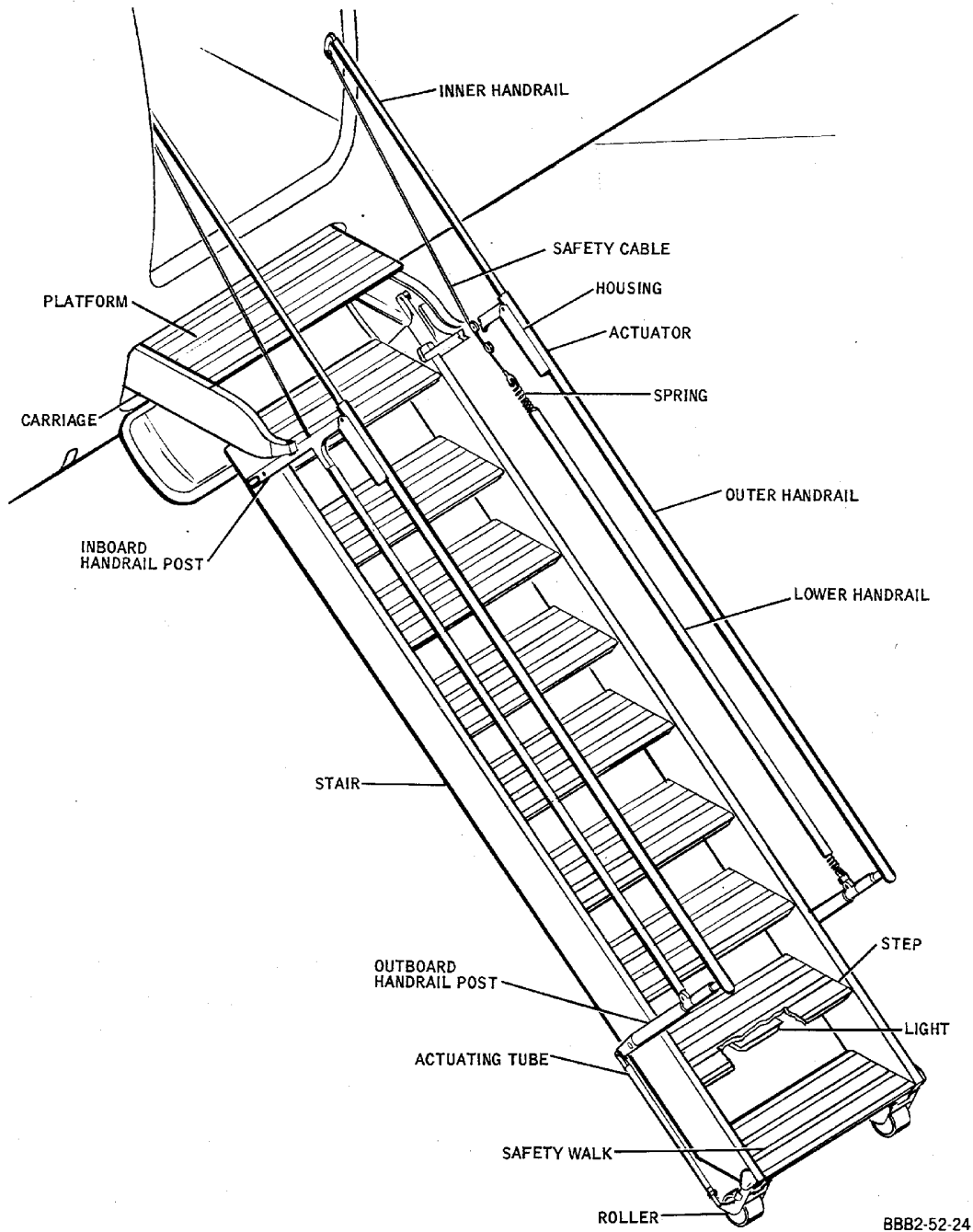
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

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**52-61-00**

Config 2  
Page 9  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Passenger Forward Entrance Door Stairway  
Figure 1/52-61-00-990-810 (Sheet 3 of 3)

EFFECTIVITY  
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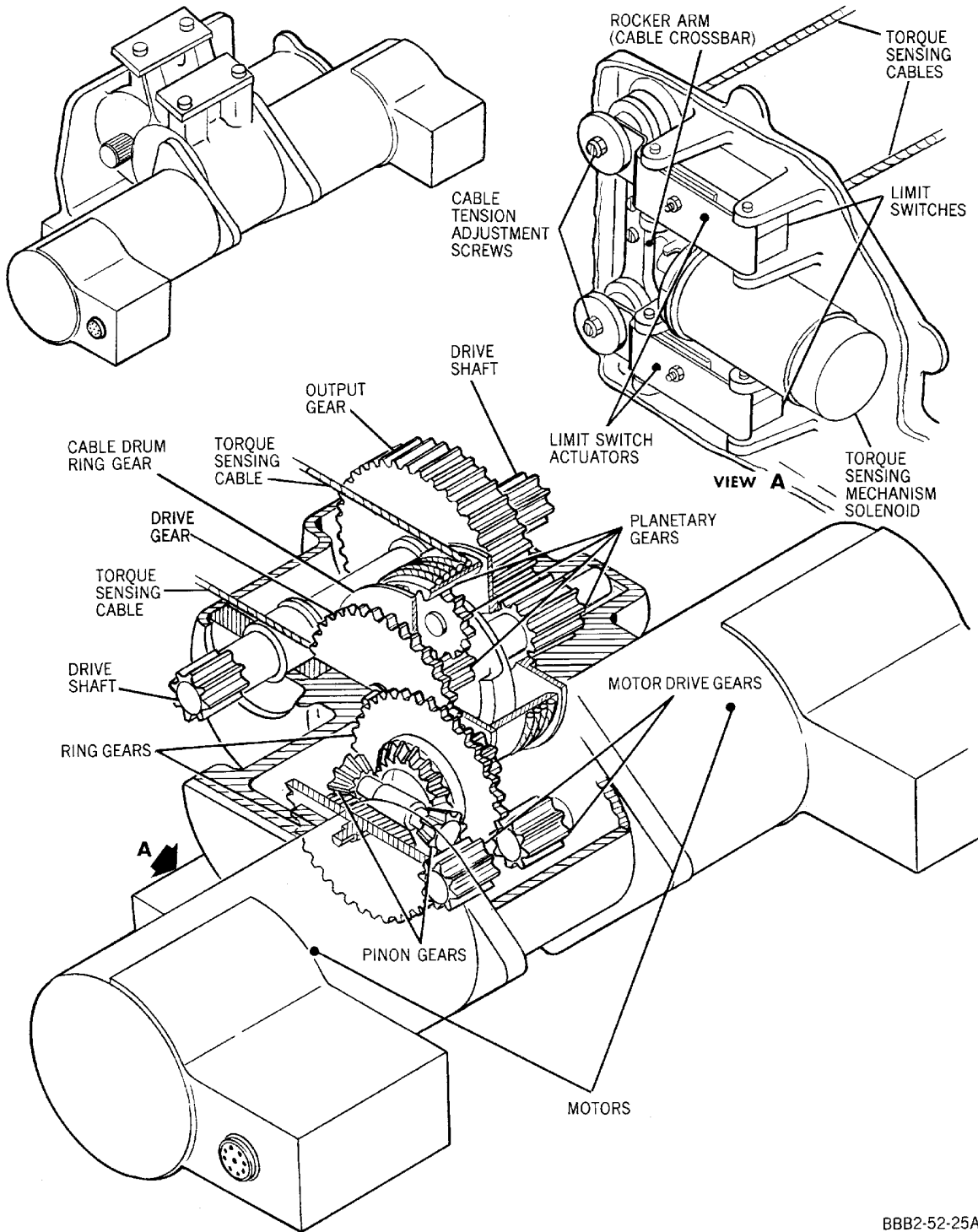
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Config 2  
Page 10  
Feb 01/2015

**MD-80  
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BBB2-52-25A

**Passenger Forward Entrance Door Stairway Actuator  
Figure 2/52-61-00-990-811**

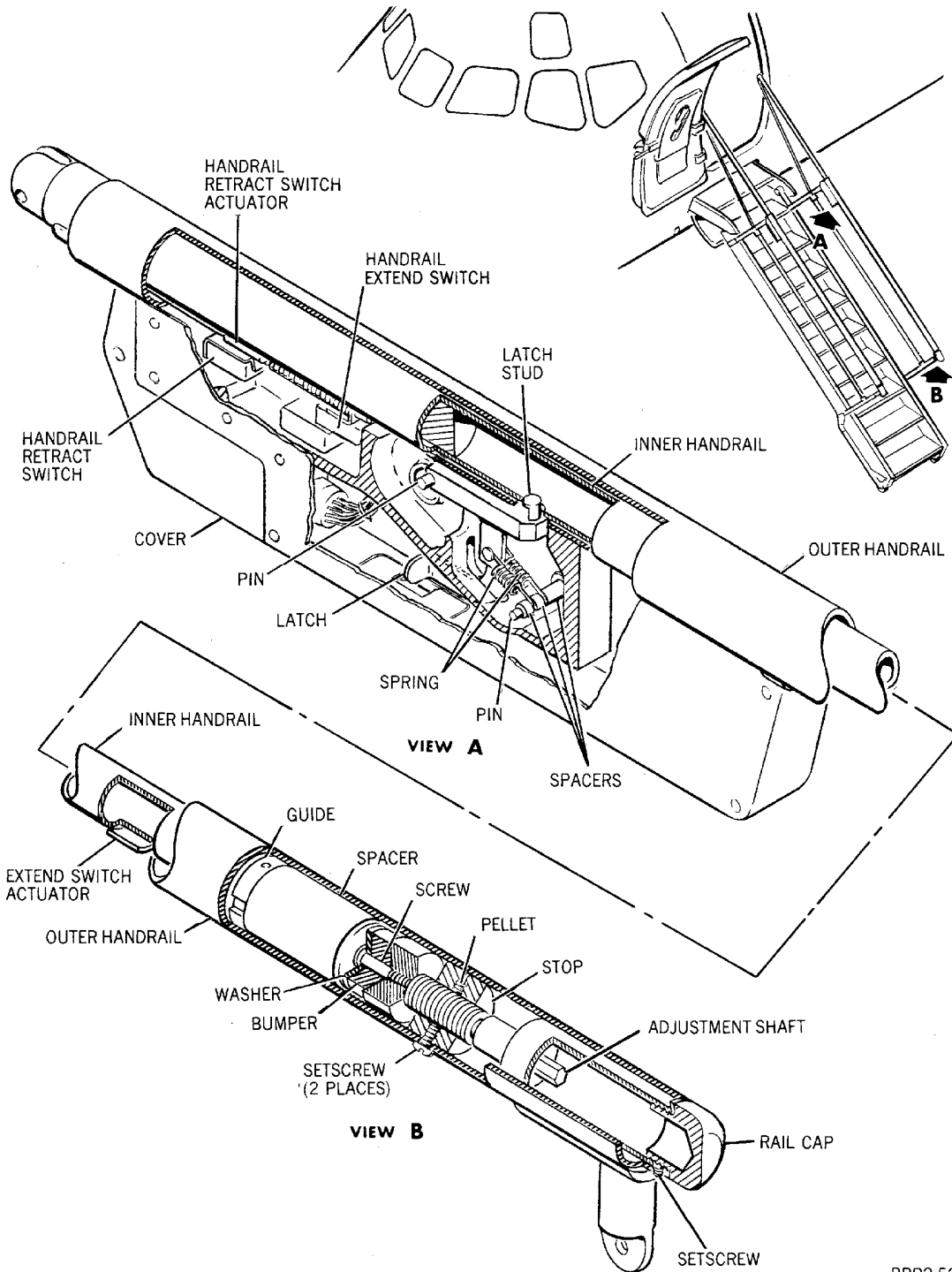
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

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**52-61-00**

Config 2  
Page 11  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-26A

**Passenger Forward Entrance Door Stairway Handrail Actuator  
Figure 3/52-61-00-990-812**

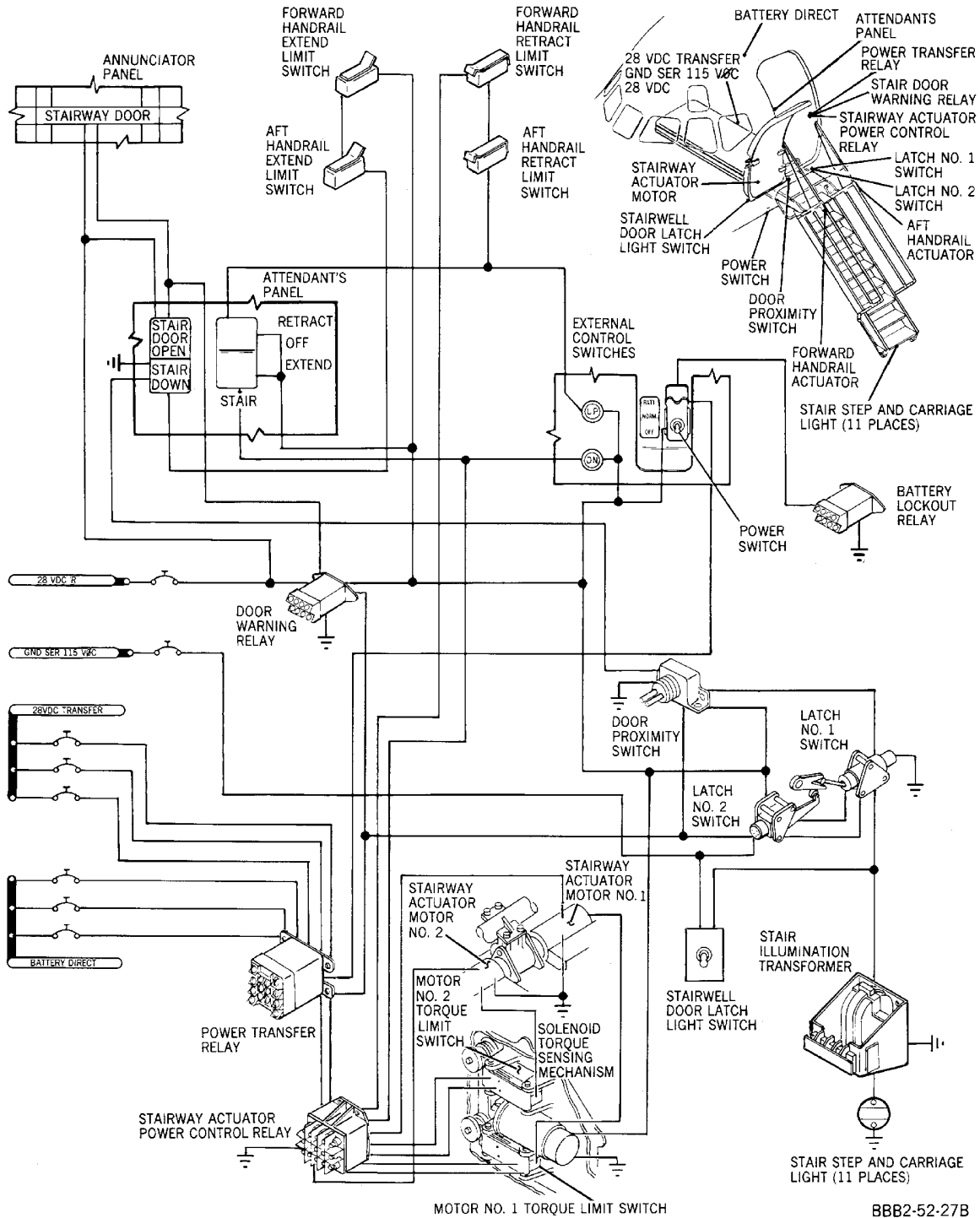
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

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**52-61-00**

Config 2  
Page 12  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Stairway -- Operation  
Figure 4/52-61-00-990-813**

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

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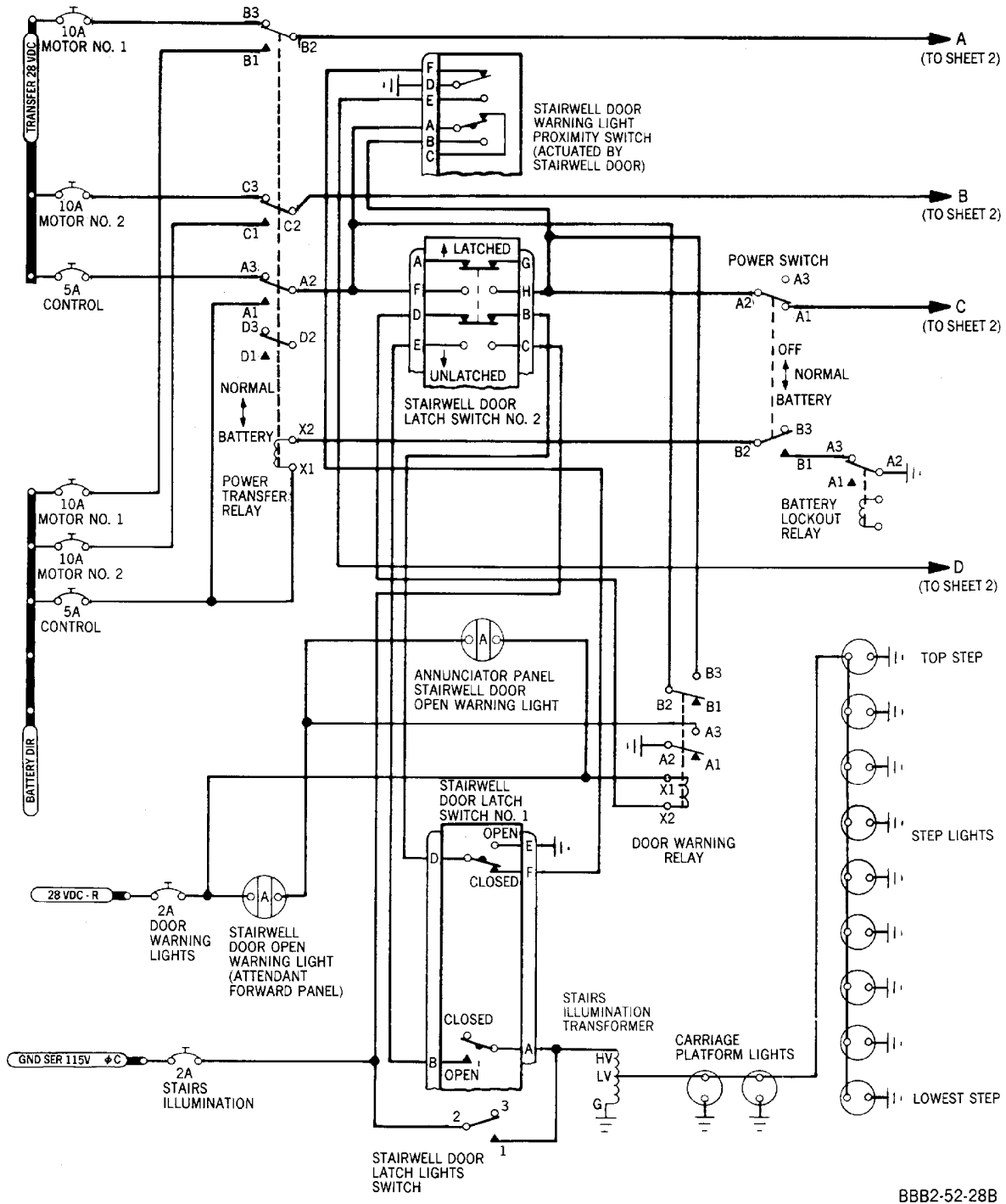
**52-61-00**

Config 2

Page 13

Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-28B

Passenger Forward Entrance Door Stairway -- Schematic  
Figure 5/52-61-00-990-814 (Sheet 1 of 2)

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

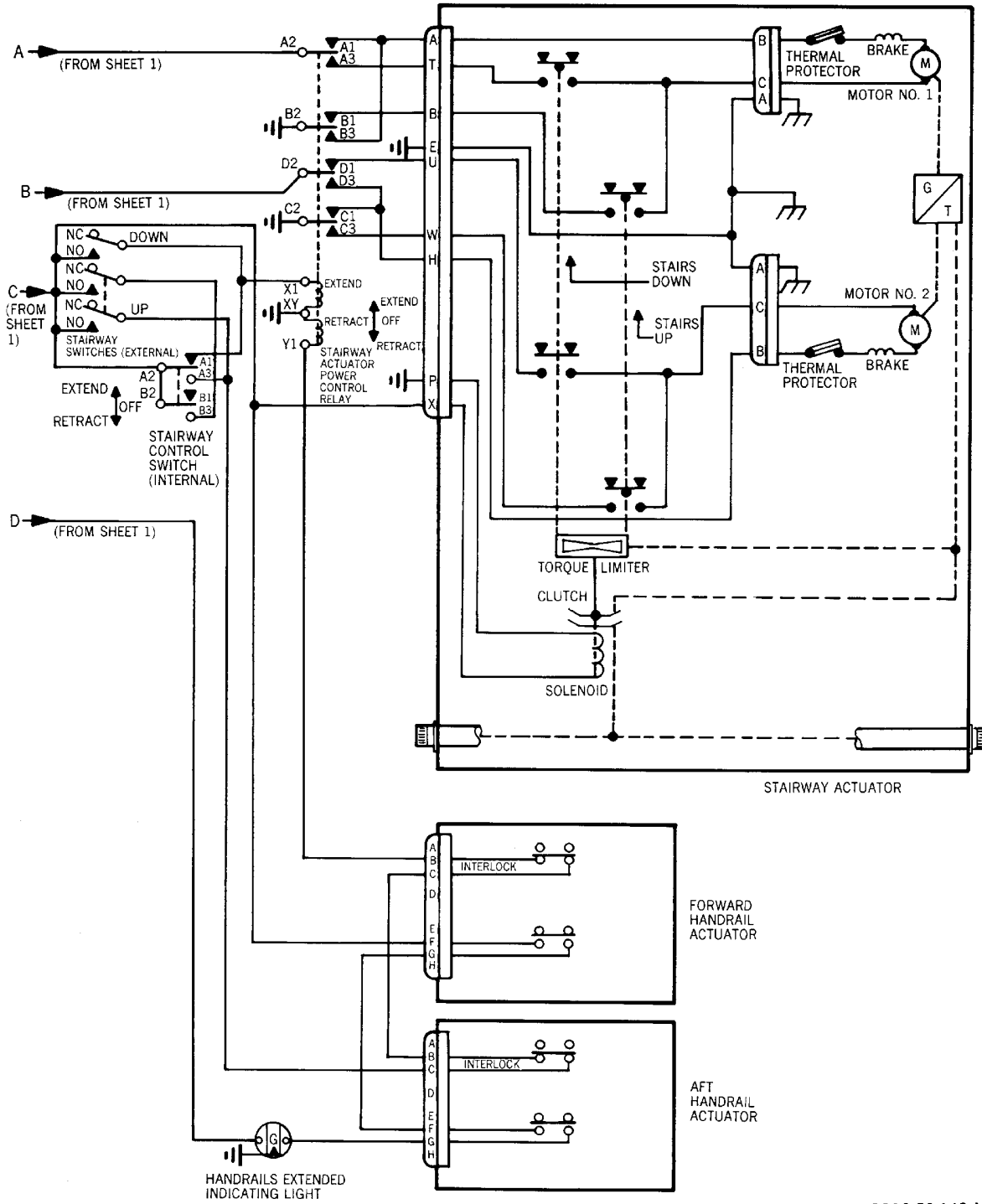
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52-61-00

Config 2  
Page 14  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL



BB82-52-143 A

**Passenger Forward Entrance Door Stairway -- Schematic**  
**Figure 5/52-61-00-990-814 (Sheet 2 of 2)**

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 15  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - TROUBLE SHOOTING

#### 1. General

- A. This maintenance practices provides trouble shooting instructions for the passenger forward entrance door stairway.
- B. Before starting trouble shooting make certain that power is available to the dc transfer bus and that the stairway circuit breakers, on the lower main circuit breaker panel, are closed.
- C. After checking a "Possible Cause", perform the following:
  - (1) Return all switches to their original position.
  - (2) Connect all electrical connectors.
  - (3) Install access panels and covers.
- D. When continuity checks are called for, refer to the Wiring Diagram Manual.
- E. The trouble shooting procedures, outlined in the following text, are to be performed under the following conditions:
  - (1) Passenger forward entrance door open and hold-open hook engaged, except as noted.
  - (2) Stairway to be in the extended position with inner handrails retracted and locked, except as noted.
  - (3) Electrical power, from the dc transfer bus, to be connected to the stairway circuit.

#### 2. Trouble Shooting

**Table 101**

	Possible Causes	Isolation Procedure	Correction
A.	STAIRWAY WILL NOT EXTEND OR RETRACT ELECTRICALLY		
(1)	Stairway actuator torque sensing mechanism defective	Depress external down button and determine if motors in actuator are operating. Release button.	If motors are operating replace actuator.  If motors are not operating check Possible Cause (2).
<b>NOTE:</b> Motor operation when stairway is fully extended indicates that torque sensing mechanism is defective.			
(2)	Actuator motors defective	Disconnect electrical plug (P1-299) from receptacle on actuator.  Depress external down button and check for 28vdc between pins H and U and between A and B on plug.  Depress external up button and check for 28vdc between pins A and T and between W and H of plug.	If voltage present, replace actuator. If voltage is not present check Possible Cause (3).  If voltage present, replace actuator. If voltage is not present check Possible Cause (3).
(3)	Stairway actuator power control relay defective	Place stairway control switch on attendant's panel in extend position, or depress external down button.	

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 101  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 101 (Continued)**

	Possible Causes	Isolation Procedure	Correction
		<p>Check for 28 vdc between terminals X1 and XY of power control relay.</p> <p>Check for 28 vdc between terminals A1 and B1 of relay.</p>	<p>If voltage present proceed to next step.</p> <p>If voltage is not present check continuity of relay ground circuit. If OK, check continuity of relay control circuits.</p> <p>If voltage is not present replace relay. If voltage present check continuity of both actuator motors power circuits from relay to plug on actuator.</p>
<b>B. STAIRWAY WILL NOT EXTEND ELECTRICALLY (RETRACTS OK)</b>			
(1)	Stairway actuator power control relay defective	<p>Place stairway control switch on attendant's panel in extend position.</p> <p>Check for 28 vdc between terminals X1 and XY of power control relay.</p> <p>Check for 28 vdc between terminals A1 and B1 and between D1 and C1 of relay.</p>	<p>If voltage present proceed with next step.</p> <p>If voltage is not present check continuity between terminal X1 or relay and A1 of stairway control switch on attendant's panel.</p> <p>If voltage is not present replace relay. If voltage present check continuity of stairway extend power circuits from relay to plug on actuator.</p>
<b>C. STAIRWAY WILL NOT RETRACT ELECTRICALLY (EXTENDS OK)</b>			
(1)	Stair detent locked	Check that stair detent is unlocked.	If stair detent is locked, unlock.
(2)	Interlock limit switch(es) in manual actuator housing(s) defective	<p>Check that both handrail sections are fully retracted.</p> <p>Remove cover plates from each housing.</p> <p>Disconnect plugs from receptacles.</p> <p>Check continuity between pins B and C of each receptacle and between pin B of aft plug and pin C of forward plug</p>	<p>If handrail sections are fully retracted proceed with next step.</p> <p>If handrail sections are not fully retracted check operation of handrails.</p> <p>If continuity is not OK retract (interlock) limit switch is defective. Replace actuator.</p> <p>If continuity OK, check continuity of stairway retract control circuit. If OK check Possible Cause (3).</p>
(3)	Stairway actuator power control relay defective	<p>Place stairway control switch on attendant's panel in retract position.</p> <p>Check for 28 vdc between terminals A3 and B3 and between C3 and D3 of power control relay.</p>	<p>If voltage is not present replace relay.</p> <p>If voltage is present check continuity of stairway retract power circuits from relay to plug on actuator.</p>

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 102  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 101 (Continued)**

	Possible Causes	Isolation Procedure	Correction
<b>D. STAIRWAY WILL NOT EXTEND OR RETRACT STRAIGHT</b>			
(1)	Dirt or foreign matter in rack gears in shroud, or cams on carriage	Using external control buttons extend and retract stairway several times.  Observe stairway as it extends and retracts and determine if carriage, stairs, or both are out of alignment.	If carriage is out of alignment, clean rack gears in shroud and recheck stairway adjustments. (PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST, PAGEBLOCK 52-61-00/501 Config 1)
<b>E. STAIRWAY EXTENDS AND RETRACTS AT APPROXIMATELY HALF NORMAL SPEED</b>			
(1)	One stairway actuator motor defective	Determine which motor is not operating by disconnecting electrical plugs from receptacles on actuator motors, one at a time, and depressing external up button.	If both motors are operating check Possible Cause (2). If only one motor is operating, check that power is available to other motor. If power is available, replace actuator.
(2)	Dirt or foreign matter in rack gears	Check rack gears for dirt and foreign matter.	If gears are dirty or contain foreign matter, clean gears and check stairway operation. If gears are clean and free of foreign matter, check stairway adjustments. (PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST, PAGEBLOCK 52-61-00/501 Config 1)
<b>F. STAIRWAY NOT FIRMLY HELD IN EXTENDED AND RETRACTED POSITIONS WHEN ACTUATOR MOTORS STOP</b>			
(1)	Torque sensing mechanism in actuator defective	Depress external control up button. Release button when stairway is retracted.  Depress external control down button. Hold button until motors stop.  When actuator motors stop, attempt to push carriage inward.	If motors do not stop within 5 seconds after stairway rollers contact ground, torque sensing mechanism is defective. Replace actuator.  If carriage moves inward, torque sensing mechanism is defective. Replace actuator.
<b>G. STAIRWAY WILL NOT FULLY EXTEND AND/OR RETRACT ELECTRICALLY</b>			
(1)	Dirt or foreign matter in rack gears	Check rack gears for dirt and foreign matter.	If rack gears OK check Possible Cause (2). If gears are dirty or contain foreign matter clean gears and check stairway operation. If not OK check Possible Cause (2).
(2)	Voltage to stairway actuators motors low	Disconnect electrical plug (P1-299) from actuator.	

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 103  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 101 (Continued)**

	Possible Causes	Isolation Procedure	Correction
		<p>If stairway will not fully extend depress stairway external control down button and check for 28 vdc between pins A and B and between pins H and U of plug.</p> <p>If stairway will not fully retract, depress stairway external up button and check for 28 vdc between pins A and T and between pins H and W of plug.</p>	<p>If voltage OK check Possible Cause (3). If voltage is not OK check wiring between plug and stairway actuator power control relay. If OK check wiring between relay and transfer bus.</p> <p>If voltage OK check Possible Cause (3). If voltage is not OK check wiring between plug and stairway actuator power control relay. If OK check wiring between relay and dc transfer bus.</p>
(3)	Torque sensing cable mechanism in stairway actuator defective	<p>Using external control push buttons, extend and retract stairway several times.</p> <p>Observe stairway</p>	<p>If stairway actuator motors continue to operate after motion of stairway stops, torque sensing mechanism is defective. Replace actuator.</p>
<b>H. STAIRWAY WILL NOT RETRACT ELECTRICALLY OR MANUALLY WHEN EXTENDED ELECTRICALLY</b>			
(1)	Stairway actuator torque sensing mechanism defective	Check for obvious causes of stairway jamming.	If no obvious causes detected, torque sensing mechanism is defective. Replace stairway actuator.
<p><b>NOTE:</b> For the operators convenience, replacement of the stairway actuator can be postponed and the stairway can be manually retracted by following the procedures in Paragraph 2.A.. The same procedures should be followed when replacing the stairway actuator with the stairway jammed in the extended position.</p>			

A. To manually retract jammed stairway, proceed as follows:

**WARNING:** TAG AND SAFETY CIRCUIT BREAKERS.

- (1) Open all stairway system circuit breakers.
- (2) Determine if drive shafts are preloaded by attempting axial movement of drive shafts by hand
- (3) If drive shafts are not preloaded, remove cotter pins from torque tubes and slide torque tubes until clear of actuator drive shafts. Secure torque tubes to carriage drive shafts and proceed with Paragraph 2.A.(7).

**CAUTION:** TO PREVENT DISENGAGEMENT OF RACK GEARS AND CARRIAGE DRIVE GEARS, REAR STOP MUST BE REMOVED AND INSTALLED IN REVERSE POSITION BEFORE REMOVING FORWARD STOP.

- (4) If drive shafts are preloaded, remove stop from aft carriage track and install stop in reverse position with arms of stop facing outboard.
- (5) Slowly remove stop from forward carriage track, permitting carriage to move outboard, to relieve drive shaft preload and permit torque sensing cable to slacken.

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 104  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** TO PREVENT INJURY TO PERSONNEL, EXERCISE EXTREME CARE WHEN REMOVING PRELOADED TORQUE TUBES FROM ACTUATOR DRIVE SHAFTS.

- (6) If stairway actuator remains locked after performing Paragraph 2.A.(4) and Paragraph 2.A.(5), remove cotter pins from torque tubes and slide torque tubes until clear of actuator drive shafts. Secure torque tubes to carriage drive shafts.

**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (7) Manually retract inner handrail sections.
- (8) Manually retract stairway into stairwell.
- (9) If Paragraph 2.A.(4) and Paragraph 2.A.(5) were performed, install stop on forward carriage track, remove stop from aft carriage track, and install stop on aft carriage track with arms of stop facing inboard.
- (10) Close and latch stairwell door.

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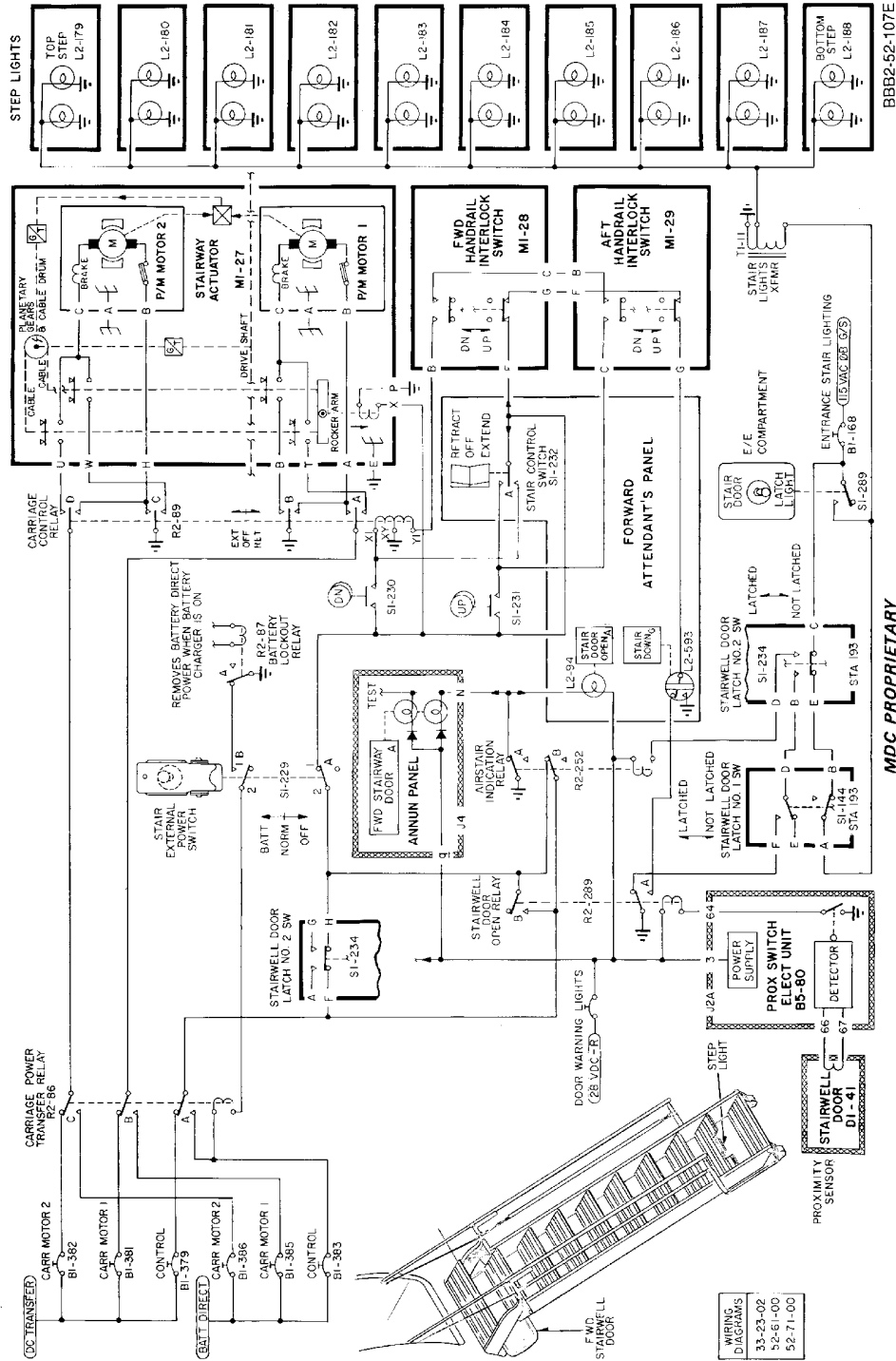
WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-00**

Config 1  
Page 105  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Stairway -- Schematic  
Figure 101/52-61-00-990-808 (Sheet 1 of 4)**

**EFFECTIVITY**

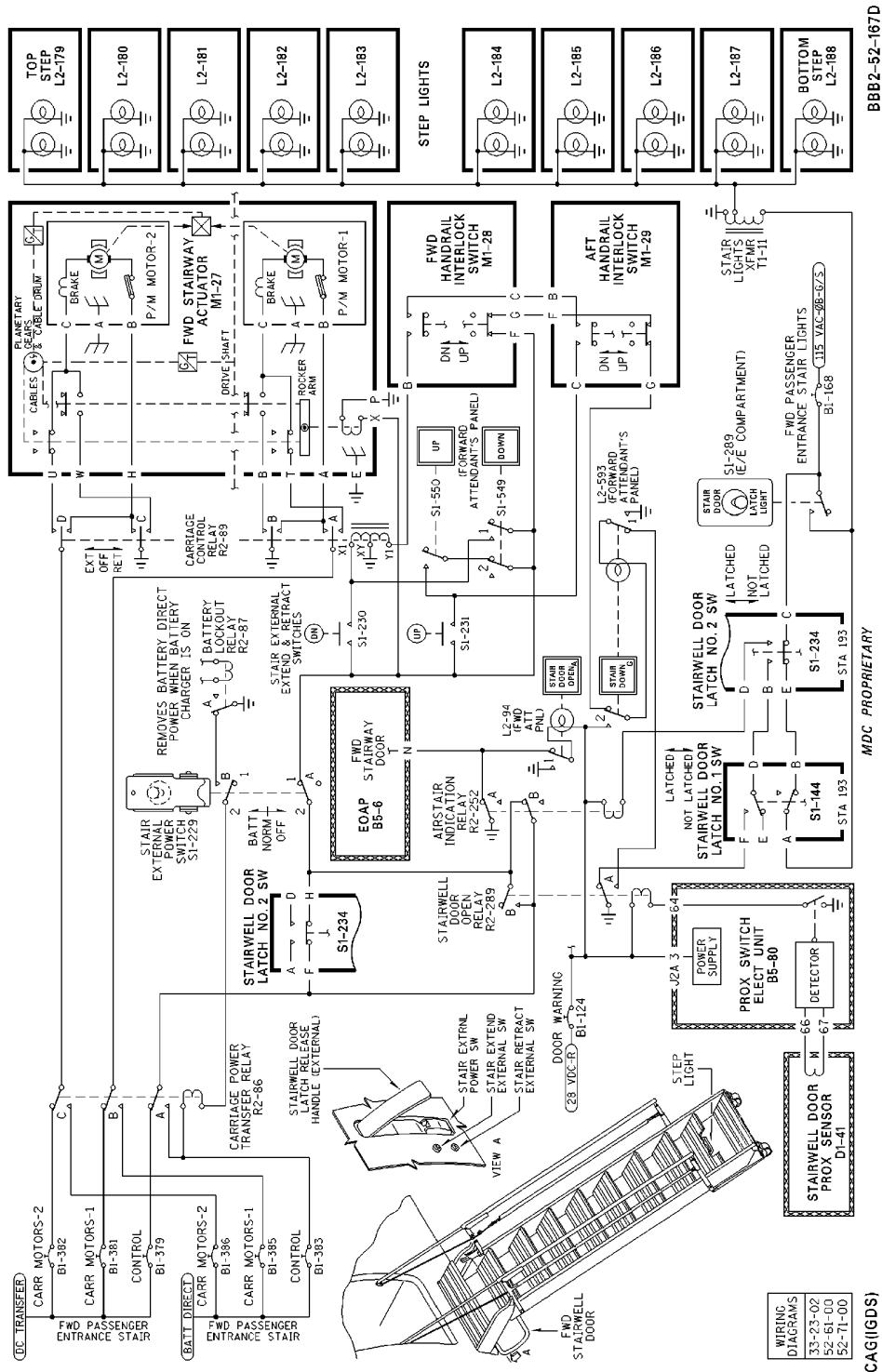
WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891

TP-80MM-WJE

**52-61-00**

Config 1  
Page 106  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Passenger Forward Entrance Door Stairway -- Schematic  
Figure 101/52-61-00-990-808 (Sheet 2 of 4)

EFFECTIVITY  
WJE 401-404, 406, 415, 417-419, 421, 423, 863-866,  
869, 871, 872, 875-879, 886, 887

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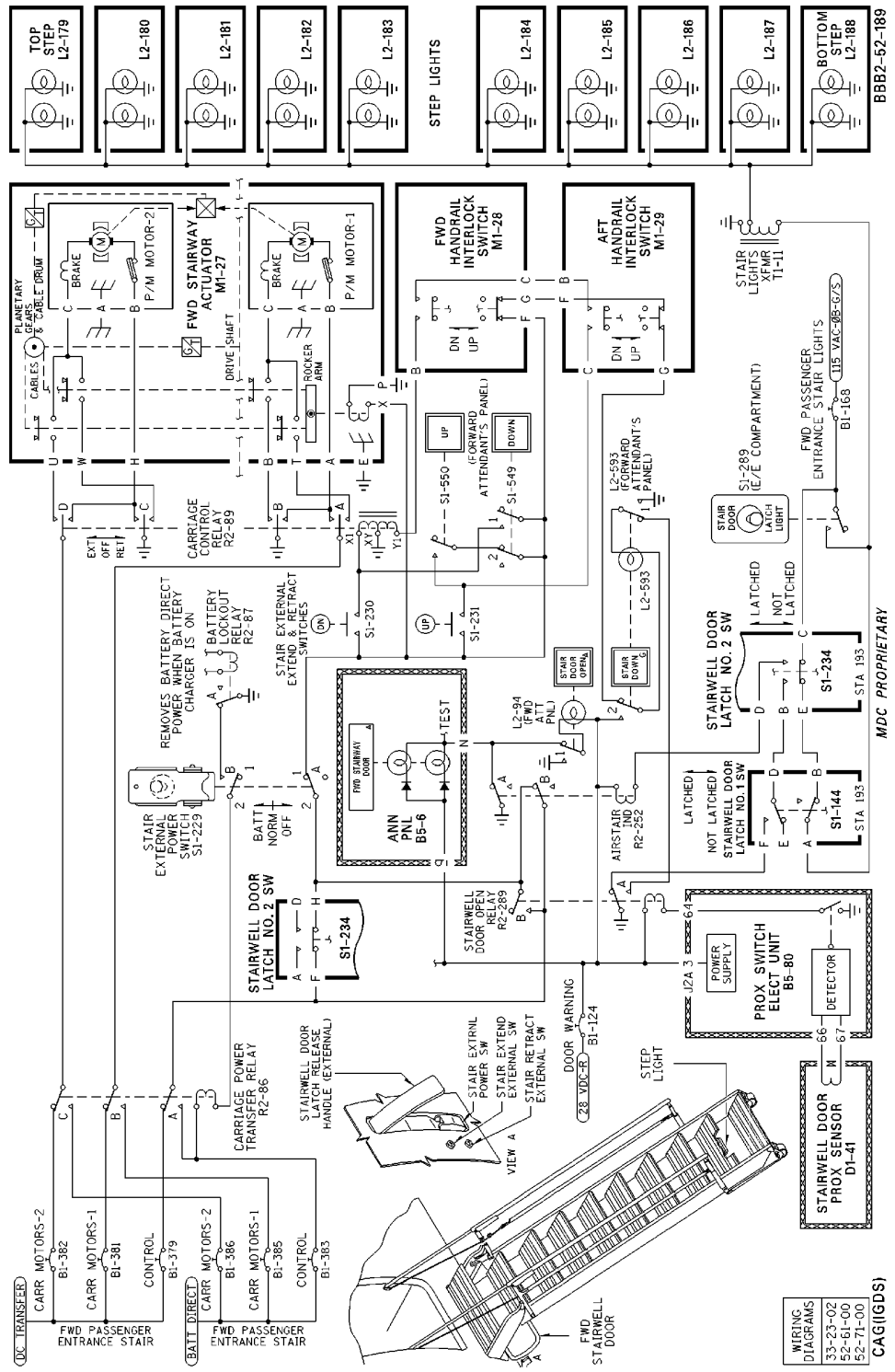
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**52-61-00**

Config 1  
Page 107  
Feb 01/2016



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Stairway -- Schematic  
Figure 101/52-61-00-990-808 (Sheet 3 of 4)**

EFFECTIVITY  
WJE 405-411, 880, 881, 883, 884, 892, 893

TP-80MM-WJE

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**52-61-00**

Config 1  
Page 108  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - TROUBLE SHOOTING

#### 1. General

- A. This maintenance practices provides trouble shooting instructions for the passenger forward entrance door stairway.
- B. Before starting trouble shooting make certain that power is available to the dc transfer bus and that the stairway circuit breakers, on the lower main circuit breaker panel, are closed.
- C. After checking a "Possible Cause", perform the following:
  - (1) Return all switches to their original position.
  - (2) Connect all electrical connectors.
  - (3) Install access panels and covers.
- D. When continuity checks are called for, refer to the Wiring Diagram Manual.
- E. The trouble shooting procedures, outlined in the following text, are to be performed under the following conditions:
  - (1) Passenger forward entrance door open and hold-open hook engaged, except as noted.
  - (2) Stairway to be in the extended position with inner handrails retracted and locked, except as noted.
  - (3) Electrical power, from the dc transfer bus, to be connected to the stairway circuit.

#### 2. Trouble Shooting

**Table 101**

	Possible Causes	Isolation Procedure	Correction
A.	STAIRWAY WILL NOT EXTEND OR RETRACT ELECTRICALLY		
(1)	Stairway actuator torque sensing mechanism defective	Depress external down button and determine if motors in actuator are operating. Release button.	If motors are operating replace actuator.  If motors are not operating check Possible Cause (2).
<b>NOTE:</b> Motor operation when stairway is fully extended indicates that torque sensing mechanism is defective.			
(2)	Actuator motors defective	Disconnect electrical plug (P1-299) from receptacle on actuator.  Depress external down button and check for 28vdc between pins H and U and between A and B on plug.  Depress external up button and check for 28vdc between pins A and T and between W and H of plug.	If voltage present, replace actuator. If voltage is not present check Possible Cause (3).  If voltage present, replace actuator. If voltage is not present check Possible Cause (3).
(3)	Stairway actuator power control relay defective	Place stairway control switch on attendant's panel in extend position, or depress external down button.	

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TP-80MM-WJE

**52-61-00**

Config 2  
Page 101  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 101 (Continued)**

Possible Causes		Isolation Procedure	Correction
		<p>Check for 28 vdc between terminals X1 and XY of power control relay.</p> <p>Check for 28 vdc between terminals A1 and B1 of relay.</p>	<p>If voltage present proceed to next step.</p> <p>If voltage is not present check continuity of relay ground circuit. If OK, check continuity of relay control circuits.</p> <p>If voltage is not present replace relay. If voltage present check continuity of both actuator motors power circuits from relay to plug on actuator.</p>
<b>B. STAIRWAY WILL NOT EXTEND ELECTRICALLY (RETRACTS OK)</b>			
(1)	Stairway actuator power control relay defective	<p>Place stairway control switch on attendant's panel in extend position.</p> <p>Check for 28 vdc between terminals X1 and XY of power control relay.</p> <p>Check for 28 vdc between terminals A1 and B1 and between D1 and C1 of relay.</p>	<p>If voltage present proceed with next step.</p> <p>If voltage is not present check continuity between terminal X1 or relay and A1 of stairway control switch on attendant's panel.</p> <p>If voltage is not present replace relay. If voltage present check continuity of stairway extend power circuits from relay to plug on actuator.</p>
<b>C. STAIRWAY WILL NOT RETRACT ELECTRICALLY (EXTENDS OK)</b>			
(1)	Stair detent locked	Check that stair detent is unlocked.	If stair detent is locked, unlock.
(2)	Interlock limit switch(es) in manual actuator housing(s) defective	<p>Check that both handrail sections are fully retracted.</p> <p>Remove cover plates from each housing.</p> <p>Disconnect plugs from receptacles.</p> <p>Check continuity between pins B and C of each receptacle and between pin B of aft plug and pin C of forward plug</p>	<p>If handrail sections are fully retracted proceed with next step.</p> <p>If handrail sections are not fully retracted check operation of handrails.</p> <p>If continuity is not OK retract (interlock) limit switch is defective. Replace actuator.</p> <p>If continuity OK, check continuity of stairway retract control circuit. If OK check Possible Cause (3).</p>
(3)	Stairway actuator Place stairway control power control relay defective	switch on attendant's panel in retract position.	

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 102  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 101 (Continued)**

	Possible Causes	Isolation Procedure	Correction
		Check for 28 vdc between terminals A3 and B3 and between C3 and D3 of power control relay.	If voltage is not present replace relay. If voltage is present check continuity of stairway retract power circuits from relay to plug on actuator.
<b>D. STAIRWAY WILL NOT EXTEND OR RETRACT STRAIGHT</b>			
(1)	Dirt or foreign matter in rack gears in shroud, or cams on carriage	Using external control buttons extend and retract stairway several times.  Observe stairway as it extends and retracts and determine if carriage, stairs, or both are out of alignment.	If carriage is out of alignment, clean rack gears in shroud and recheck stairway adjustments. (PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST, PAGEBLOCK 52-61-00/501 Config 2)
<b>E. STAIRWAY EXTENDS AND RETRACTS AT APPROXIMATELY HALF NORMAL SPEED</b>			
(1)	One stairway actuator motor defective	Determine which motor is not operating by disconnecting electrical plugs from receptacles on actuator motors, one at a time, and depressing external up button.	If both motors are operating check Possible Cause (2). If only one motor is operating, check that power is available to other motor. If power is available, replace actuator.
(2)	Dirt or foreign matter in rack gears	Check rack gears for dirt and foreign matter.	If gears are dirty or contain foreign matter, clean gears and check stairway operation. If gears are clean and free of foreign matter, check stairway adjustments. (PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST, PAGEBLOCK 52-61-00/501 Config 2)
<b>F. STAIRWAY NOT FIRMLY HELD IN EXTENDED AND RETRACTED POSITIONS WHEN ACTUATOR MOTORS STOP</b>			
(1)	Torque sensing mechanism in actuator defective	Depress external control up button. Release button when stairway is retracted.  Depress external control down button. Hold button until motors stop.  When actuator motors stop, attempt to push carriage inward.	If motors do not stop within 5 seconds after stairway rollers contact ground, torque sensing mechanism is defective. Replace actuator.  If carriage moves inward, torque sensing mechanism is defective. Replace actuator.
<b>G. STAIRWAY WILL NOT FULLY EXTEND AND/OR RETRACT ELECTRICALLY</b>			

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 103  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 101 (Continued)**

Possible Causes		Isolation Procedure	Correction
(1)	Dirt or foreign matter in rack gears	Check rack gears for dirt and foreign matter.	If rack gears OK check Possible Cause (2). If gears are dirty or contain foreign matter clean gears and check stairway operation. If not OK check Possible Cause (2).
(2)	Voltage to stairway actuators motors low	Disconnect electrical plug (P1-299) from actuator.  If stairway will not fully extend depress stairway external control down button and check for 28 vdc between pins A and B and between pins H and U of plug.  If stairway will not fully retract, depress stairway external up button and check for 28 vdc between pins A and T and between pins H and W of plug.	If voltage OK check Possible Cause (3). If voltage is not OK check wiring between plug and stairway actuator power control relay. If OK check wiring between relay and transfer bus.  If voltage OK check Possible Cause (3). If voltage is not OK check wiring between plug and stairway actuator power control relay. If OK check wiring between relay and dc transfer bus.
(3)	Torque sensing cable mechanism in stairway actuator defective	Using external control push buttons, extend and retract stairway several times.  Observe stairway	If stairway actuator motors continue to operate after motion of stairway stops, torque sensing mechanism is defective. Replace actuator.
<b>H. STAIRWAY WILL NOT RETRACT ELECTRICALLY OR MANUALLY WHEN EXTENDED ELECTRICALLY</b>			
(1)	Stairway actuator torque sensing mechanism defective	Check for obvious causes of stairway jamming.	If no obvious causes detected, torque sensing mechanism is defective. Replace stairway actuator.
<b>NOTE:</b> For the operators convenience, replacement of the stairway actuator can be postponed and the stairway can be manually retracted by following the procedures in Paragraph 2.A.. The same procedures should be followed when replacing the stairway actuator with the stairway jammed in the extended position.			

A. To manually retract jammed stairway, proceed as follows:

**WARNING: TAG AND SAFETY CIRCUIT BREAKERS.**

- (1) Open all stairway system circuit breakers.
- (2) Determine if drive shafts are preloaded by attempting axial movement of drive shafts by hand
- (3) If drive shafts are not preloaded, remove cotter pins from torque tubes and slide torque tubes until clear of actuator drive shafts. Secure torque tubes to carriage drive shafts and proceed with Paragraph 2.A.(7).

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 104  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** TO PREVENT DISENGAGEMENT OF RACK GEARS AND CARRIAGE DRIVE GEARS, REAR STOP MUST BE REMOVED AND INSTALLED IN REVERSE POSITION BEFORE REMOVING FORWARD STOP.

- (4) If drive shafts are preloaded, remove stop from aft carriage track and install stop in reverse position with arms of stop facing outboard.
- (5) Slowly remove stop from forward carriage track, permitting carriage to move outboard, to relieve drive shaft preload and permit torque sensing cable to slacken.

**WARNING:** TO PREVENT INJURY TO PERSONNEL, EXERCISE EXTREME CARE WHEN REMOVING PRELOADED TORQUE TUBES FROM ACTUATOR DRIVE SHAFTS.

- (6) If stairway actuator remains locked after performing Paragraph 2.A.(4) and Paragraph 2.A.(5), remove cotter pins from torque tubes and slide torque tubes until clear of actuator drive shafts. Secure torque tubes to carriage drive shafts.

**WARNING:** RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (7) Manually retract inner handrail sections.
- (8) Manually retract stairway into stairwell.
- (9) If Paragraph 2.A.(4) and Paragraph 2.A.(5) were performed, install stop on forward carriage track, remove stop from aft carriage track, and install stop on aft carriage track with arms of stop facing inboard.
- (10) Close and latch stairwell door.

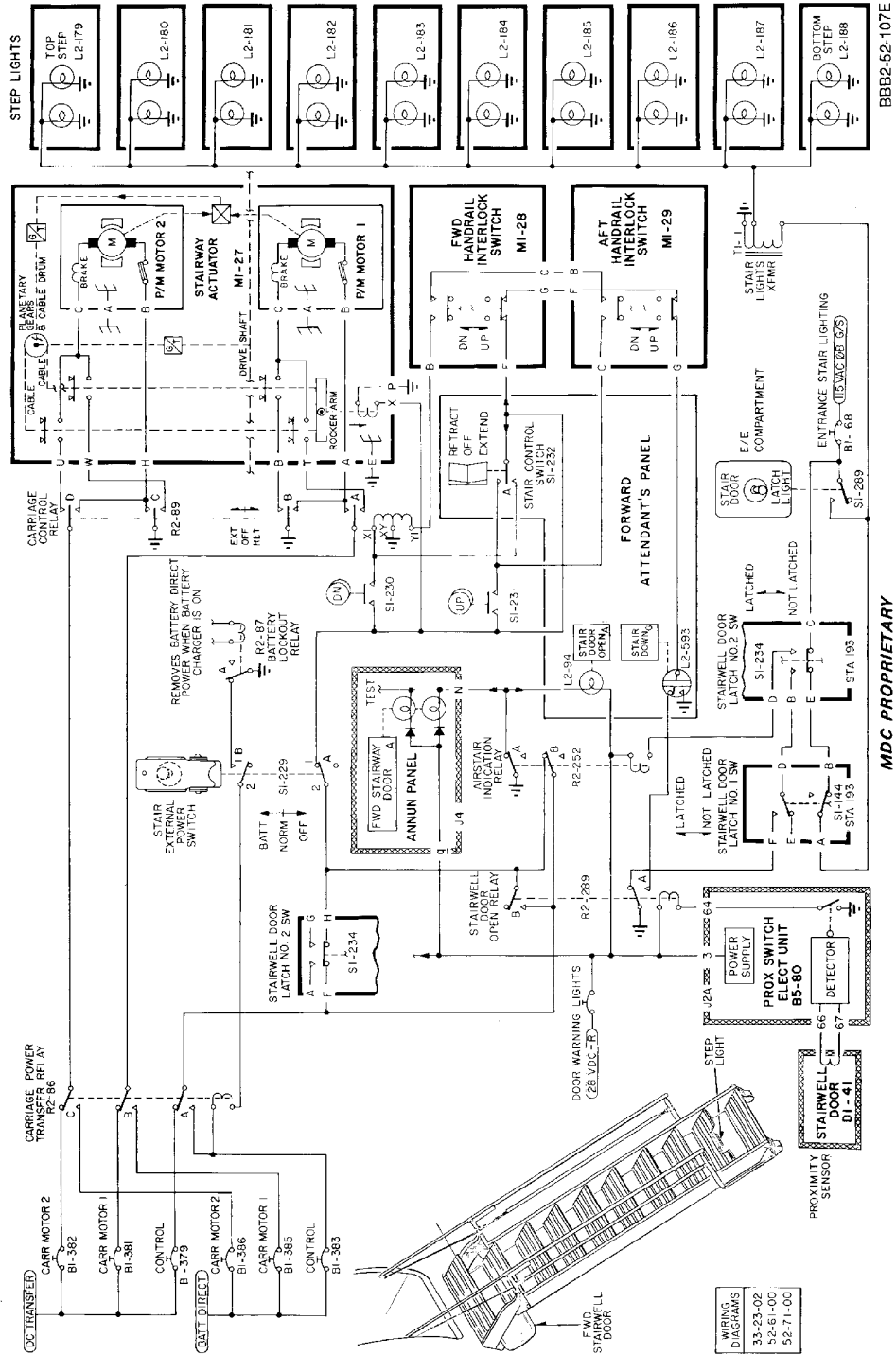
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 105  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



**Passenger Forward Entrance Door Stairway -- Schematic**  
Figure 101/52-61-00-990-815

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 106  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practices provides removal/installation instructions for the passenger forward entrance door stairway. (Figure 401)
- B. The passenger forward entrance door stairway is removed as a complete unit.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 401**

Name and Number	Manufacturer
Handling fixture, forward stairway, 5916742-1	Douglas Aircraft Co.

#### 3. Removal/Installation Passenger Forward Entrance Door Stairway

- A. Remove Stairway

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

##### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

##### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

##### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

##### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 401  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(Continued)

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

(2) Unlock passenger door to release stairwell door interlock.

**WARNING:** WHEN UNLATCHING STAIRWELL DOOR WITH STAIRWAY ELECTRICAL CIRCUIT DEENERGIZED, REMAIN CLEAR OF STAIRWELL DOOR AREA. STAIRWAY CAN CAUSE STAIR-WELL DOOR TO SPRING OUTWARD WITH ENOUGH FORCE TO CAUSE INJURY TO PERSONNEL.

- (3) Actuate stairwell door external control handle to unlatched position.
- (4) Pull stairwell open far enough to move bottom step hook from between rollers on door.
- (5) Disconnect electrical connectors, located at forward end of stairwell door opening.
- (6) Remove clamp securing stairway electrical cables to aircraft structure.
- (7) Index plate to release crank in latch hold-open mechanism, and remove plate, providing adequate clearance for shroud as stairway is removed.
- (8) Remove carriage stops from forward and aft shroud tracks.
- (9) Place handling fixture into position to receive stairway.

**WARNING:** PASSENGER FORWARD ENTRANCE DOOR STAIRWAY WEIGHS APPROXIMATELY 235 POUNDS (106.6KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING STAIRWAY.

**CAUTION:** LIMIT SWITCH MUST BE ACTUATED WHEN REMOVING STAIRWAY TO PREVENT POSSIBLE DAMAGE TO STAIRWAY SHROUD AND SWITCH.

- (10) Tie or tape stairwell door warning light limit switch in actuated position and pull stairway out of stairwell onto handling fixture.

**B. Install Stairway**

- (1) Make sure that these circuit breakers are open and have safety tags:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-00**

Config 1  
Page 402  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- (2) Check that plate has been removed from release crank in latch hold-open mechanism. If not, index plate to release crank, and remove plate.

**WARNING:** PASSENGER FORWARD ENTRANCE DOOR STAIRWAY WEIGHS APPROXIMATELY 235 POUNDS (106.6KG). MAKE CERTAIN SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING STAIRWAY.

**CAUTION:** STAIRWAY MUST SLIDE INTO COMPARTMENT WITHOUT BINDING. BINDING WILL CAUSE DEFLECTION OF TRACKS AND RACK GEARS IN SHROUD, WHICH IN TURN WILL CAUSE FAULTY OPERATION OF STAIRWAY.

- (3) With stairway supported by handling fixture, align tracks on stairway shroud with tee fittings in stairwell.
- (4) Connect stairway electrical connectors located at forward end of stairwell door opening.
- (5) Loop electrical cable as shown in Figure 401.

**CAUTION:** LOOP AND SECURE ELECTRICAL CABLE IN A MANNER THAT WILL PREVENT CARRIAGE OR STAIR RUBBING CABLE DURING STAIRWAY OPERATION.

- (6) Install clamps securing electrical cable to aircraft structure.
- (7) Install carriage stops on forward and aft shroud tracks.

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-00

Config 1  
Page 403  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (8) Install plate on release crank in latch hold-open mechanism with index marks aligned. Verify serrated parts are properly mated before tightening bolts.
- (9) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- (10) Using external down pushbuttons, extend and retract stair-way.
- (11) Verify that stairway operates properly. (PAGEBLOCK 52-61-00/501 Config 1)
- (12) Using external up pushbutton, retract stairway. Hold button depressed and latch stairwell door with external handle.

#### EFFECTIVITY

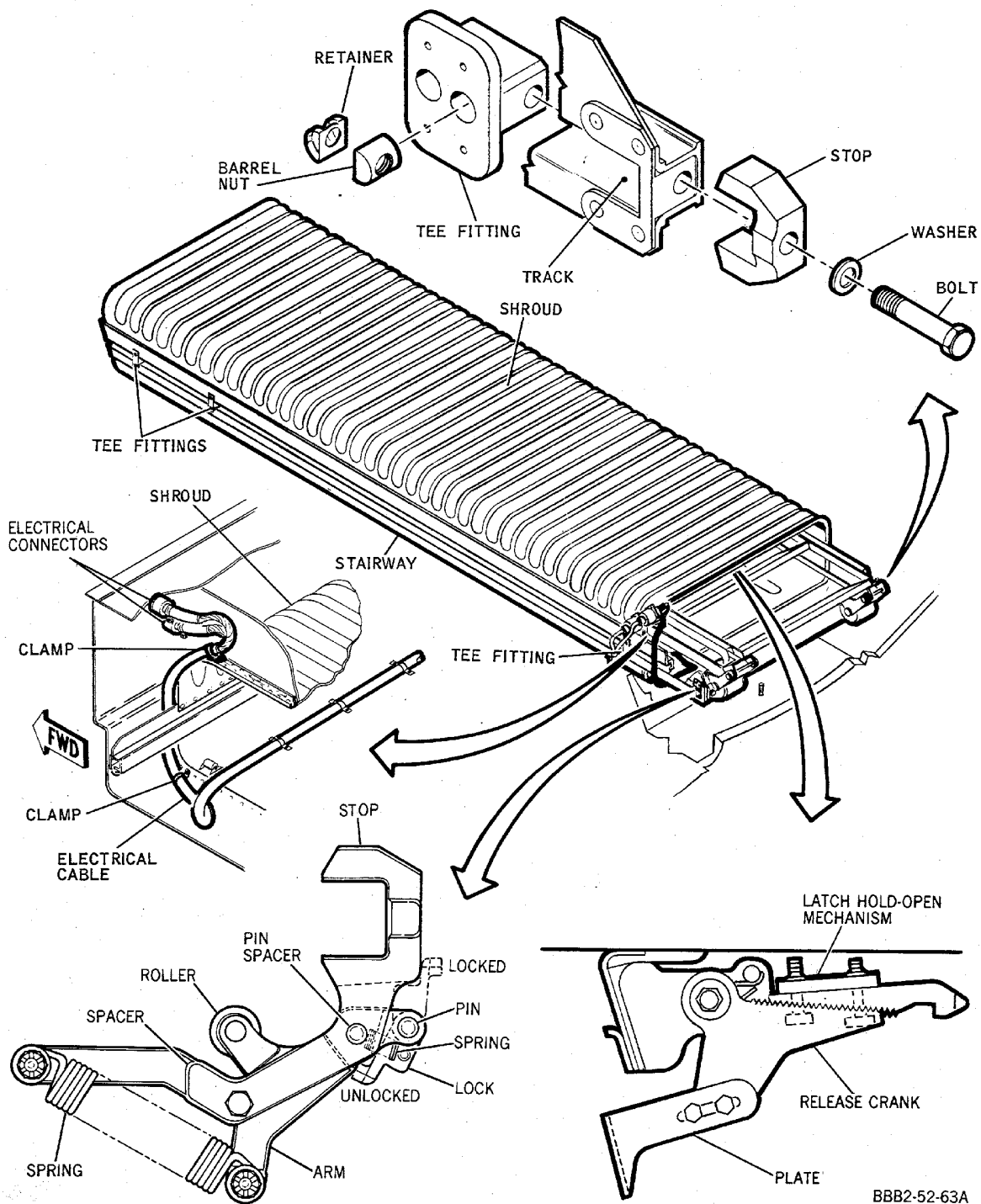
WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-00

Config 1  
Page 404  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-63A

**Passenger Forward Entrance Door Stairway -- Installation**  
**Figure 401/52-61-00-990-806**

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

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**52-61-00**

Config 1  
Page 405  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practices provides removal/installation instructions for the passenger forward entrance door stairway. (Figure 401)
- B. The passenger forward entrance door stairway is removed as a complete unit.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 401**

Name and Number	Manufacturer
Handling fixture, forward stairway, 5916742-1	Douglas Aircraft Co.

#### 3. Removal/Installation Passenger Forward Entrance Door Stairway

- A. Remove Stairway

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

##### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

##### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

##### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

##### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (2) Unlock passenger door to release stairwell door interlock.

EFFECTIVITY <b>WJE 412, 414; ALL, with Airstairs Installed</b>
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TP-80MM-WJE

## 52-61-00

Config 2  
Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** WHEN UNLATCHING STAIRWELL DOOR WITH STAIRWAY ELECTRICAL CIRCUIT DEENERGIZED, REMAIN CLEAR OF STAIRWELL DOOR AREA. STAIRWAY CAN CAUSE STAIRWELL DOOR TO SPRING OUTWARD WITH ENOUGH FORCE TO CAUSE INJURY TO PERSONNEL.

- (3) Actuate stairwell door external control handle to unlatched position.
- (4) Pull stairwell open far enough to move bottom step hook from between rollers on door.
- (5) Disconnect electrical connectors, located at forward end of stairwell door opening.
- (6) Remove clamp securing stairway electrical cables to aircraft structure.
- (7) Index plate to release crank in latch hold-open mechanism, and remove plate, providing adequate clearance for shroud as stairway is removed.
- (8) Remove carriage stops from forward and aft shroud tracks.
- (9) Place handling fixture into position to receive stairway.
- (10) Tie or tape stairwell door warning light limit switch in actuated position and pull stairway out of stairwell onto handling fixture.

### B. Install Stairway

- (1) Make sure that these circuit breakers are open and have safety tags:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (2) Check that plate has been removed from release crank in latch hold-open mechanism. If not, index plate to release crank, and remove plate.
- (3) With stairway supported by handling fixture, align tracks on stairway shroud with tee fittings in stairwell.
- (4) Connect stairway electrical connectors located at forward end of stairwell door opening.
- (5) Loop electrical cable as shown in Figure 401.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

# 52-61-00

Config 2  
Page 402  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (6) Install clamps securing electrical cable to aircraft structure.
- (7) Install carriage stops on forward and aft shroud tracks.
- (8) Install plate on release crank in latch hold-open mechanism with index marks aligned. Verify serrated parts are properly mated before tightening bolts.
- (9) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (10) Using external down pushbuttons, extend and retract stair-way.
- (11) Verify that stairway operates properly. (PAGEBLOCK 52-61-00/501 Config 2)
- (12) Using external up pushbutton, retract stairway. Hold button depressed and latch stairwell door with external handle.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

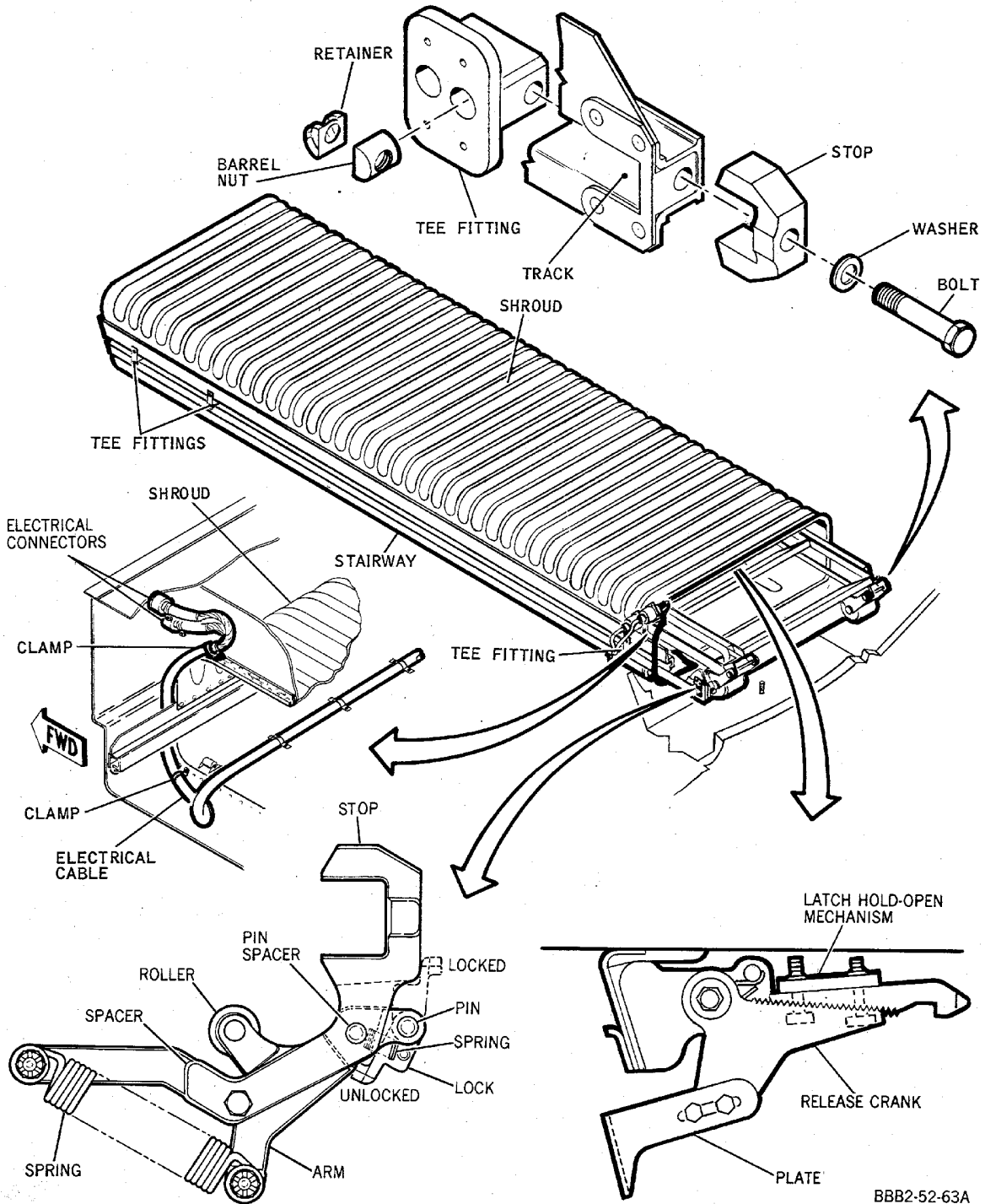
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# 52-61-00

Config 2  
Page 403  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-63A

**Passenger Forward Entrance Door Stairway -- Installation  
Figure 401/52-61-00-990-816**

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

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**52-61-00**

Config 2  
Page 404  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST

### 1. General

- A. This maintenance practice provides adjustment/test instructions for the passenger forward entrance door stairway. (Figure 501)
- B. Normally the stairway is adjusted before installation in the aircraft. However, some adjustment can be made and the functional test performed with the stairway installed. The adjustment procedures will enable maintenance personnel to correct minor defects in the stairway operation without removing the unit from the aircraft.
- C. For adjustment of stairwell door latch switches (FORWARD STAIRWELL DOOR LATCH MECHANISM - ADJUSTMENT/TEST, PAGEBLOCK 52-62-01/501). For adjustment of stairwell door warning switch  
  
(FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-08/201 Config 1 or FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-08/201 Config 2)  
  
FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-08/201 Config 2

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Test set, Airstair, 5916818-1	Douglas Aircraft Co.
Torque wrench (0-100 inch pounds range)	Commercially available

**EFFECTIVITY**

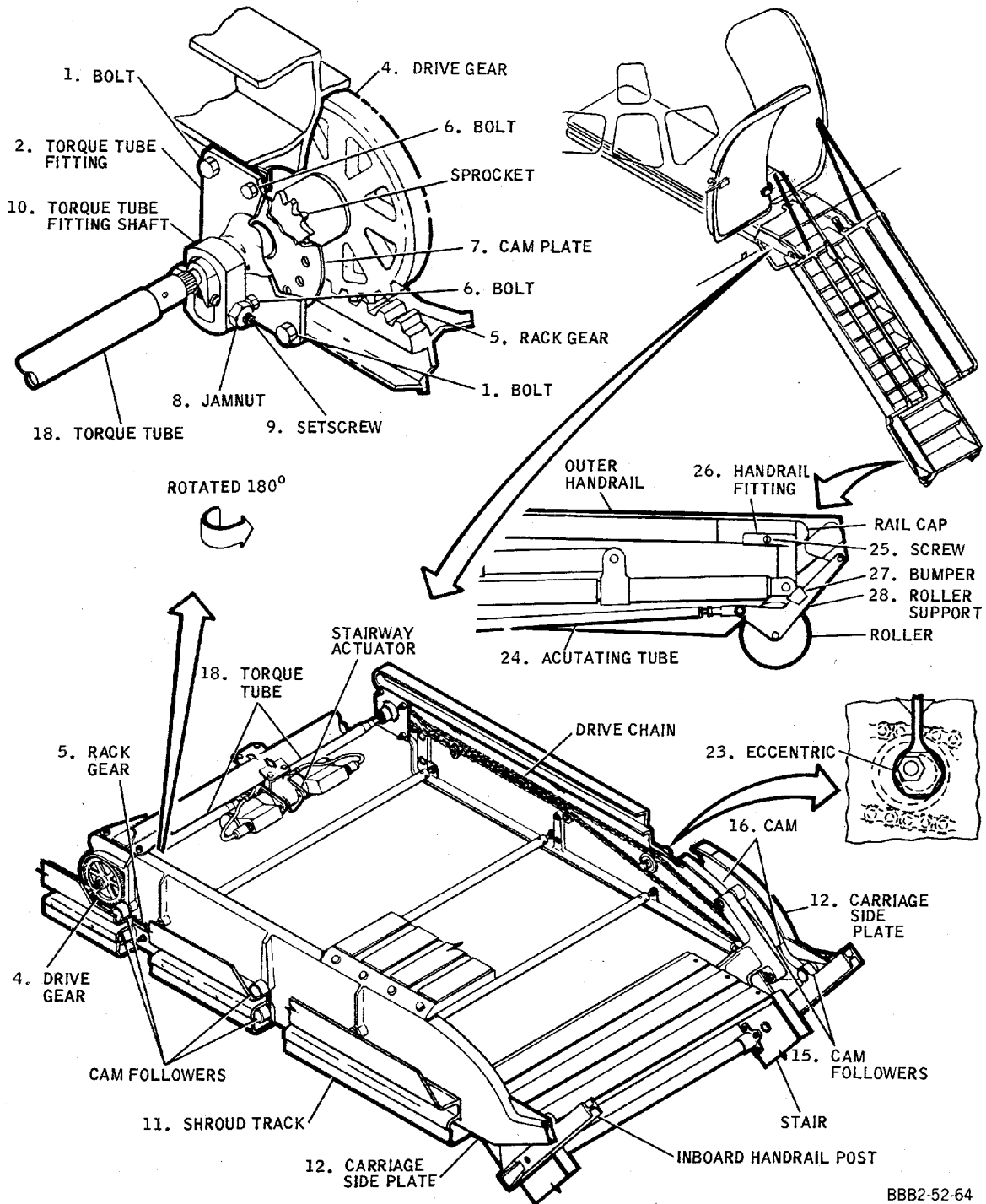
**WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 501  
Feb 01/2016

MD-80  
AIRCRAFT MAINTENANCE MANUAL



BBB2-52-64

Passenger Forward Entrance Door Stairway -- Adjustment  
Figure 501/52-61-00-990-807 (Sheet 1 of 2)

EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

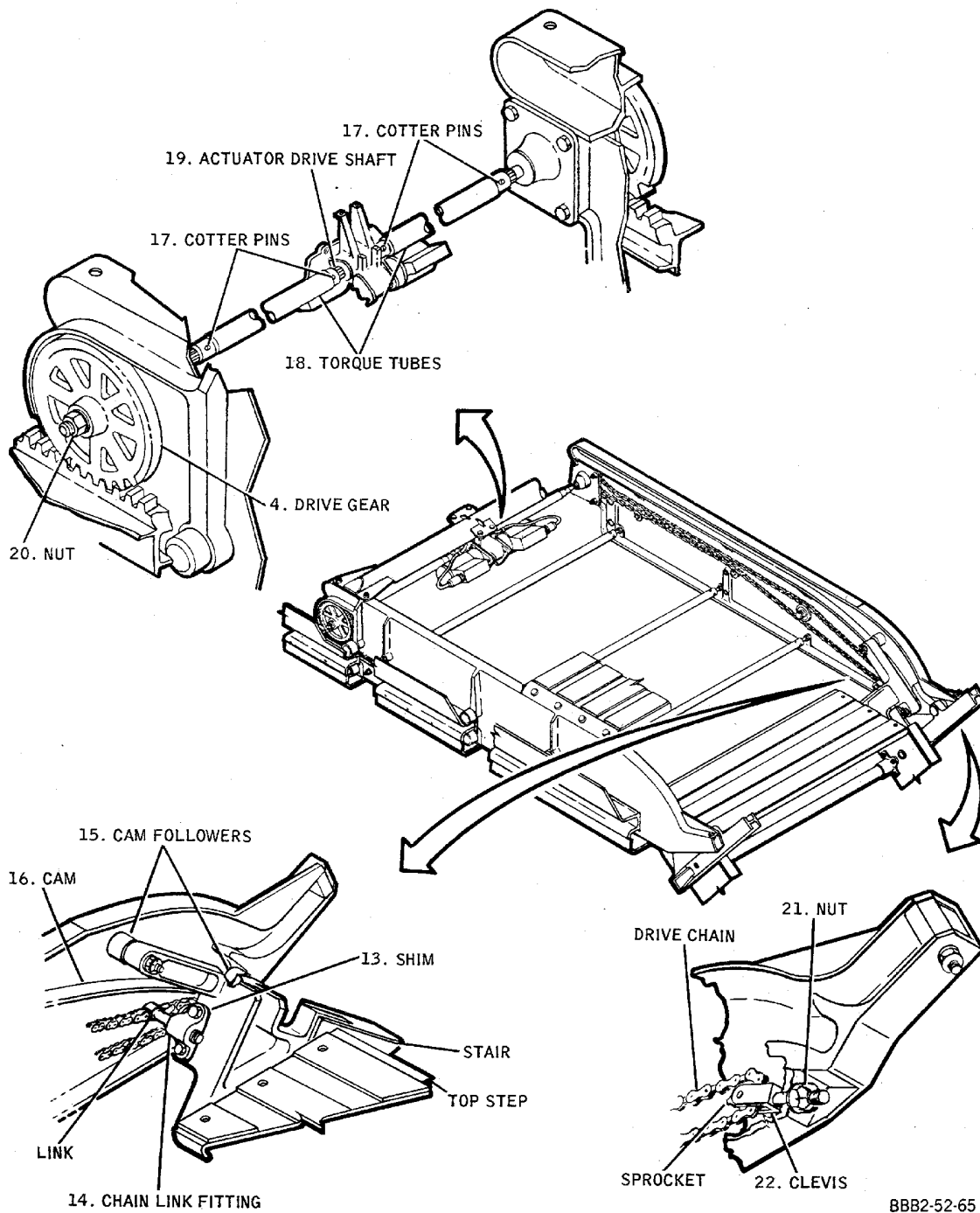
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52-61-00

Config 1  
Page 502  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-65

**Passenger Forward Entrance Door Stairway -- Adjustment**  
Figure 501/52-61-00-990-807 (Sheet 2 of 2)

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

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**52-61-00**

Config 1  
Page 503  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Passenger Forward Entrance Door Stairway

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 501.

#### A. Adjust Stairway

NOTE: Provide a support (platform, planks, etc.), 86 3/4 inches (2203.5 mm) below the threshold of the forward entrance door, for the stair ground rollers when adjusting the stairway.

**WARNING:** MAKE CERTAIN THAT ALL STAIRWAY CONTROL CIRCUIT BREAKERS, LOCATED ON LOWER EPC AND OVERHEAD CIRCUIT BREAKER PANELS, ARE OPEN, TAGGED, AND SAFETIED WHEN ADJUSTING STAIRWAY.

**CAUTION:** HANDRAILS MUST BE PROPERLY ADJUSTED BEFORE RETRACTING STAIR TO PREVENT DAMAGE TO EQUIPMENT.

- (1) Open these circuit breakers and install safety tags:

#### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### **WJE 410**

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### **WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
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#### **WJE 410**

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

#### **WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

- (2) Handrail Adjustment

- (a) Loosen attached screws (25) on handrail fittings (26). Do not remove screws.

#### EFFECTIVITY

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

## 52-61-00

Config 1

Page 504

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (b) Manually retract stair until horizontal.
  - (c) Adjust actuating tube (24) to position ground roller 1/32 inch (0.79 mm) from bottom step of stair. Tighten jamnut on clevis.
  - (d) Place each outboard handrail post in firm contact with bumper (27) and tighten accessible attach screws (25) on handrail fittings (26).
  - (e) Manually extend stair and tighten remaining attach screws (25) on handrail fittings (26).
- (3) Carriage Adjustment
- NOTE: Adjustment of the carriage consists of positioning the carriage parallel to the rack gears and tracks in the shroud.
- (a) Remove cover in lower surface of shroud pan.
  - (b) Extend stairway approximately half-way out of shroud and support ladder end.
  - (c) Back off jamnuts (8) and loosen setscrews (9) on torque tube fitting shaft (10).
  - (d) Adjust torque tube fitting shaft (10) until carriage is parallel to rack gears (5) and shroud tracks (11).
  - (e) Manually cycle stairway and check that carriage remains approximately parallel to rack gears (5) and shroud tracks (11) throughout entire cycle.
  - (f) If carriage travel is not approximately parallel through-out cycle, check rack gears (5), drive gears (4), and shroud tracks (11) for foreign material or distortion. Clean or repair as necessary and repeat step (d) until proper carriage travel is obtained.
  - (g) Check that setscrews (9) are tightened. Torque jamnuts (8) 30 to 40 inch-pounds (3.4 to 4.5 N·m).
- (4) Stairway Chain Tension Adjustment
- (a) Manually extend stair until ground rollers contact support.  
Reference NOTE (Paragraph 3.A.)
  - (b) Stand on lower step of stair and push handrails toward aircraft until carriage cam follower is engaged in detent stop.
  - (c) Clamp carriage in the fully extended position and tie outboard handrail posts to center stair step with ropes.
  - (d) Check that eccentrics (23) are rotated approximately 60 degrees inboard from top dead center.
  - (e) Tighten nut (21) on each clevis (22). Torque nut 31 to 33 inch-pounds (3.5 to 3.7 N·m).
  - (f) Remove ropes and clamps from stairway.
  - (g) Manually cycle stairway.
  - (h) If rollers (instead of sprockets) are installed on eccentrics (23), rotate eccentrics to obtain maximum height of rollers that will permit chain link fittings to ride over rollers without raising stair.
  - (i) With stairway extended, check for seating of forward and aft outer cam followers (15). If both cam followers (15) are seated in cams (16), no further adjustment is required. If one cam follower (15) is not properly seated, loosen adjacent nut (21) to reduce tension on chain.
  - (j) Manually retract stairway to within 6 inches (152.4 mm) of retract stops.

### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-00

Config 1  
Page 505  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (k) Tighten nut (21) on clevis (22) to adjust chain with reduced tension until both chains have equal deflection. Do not torque nut (21) on clevis (22) which has been readjusted.

NOTE: It is not required that both cam followers (15) be seated in pocket of cams (16), provided stairway operation is satisfactory.

- (5) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

#### B. Test Stairway

- (1) Check that dc transfer, battery direct, and ground service buses are energized. (PAGEBLOCK 24-00-00/501)

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-00

Config 1  
Page 506  
Feb 01/2016



## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Open these circuit breakers and install safety tags:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
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A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

**CAUTION:** TO PREVENT OVERHEATING STAIRWAY ACTUATORS, ALLOW MINIMUM OF 3 MINUTES BETWEEN EACH CYCLE (ONE EXTENSION AND RETRACTION) OF ACTUATOR, AND MAXIMUM OF 6 CYCLES IN ANY 18 MINUTE PERIOD. ALLOW 45 MINUTES BETWEEN PERIODS.

- (3) Position all switches and controls in their last designated position.

**NOTE:** The internal stairway and stairwell door controls will be used during stairway test unless noted otherwise.

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-00

Config 1  
Page 507  
Feb 01/2016



## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 502**

Operation	Procedure	Desired Results
(a) Close and lock passenger entrance door.	Attempt to unlatch stairwell door with internal and external stairwell door handles.	Stairwell door cannot be unlatched.
(b) Open passenger door.		
(c) Using internal handle, unlatch stairwell door.	Observe stairwell door. Check interlock fittings on door- jamb of passenger door.  Attempt to latch stairwell door.	Stairwell door springs open. Interlock pin is extended.  Handle locked in unlatched position.
(d) Attempt to lock passenger door.	Observe interlock and interlock arm on passenger door.	Interlock arm contacts interlock pin. Passenger door handle cannot be rotated to full locked position.
(e) Push stairwell door to closed position.  Using external handle, latch door.	Observe stairwell door.  Check interlock fitting on door- jamb of passenger door.	Door fairs with fuselage skin (within 1/2 inch (12.7 mm)).  Interlock pin is retracted.
(f) Using external handle, unlatch stairwell door.	Observe stairwell door. Attempt to latch stairwell door.	Stairwell door springs open. Handle locked in unlatched position.
(g) Open passenger door to latched open position (hold-open hook on passenger door engaged with fitting in fuselage).		
(h) Manually extend stair.	Observe Stairway.	Stair and carriage move freely without binding.
(i) Lock detent stop.	Check stairway.  Using bottom step, move stairs up and down.	Stair rests solidly on wheels and hand rails are stiffly attached with slight movement.  No perceivable loose movement of carriage.
(j) Actuate release lever in each actuator housing.	Manually extend each inner handrail until fully extended and released levers.	Handrails extend into doorway and locked in fully extended position.
<p><b>WARNING:</b> RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL.</p>		
(k) Extend each inner handrail slightly and actuate release lever in each actuator housing.	Extend and retract each inner handrail several times.	Safety cables maintain tension as handrails are extended and retracted.  Cables have some remaining travel when handrails are fully extended.  Handrails extend and retract with minimum effort and without binding.

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 508  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 502 (Continued)**

Operation	Procedure	Desired Results	
(l) With inner handrails fully retracted, unlock detent stop.			
(m) Raise stair by bottom step and push into stairwell as far as possible.	Observe Stairway.	Stair, carriage, and handrails move freely with no binding.	
(n) Push stairwell door to closed position, and using internal or external handle latch stairwell door.			
(o) Remove tags and close following circuit breakers:			
	Circuit Breakers	Panel Location	
	Panel Area		
	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS -1, -2	Lower EPC	DC TRANSFER BUS
	CONTROL	Lower EPC	DC TRANSFER BUS
	DOOR WARNING	Lower EPC	DC BUS, MISCELLANEOUS
	FWD PASSENGER ENTRANCE STAIRS LIGHTS	Left Console	GROUND SERVICE BUS.
	Observe annunciator panel.	Passenger door light comes on.	
(p) Using internal or external handle, unlatch stairwell door.	Observe attendant's panel. Observe annunciator panel.  Observe stairway.	Amber stairwell door light comes on. Stairwell door indication comes on.  Stairway lights comes on.	
(q) Place stairway control switch in extend position and release when stairway actuator motors stop.  Place stairway control switch in extend position and release when stairway acutator motors stop.	Observe stairway.  Check stairway.	Stair extends pushes stairwell door open and rotates downward until wheels contact ground.  Stair, carriage, and handrails move smoothly. Stair rests solidly on wheels and hand rails have no perceivable loose movement.	
(r) Actuate release lever in each actuator housing and fully extend inner handrails.	Check inner handrails.  Observe attendant's panel.	Handrails locked in extended position. Handrails extend into doorway.  Green stair down light comes on.	
(s) Place stairway control switch in retract position.	Observe stairway.	No movement of stairway.	
(t) Release stairway control switch.			

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 509  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

Table 502 (Continued)

Operation	Procedure	Desired Results
<p><b>WARNING:</b> RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL.</p>		
(u) Place stairway power switch (located in well of external stairway door latch handle) in off position.		
(v) Place stairway control switch in retract position.	Observe stairway.	No movement of stairway.
(w) Release stairway control switch.		
(x) Depress external stair up button.	Observe stairway.	No movement of stairway.
(y) Release external control button.		
(z) Place stairway power switch in normal position. Lock detent stop. Press external stair up button and hold.	Observe stairway.	Detent lock prevents carriage moving into shroud. Actuator motors shut off.
(aa) Release external stair up button, unlock detent stop, and place stairway control switch in retract position.	Observe stairway.	Stair, carriage, and handrails retract smoothly into stairwell. Stair pulls stair well door to within 1/2 inch (12.7 mm) of closed position.  Stairway actuator motors stop when stairwell door reaches this position.  Stair held in retracted position by actuator (solenoid, torque sensing mechanism, and motor brakes).
(ab) Release stairway control switch.	Observe stairway.	Stair held in retracted position by actuator (solenoid, torque sensing mechanism, and motor brakes).
(ac) Depress external stair down button until stairway actuator motors stop.	Observe stairway.	Stair extends, pushes stairwell door open, and rotates downward until wheels contact ground and handrails are erected.  Stair held in extended position by actuator (solenoid, torque sensing mechanism and motor brakes).
(ad) Depress external stair up button until actuator motors stop.	Observe stairway.	Stair, carriage, and handrails retract smoothly into stairwell.  Stair pulls stair well door to within 1/2 inch (12.7 mm) of closed position.  Stairway actuator motors stop when stairwell door reaches this position.

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-00**

Config 1  
Page 510  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 502 (Continued)**

Operation	Procedure	Desired Results
(ae) Using external handle, latch stairwell door.	Observe attendant's panel.  Observe annunciator panel.	Stairwell door amber light goes off.  Stairwell door indication goes off.
(af) Remove tags and close following circuit breakers:		
Circuit Breakers	Panel Location	Panel Area
FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS -1, -2	Overhead	BATT DIRECT BUS
CONTROL	Overhead	BATT DIRECT BUS.
(ag) Using external handle, unlatch stairwell door.		
<b>WARNING:</b> POWER SWITCH MUST BE HELD IN BATTERY POSITION, UNTIL STAIR IS FULLY EXTENDED OR FULLY RETRACTED, TO PREVENT STAIR FALLING FROM AN INTERMEDIATE POSITION.		
(ah) Place stairway power switch (located in well of external stairwell door latch handle) in battery position and hold.		
(ai) Place stairway control switch in extend position. Release switch when stairway actuator motors stop.	Observe stairway.	Stair extends pushes stairwell door open, and rotates downward until wheels contact ground and handrails are erected.
(aj) Place stairway control switch in retract position.	Observe stairway.	Stair, carriage, and handrails retract smoothly into stairwell.  Stair pulls stair well door to within 1/2 inch (12.7 mm) of closed position.
(ak) Place stairway control switch in retract position.		Stairway actuator motors stop when stairwell door reaches this position.
(al) Manually restrain stair well door and release stair way power switch.		
(am) Using external handle, latch stairwell door.		

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-00**

Config 1  
Page 511

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practice provides adjustment/test instructions for the passenger forward entrance door stairway. (Figure 501)
- B. Normally the stairway is adjusted before installation in the aircraft. However, some adjustment can be made and the functional test performed with the stairway installed. The adjustment procedures will enable maintenance personnel to correct minor defects in the stairway operation without removing the unit from the aircraft.
- C. For adjustment of stairwell door latch switches (FORWARD STAIRWELL DOOR LATCH MECHANISM - ADJUSTMENT/TEST, PAGEBLOCK 52-62-01/501). For adjustment of stairwell door warning switch FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-08/201 Config 1 or FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-08/201 Config 2

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Test set, Airstair, 5916818-1	Douglas Aircraft Co.
Torque wrench (0-100 inch pounds range)	Commercially available

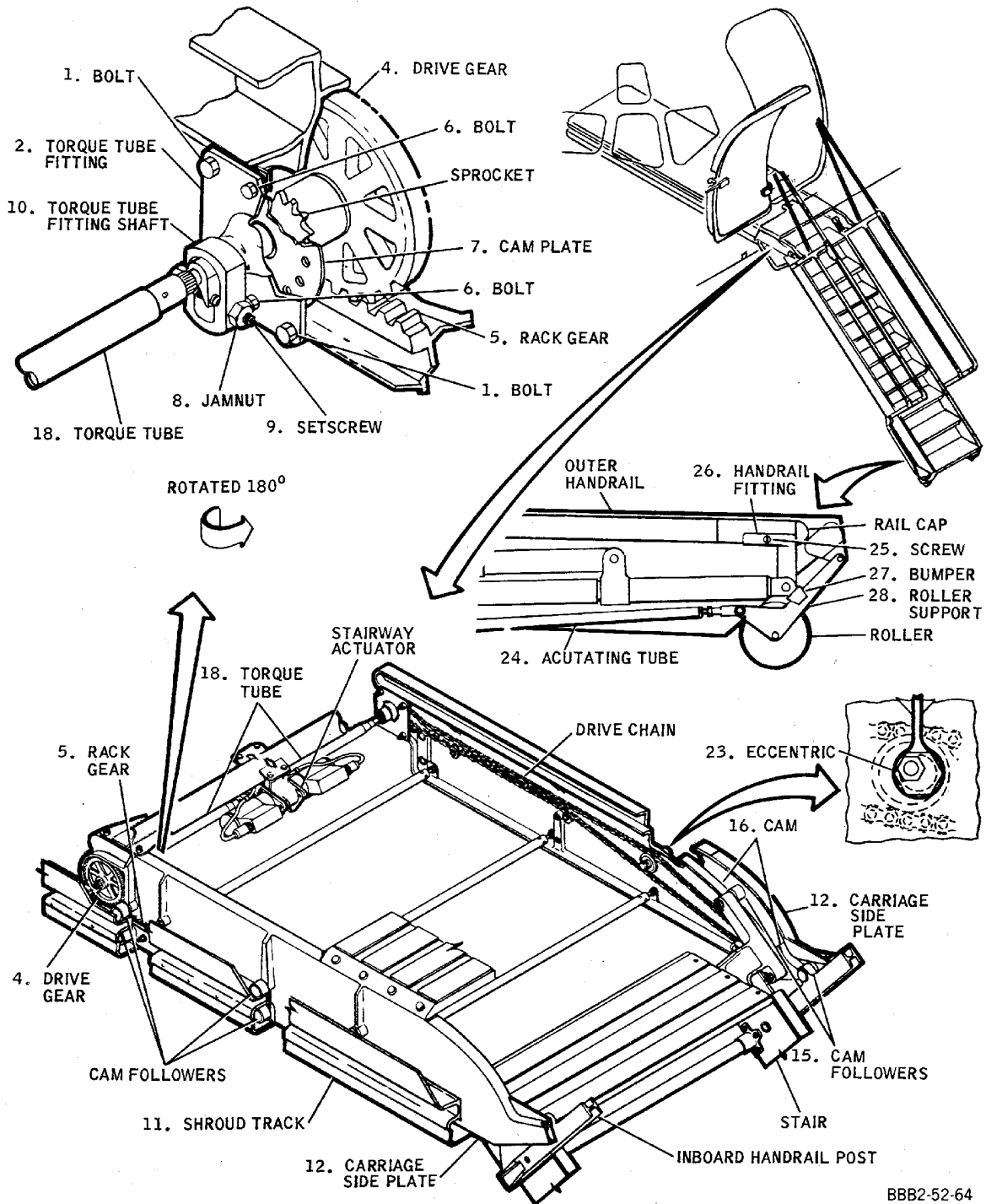
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 501  
Feb 01/2015

MD-80  
AIRCRAFT MAINTENANCE MANUAL



BBB2-52-64

Passenger Forward Entrance Door Stairway -- Adjustment  
Figure 501/52-61-00-990-809 (Sheet 1 of 2)

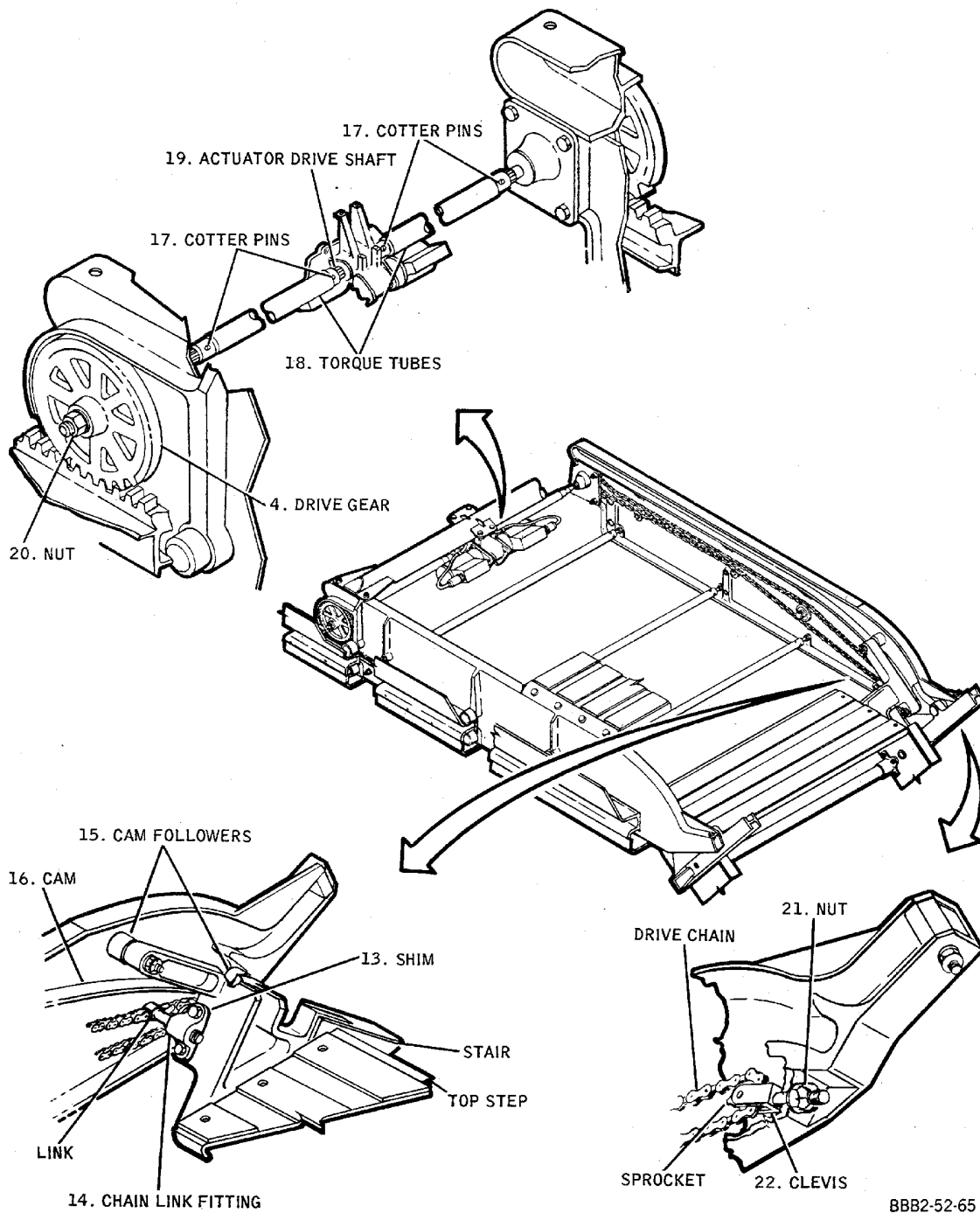
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

52-61-00

Config 2  
Page 502  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-65

**Passenger Forward Entrance Door Stairway -- Adjustment**  
Figure 501/52-61-00-990-809 (Sheet 2 of 2)

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

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**52-61-00**

Config 2  
Page 503  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Passenger Forward Entrance Door Stairway

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 501.

#### A. Adjust Stairway

NOTE: Provide a support (platform, planks, etc.), 86 3/4 inches (2203.5 mm) below the threshold of the forward entrance door, for the stair ground rollers when adjusting the stairway.

**WARNING:** MAKE CERTAIN THAT ALL STAIRWAY CONTROL CIRCUIT BREAKERS, LOCATED ON LOWER EPC AND OVERHEAD CIRCUIT BREAKER PANELS, ARE OPEN, TAGGED, AND SAFETIED WHEN ADJUSTING STAIRWAY.

**CAUTION:** HANDRAILS MUST BE PROPERLY ADJUSTED BEFORE RETRACTING STAIR TO PREVENT DAMAGE TO EQUIPMENT.

- (1) Open these circuit breakers and install safety tags:

#### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (2) Handrail Adjustment

- (a) Loosen attached screws (25) on handrail fittings (26). Do not remove screws.
- (b) Manually retract stair until horizontal.
- (c) Adjust actuating tube (24) to position ground roller 1/32 inch (0.79 mm) from bottom step of stair. Tighten jamnut on clevis.
- (d) Place each outboard handrail post in firm contact with bumper (27) and tighten accessible attach screws (25) on handrail fittings (26).
- (e) Manually extend stair and tighten remaining attach screws (25) on handrail fittings (26).

- (3) Carriage Adjustment

NOTE: Adjustment of the carriage consists of positioning the carriage parallel to the rack gears and tracks in the shroud.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 504  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (a) Remove cover in lower surface of shroud pan.
  - (b) Extend stairway approximately half-way out of shroud and support ladder end.
  - (c) Back off jamnuts (8) and loosen setscrews (9) on torque tube fitting shaft (10).
  - (d) Adjust torque tube fitting shaft (10) until carriage is parallel to rack gears (5) and shroud tracks (11).
  - (e) Manually cycle stairway and check that carriage remains approximately parallel to rack gears (5) and shroud tracks (11) throughout entire cycle.
  - (f) If carriage travel is not approximately parallel through-out cycle, check rack gears (5), drive gears (4), and shroud tracks (11) for foreign material or distortion. Clean or repair as necessary and repeat step (d) until proper carriage travel is obtained.
  - (g) Check that setscrews (9) are tightened. Torque jamnuts (8) 30 to 40 inch-pounds (3.4 to 4.5 N·m).
- (4) Stairway Chain Tension Adjustment
- (a) Manually extend stair until ground rollers contact support.  
Reference NOTE (Paragraph 3.A.)
  - (b) Stand on lower step of stair and push handrails toward aircraft until carriage cam follower is engaged in detent stop.
  - (c) Clamp carriage in the fully extended position and tie outboard handrail posts to center stair step with ropes.
  - (d) Check that eccentrics (23) are rotated approximately 60 degrees inboard from top dead center.
  - (e) Tighten nut (21) on each clevis (22). Torque nut 31 to 33 inch-pounds (3.5 to 3.7 N·m).
  - (f) Remove ropes and clamps from stairway.
  - (g) Manually cycle stairway.
  - (h) If rollers (instead of sprockets) are installed on eccentrics (23), rotate eccentrics to obtain maximum height of rollers that will permit chain link fittings to ride over rollers without raising stair.
  - (i) With stairway extended, check for seating of forward and aft outer cam followers (15). If both cam followers (15) are seated in cams (16), no further adjustment is required. If one cam follower (15) is not properly seated, loosen adjacent nut (21) to reduce tension on chain.
  - (j) Manually retract stairway to within 6 inches (152.4 mm) of retract stops.
  - (k) Tighten nut (21) on clevis (22) to adjust chain with reduced tension until both chains have equal deflection. Do not torque nut (21) on clevis (22) which has been readjusted.
- NOTE: It is not required that both cam followers (15) be seated in pocket of cams (16), provided stairway operation is satisfactory.
- (5) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 505  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

#### B. Test Stairway

- (1) Check that dc transfer, battery direct, and ground service buses are energized. (PAGEBLOCK 24-00-00/501)

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Open these circuit breakers and install safety tags:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

# 52-61-00

Config 2  
Page 506  
Feb 01/2015

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

(Continued)

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

**CAUTION:** TO PREVENT OVERHEATING STAIRWAY ACTUATORS, ALLOW MINIMUM OF 3 MINUTES BETWEEN EACH CYCLE (ONE EXTENSION AND RETRACTION) OF ACTUATOR, AND MAXIMUM OF 6 CYCLES IN ANY 18 MINUTE PERIOD. ALLOW 45 MINUTES BETWEEN PERIODS.

(3) Position all switches and controls in their last designated position.

**NOTE:** The internal stairway and stairwell door controls will be used during stairway test unless noted otherwise.

**Table 502**

	<b>Operation</b>	<b>Procedure</b>	<b>Desired Results</b>
(a)	Close and lock passenger entrance door.	Attempt to unlatch stairwell door with internal and external stairwell door handles.	Stairwell door cannot be unlatched.
(b)	Open passenger door.		
(c)	Using internal handle, unlatch stairwell door.	Observe stairwell door. Check interlock fittings on door- jamb of passenger door.  Attempt to latch stairwell door.	Stairwell door springs open. Interlock pin is extended.  Handle locked in unlatched position.
(d)	Attempt to lock passenger door.	Observe interlock and interlock arm on passenger door.	Interlock arm contacts interlock pin. Passenger door handle cannot be rotated to full locked position.
(e)	Push stairwell door to closed position.  Using external handle, latch door.	Observe stairwell door.  Check interlock fitting on door- jamb of passenger door.	Door fairs with fuselage skin (within 1/2 inch (12.7 mm)).  Interlock pin is retracted.
(f)	Using external handle, unlatch stairwell door.	Observe stairwell door. Attempt to latch stairwell door.	Stairwell door springs open. Handle locked in unlatched position.
(g)	Open passenger door to latched open position (hold-open hook on passenger door engaged with fitting in fuselage).		
(h)	Manually extend stair.	Observe Stairway.	Stair and carriage move freely without binding.
(i)	Lock detent stop.	Check stairway.  Using bottom step, move stairs up and down.	Stair rests solidly on wheels and hand rails are stiffly attached with slight movement.  No perceivable loose movement of carriage.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 507  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 502 (Continued)**

Operation	Procedure	Desired Results
(j) Actuate release lever in each actuator housing.	Manually extend each inner handrail until fully extended and released levers.	Handrails extend into doorway and locked in fully extended position.
<p><b>WARNING:</b> RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.</p>		
(k) Extend each inner handrail slightly and actuate release lever in each actuator housing.	Extend and retract each inner handrail several times.	<p>Safety cables maintain tension as handrails are extended and retracted.</p> <p>Cables have some remaining travel when handrails are fully extended.</p> <p>Handrails extend and retract with minimum effort and without binding.</p>
(l) With inner handrails fully retracted, unlock detent stop.		
(m) Raise stair by bottom step and push into stairwell as far as possible.	Observe Stairway.	Stair, carriage, and handrails move freely with no binding.
(n) Push stairwell door to closed position, and using internal or external handle latch stairwell door.		
(o) Remove tags and close following circuit breakers:		
Circuit Breakers	Panel Location	Panel Area
FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS -1, -2	Lower EPC	DC TRANSFER BUS
CONTROL	Lower EPC	DC TRANSFER BUS
DOOR WARNING	Lower EPC	DC BUS, MISCELLANEOUS
FWD PASSENGER ENTRANCE STAIRS LIGHTS	Left Console	GROUND SERVICE BUS.
	Observe annunciator panel.	Passenger door light comes on.
(p) Using internal or external handle, unlatch stairwell door.	<p>Observe attend- ant's panel. Observe annunciator panel.</p> <p>Observe stairway.</p>	<p>Amber stairwell door light comes on. Stairwell door indication comes on.</p> <p>Stairway lights comes on.</p>
(q) Place stairway control switch in extend position and release when stairway actuator motors stop.	Observe stairway.	Stair extends pushes stairwell door open and rotates downward until wheels contact ground.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 508  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 502 (Continued)**

Operation	Procedure	Desired Results
Place stairway control switch in extend position and release when stairway acuator motors stop.	Check stairway.	Stair, carriage, and handrails move smoothly. Stair rests solidly on wheels and hand rails have no perceivable loose movement.
(r) Actuate release lever in each actuator housing and fully extend inner handrails.	Check inner handrails.  Observe attendant's panel.	Handrails locked in extended position. Handrails extend into doorway.  Green stair down light comes on.
(s) Place stairway control switch in retract position.	Observe stairway.	No movement of stairway.
(t) Release stairway control switch.		
<p><b>WARNING:</b> RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.</p>		
(u) Place stairway power switch (located in well of external stairway door latch handle) in off position.		
(v) Place stairway control switch in retract position.	Observe stairway.	No movement of stairway.
(w) Release stairway control switch.		
(x) Depress external stair up button.	Observe stairway.	No movement of stairway.
(y) Release external control button.		
(z) Place stairway power switch in normal position. Lock detent stop. Press external stair up button and hold.	Observe stairway.	Detent lock prevents carriage moving into shroud. Actuator motors shut off.
(aa) Release external stair up button, unlock detent stop, and place stairway control switch in retract position.	Observe stairway.	Stair, carriage, and handrails retract smoothly into stairwell. Stair pulls stair well door to within 1/2 inch (12.7 mm) of closed position.  Stairway actuator motors stop when stairwell door reaches this position.  Stair held in retracted position by actuator (solenoid, torque sensing mechanism, and motor brakes).
(ab) Release stairway control switch.	Observe stairway.	Stair held in retracted position by actuator (solenoid, torque sensing mechanism, and motor brakes).

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 509  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

Table 502 (Continued)

Operation	Procedure	Desired Results
(ac) Depress external stair down button until stairway actuator motors stop.	Observe stairway.	Stair extends, pushes stairwell door open, and rotates downward until wheels contact ground and handrails are erected.  Stair held in extended position by actuator (solenoid, torque sensing mechanism and motor brakes).
(ad) Depress external stair up button until actuator motors stop.	Observe stairway.	Stair, carriage, and handrails retract smoothly into stairwell.  Stair pulls stair well door to within 1/2 inch (12.7 mm) of closed position.  Stairway actuator motors stop when stairwell door reaches this position.
(ae) Using external handle, latch stairwell door.	Observe attendant's panel.	Stairwell door amber light goes off.
	Observe annunciator panel.	Stairwell door indication goes off.
(af) Remove tags and close following circuit breakers:		
Circuit Breakers	Panel Location	Panel Area
FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS -1, -2	Overhead	BATT DIRECT BUS
CONTROL	Overhead	BATT DIRECT BUS.
(ag) Using external handle, unlatch stairwell door.		
<b>WARNING:</b> WHEN STAIRWAY IS OPERATED BY BATTERY POWER, POWER SWITCH MUST BE HELD IN BATTERY POSITION UNTIL STAIR IS FULLY EXTENDED OR FULLY RETRACTED TO PREVENT STAIR FALLING FROM AN INTERMEDIATE POSITION.		
(ah) Place stairway power switch (located in well of external stairwell door latch handle) in battery position and hold.		
(ai) Place stairway control switch in extend position. Release switch when stairway actuator motors stop.	Observe stairway.	Stair extends pushes stairwell door open, and rotates downward until wheels contact ground and handrails are erected.
(aj) Place stairway control switch in retract position.	Observe stairway.	Stair, carriage, and handrails retract smoothly into stairwell.  Stair pulls stair well door to within 1/2 inch (12.7 mm) of closed position.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-00**

Config 2  
Page 510  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 502 (Continued)**

Operation	Procedure	Desired Results
(ak) Place stairway control switch in retract position.		Stairway actuator motors stop when stairwell door reaches this position.
(al) Manually restrain stair well door and release stair way power switch.		
(am) Using external handle, latch stairwell door.		

**EFFECTIVITY**  
**WJE 412, 414; ALL, with Airstairs Installed**

TP-80MM-WJE

**52-61-00**

Config 2  
Page 511  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger forward entrance door stairway actuator. (Figure 401)
- B. The actuator is installed on the stairway carriage. To gain access to the actuator the access panel located in the lower surface of the stairway shroud pan must be removed. The panel is accessible from the electrical/electronics compartment.
- C. The removal/installation of the stairway carriage actuator can be accomplished without rerigging, provided the recommended procedures are followed, except as noted in Paragraph 3.B.(7) and Paragraph 3.B.(8).

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 401**

Name and Number	Manufacturer
Torque wrench (0-100 inch pounds range)	Commercially available

#### 3. Removal/Installation Passenger Forward Entrance Door Stairway Actuator

- A. Remove Actuator

**WARNING:** SUPPORT LADDER END OF STAIR TO PREVENT STAIR FROM FALLING WHEN ELECTRICAL POWER IS REMOVED.

- (1) Extend stairway until actuator is centered above access panel in lower surface of shroud pan (approximately one half way).

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Open these circuit breakers and install safety tags:

**LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-01**

Config 1  
Page 401  
Feb 01/2016



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- (3) Remove access panel in lower surface of stairway shroud pan.
- (4) Disconnect electrical connector (P1-299) from actuator.
- (5) Remove cotter pins from actuator torque tubes.
- (6) Slide torque tubes off actuator drive shaft.
- (7) Remove actuator attach bolts.
- (8) Remove actuator from shroud.

#### B. Install Actuator

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-01

Config 1  
Page 402  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### **WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

- (2) Check that stairway is in position. (Paragraph 3.A.(1))
- (3) Position actuator on carriage and install attach bolts.
- (4) Connect electrical connector to actuator.
- (5) Rotate actuator drive shaft to align drive shaft splines with splines in torque tubes.
- (6) Slide torque tubes over ends of drive shaft and install cotter pins.
- (7) Check that carriage is parallel to rack gears. If carriage is properly aligned, proceed with Paragraph 3.B.(9). If adjustment is necessary, proceed with next step.
- (8) Loosen setscrews on forward torque tube fitting shaft and rotate setscrews as necessary to align carriage parallel to rack gears. Torque jamnuts 30 to 40 inch-pounds (3.4 to 4.5 N·m).
- (9) Remove support from ladder end of stairway.
- (10) Manually operate stairway to check proper alignment of carriage.
- (11) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-01

Config 1  
Page 403  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

- (12) Operate stairway electrically to check that actuator is operating satisfactorily.  
(PAGEBLOCK 52-61-01/501 Config 1)

**EFFECTIVITY**

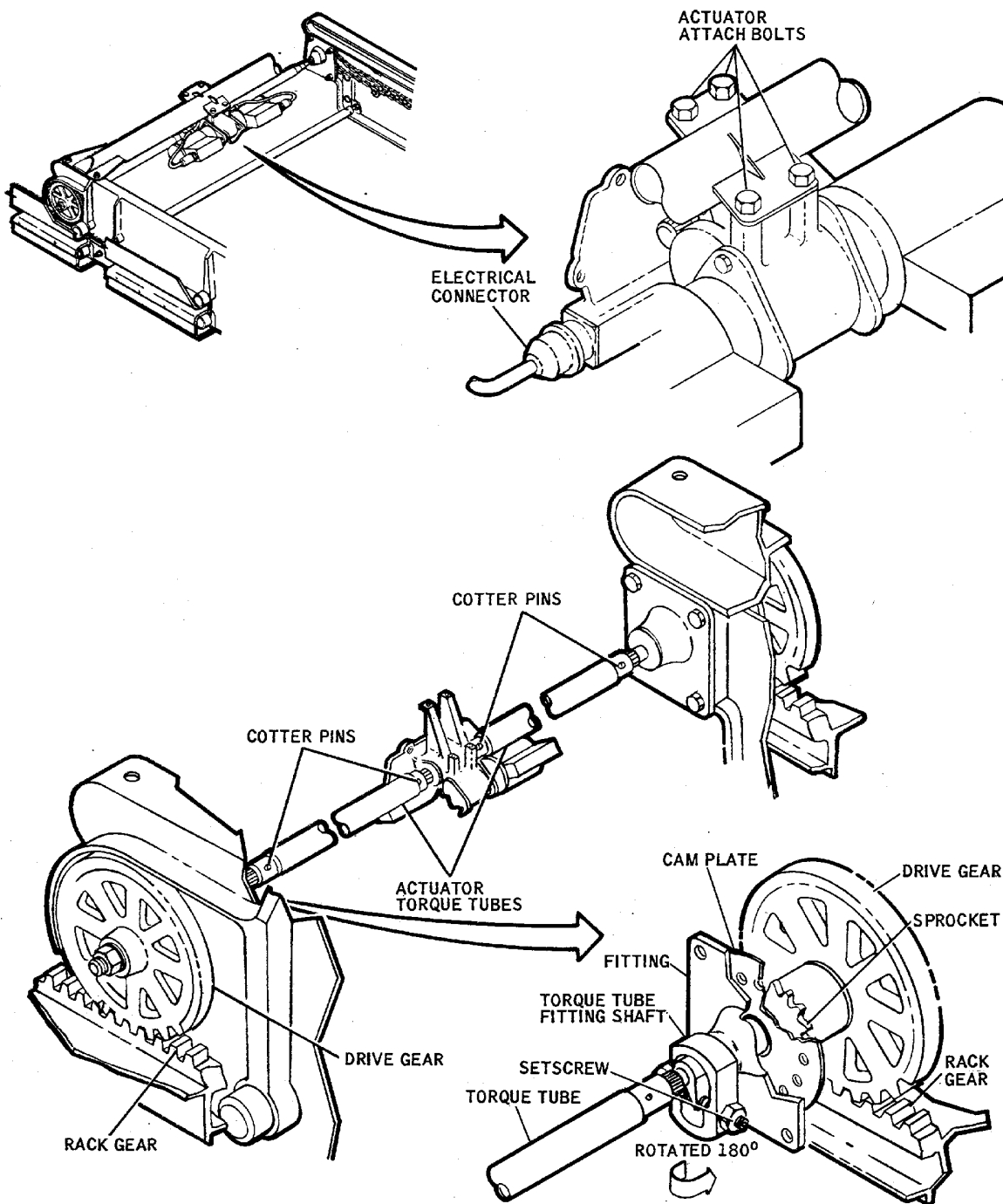
**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-01**

Config 1  
Page 404  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-66

**Passenger Forward Entrance Door Stairway Actuator -- Installation  
Figure 401/52-61-01-990-801**

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-01**

Config 1  
Page 405  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger forward entrance door stairway actuator. (Figure 401)
- B. The actuator is installed on the stairway carriage. To gain access to the actuator the access panel located in the lower surface of the stairway shroud pan must be removed. The panel is accessible from the electrical/electronics compartment.
- C. The removal/installation of the stairway carriage actuator can be accomplished without rerigging, provided the recommended procedures are followed, except as noted in Paragraph 3.B.(7) and Paragraph 3.B.(8).

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 401**

Name and Number	Manufacturer
Torque wrench (0-100 inch pounds range)	Commercially available

#### 3. Removal/Installation Passenger Forward Entrance Door Stairway Actuator

- A. Remove Actuator

**WARNING:** SUPPORT LADDER END OF STAIR TO PREVENT STAIR FROM FALLING WHEN ELECTRICAL POWER IS REMOVED.

- (1) Extend stairway until actuator is centered above access panel in lower surface of shroud pan (approximately one half way).

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Open these circuit breakers and install safety tags:

**LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

EFFECTIVITY <b>WJE 412, 414; ALL, with Airstairs Installed</b>
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TP-80MM-WJE

# 52-61-01

Config 2  
Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (3) Remove access panel in lower surface of stairway shroud pan.
- (4) Disconnect electrical connector (P1-299) from actuator.
- (5) Remove cotter pins from actuator torque tubes.
- (6) Slide torque tubes off actuator drive shaft.
- (7) Remove actuator attach bolts.
- (8) Remove actuator from shroud.

#### B. Install Actuator

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (2) Check that stairway is in position. (Paragraph 3.A.(1))
- (3) Position actuator on carriage and install attach bolts.
- (4) Connect electrical connector to actuator.
- (5) Rotate actuator drive shaft to align drive shaft splines with splines in torque tubes.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

# 52-61-01

Config 2  
Page 402  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (6) Slide torque tubes over ends of drive shaft and install cotter pins.
- (7) Check that carriage is parallel to rack gears. If carriage is properly aligned, proceed with Paragraph 3.B.(9). If adjustment is necessary, proceed with next step.
- (8) Loosen setscrews on forward torque tube fitting shaft and rotate setscrews as necessary to align carriage parallel to rack gears. Torque jamnuts 30 to 40 inch-pounds (3.4 to 4.5 N·m).
- (9) Remove support from ladder end of stairway.
- (10) Manually operate stairway to check proper alignment of carriage.
- (11) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (12) Operate stairway electrically to check that actuator is operating satisfactorily. (PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST, PAGEBLOCK 52-61-01/501 Config 2)

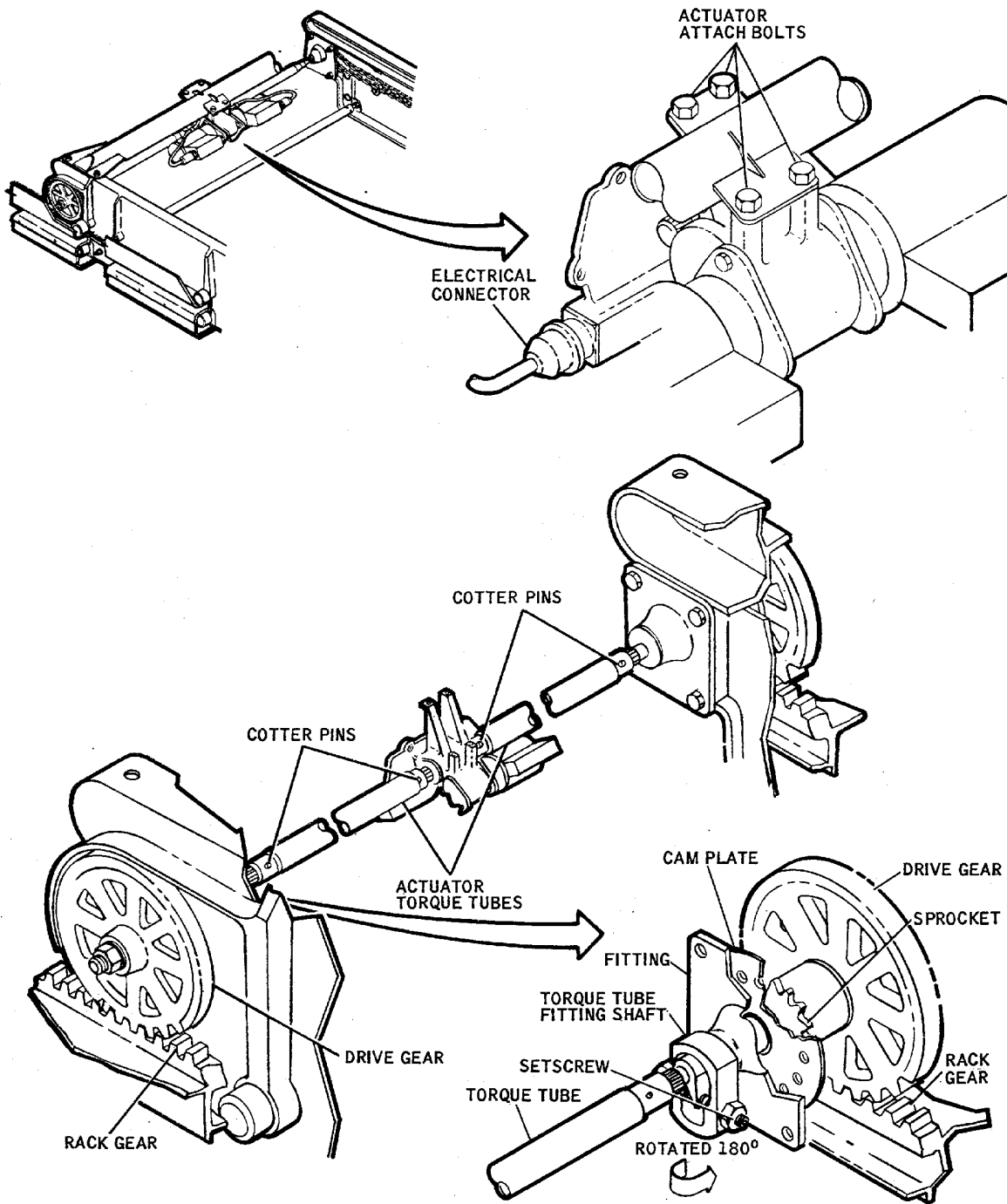
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

# 52-61-01

Config 2  
Page 403  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-66

**Passenger Forward Entrance Door Stairway Actuator -- Installation**  
Figure 401/52-61-01-990-802

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-01**

Config 2  
Page 404  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST

**1. General**

A. This maintenance practice provides adjustment/test instructions for the passenger forward entrance door stairway actuator.

**2. Adjustment/Test Passenger Forward Entrance Door Stairway Actuator**

A. Test Actuator

- (1) Verify that dc transfer bus is energized. (PAGEBLOCK 24-00-00/501)
- (2) Make sure that these circuit breakers are closed:

**LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

**WJE 410**

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

**WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

**WJE 410**

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

**Table 501**

	<b>Operation</b>	<b>Procedure</b>	<b>Desired Results</b>
(a)	Unlatch stairwell door.		

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-01**

Config 1  
Page 501  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 501 (Continued)**

	Operation	Procedure	Desired Results
(b)	Open passenger door and engage hold-open hook.		
(c)	Depress stairway down (extend) external control button. Release button when actuator motors stop.	Observe stairway.	Stairway extends, pushes stairwell door open and rotates downward until rollers contact ground.
			Actuator motors stop when carriage cam followers contact stops on shroud tracks.
			Stairs, carriage, and handrails move smoothly.
		Check stairway.	Stairs rest solidly on their rollers, and handrails have no perceivable loose movement.
(d)	Place stairway power switch (located in well of external stairwell door latch handle) in off position.		
(e)	Raise stairs with bottom step and push stairway as far as possible into stairwell.	Observe stairway and check that actuator is in a free wheeling condition.	Stairs, carriage, and handrails move freely without binding. Actuator allows stairway to move freely with no appreciable drag.
(f)	Pull stairway to down (extended) position.	Observe stairway and check that actuator is in a free wheeling condition.	Stairs, carriage, and handrails move freely without binding. Actuator allows stairway to move freely with no appreciable drag.
(g)	Place stairway power switch in normal position.		
(h)	Depress and hold stairway up (retract) external control button.	Observe stairway.	Stairs, carriage, and handrails retract smoothly into stairwell.
			Stairway pulls stairwell door to latching position. Stairway actuator motors stop when stairwell door is in latching position.
(i)	Release stairway up (retract) external control button.		
(j)	Using external handle latch stairwell door.		

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-01**

Config 1  
Page 502  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY ACTUATOR - ADJUSTMENT/TEST

**1. General**

A. This maintenance practice provides adjustment/test instructions for the passenger forward entrance door stairway actuator.

**2. Adjustment/Test Passenger Forward Entrance Door Stairway Actuator**

A. Test Actuator

- (1) Verify that dc transfer bus is energized. (PAGEBLOCK 24-00-00/501)
- (2) Make sure that these circuit breakers are closed:

**LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

**Table 501**

	<b>Operation</b>	<b>Procedure</b>	<b>Desired Results</b>
(a)	Unlatch stairwell door.		
(b)	Open passenger door and engage hold-open hook.		
(c)	Depress stairway down (extend) external control button. Release button when actuator motors stop.	Observe stairway.	Stairway extends, pushes stairwell door open and rotates downward until rollers contact ground.
			Actuator motors stop when carriage cam followers contact stops on shroud tracks.
			Stairs, carriage, and handrails move smoothly.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-01**

Config 2  
Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 501 (Continued)**

	Operation	Procedure	Desired Results
		Check stairway.	Stairs rest solidly on their rollers, and handrails have no perceivable loose movement.
(d)	Place stairway power switch (located in well of external stairwell door latch handle) in off position.		
(e)	Raise stairs with bottom step and push stairway as far as possible into stairwell.	Observe stairway and check that actuator is in a free wheeling condition.	Stairs, carriage, and handrails move freely without binding. Actuator allows stairway to move freely with no appreciable drag.
(f)	Pull stairway to down (extended) position.	Observe stairway and check that actuator is in a free wheeling condition.	Stairs, carriage, and handrails move freely without binding. Actuator allows stairway to move freely with no appreciable drag.
(g)	Place stairway power switch in normal position.		
(h)	Depress and hold stairway up (retract) external control button.	Observe stairway.	Stairs, carriage, and handrails retract smoothly into stairwell.
			Stairway pulls stair well door to latching position. Stairway actuator motors stop when stairwell door is in latching position.
(i)	Release stairway up (retract) external control button.		
(j)	Using external handle latch stairwell door.		

**EFFECTIVITY**  
**WJE 412, 414; ALL, with Airstairs Installed**

TP-80MM-WJE

**52-61-01**

Config 2  
Page 502  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - REMOVAL/ INSTALLATION

#### 1. General

- A. This maintenance practices provides removal/installation instructions for the passenger forward entrance door stairway handrail actuator. (Figure 401)
- B. Each handrail actuator is an integral part of the top handrail and both are removed as a unit. To remove the actuator, the stairway must be extended.

#### 2. Removal/Installation Passenger Forward Entrance Door Stairway Handrail Actuator

- A. Remove Actuator

- (1) Extend stairway.
- (2) Secure stairway.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (3) Open these circuit breakers and install safety tags:

#### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

## 52-61-02

Config 1  
Page 401  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(Continued)

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

- (4) Disconnect safety cable from inner handrail.
- (5) Remove hinge pin cover plate from actuator.
- (6) Remove setscrew securing inboard hinge pin.
- (7) Remove inboard hinge pin.
- (8) Disconnect electrical connector from actuator.
- (9) Remove setscrew securing hinge pin in fitting at outboard end of top handrail.

**CAUTION:** EXERCISE CARE WHEN REMOVING PINS TO PREVENT MARRING HANDRAIL AND FITTINGS.

- (10) Remove outboard hinge pin.
- (11) Remove top handrail and actuator as unit.

B. Install Actuator

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL

**EFFECTIVITY**

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-02

Config 1  
Page 402  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(Continued)

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

### WJE 410

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

### WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
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### WJE 410

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

- (2) Position handrail on handrail posts and install hinge pins.
- (3) Install hinge pin setscrews.
- (4) Connect electrical connector to actuator.
- (5) Install hinge pin cover plate.
- (6) Connect safety cable to inner handrail.

**CAUTION:** DO NOT REMOVE SCREWS AS NUTPLATES WILL COME OFF IN TUBE REQUIRING REMOVAL OF RAIL CAP TO INSTALL.

- (7) Loosen handrail fitting attaching screws.
- (8) Release and retract stairway part way into stairwell.
- (9) Slide outer handrail until handrail is firmly contacting bumper on ground roller support.
- (10) Tighten handrail fitting attaching screws.
- (11) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

# 52-61-02

Config 1  
Page 403  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

(12) Test actuator operation (PAGEBLOCK 52-61-02/501 Config 1).

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

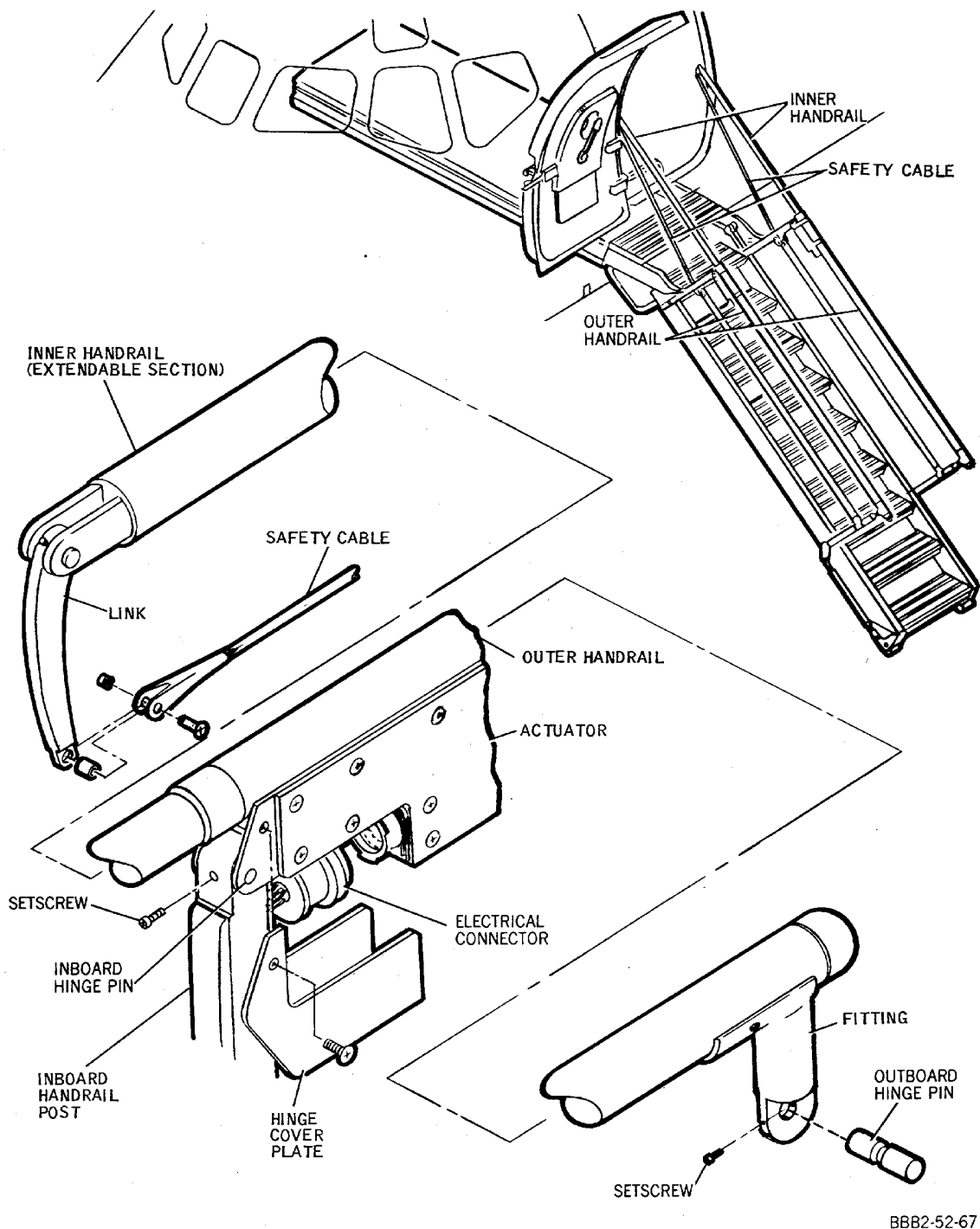
TP-80MM-WJE

**52-61-02**

Config 1  
Page 404  
Feb 01/2016



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Stairway Handrail Actuator -- Installation  
Figure 401/52-61-02-990-801**

EFFECTIVITY  
WJE 401-411, 415-427, 429, 861-866, 868, 869,  
871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

**52-61-02**

Config 1  
Page 405  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - REMOVAL/ INSTALLATION

### 1. General

- A. This maintenance practices provides removal/installation instructions for the passenger forward entrance door stairway handrail actuator. (Figure 401)
- B. Each handrail actuator is an integral part of the top handrail and both are removed as a unit. To remove the actuator, the stairway must be extended.

### 2. Removal/Installation Passenger Forward Entrance Door Stairway Handrail Actuator

#### A. Remove Actuator

- (1) Extend stairway.
- (2) Secure stairway.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (3) Open these circuit breakers and install safety tags:

#### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (4) Disconnect safety cable from inner handrail.
- (5) Remove hinge pin cover plate from actuator.
- (6) Remove setscrew securing inboard hinge pin.
- (7) Remove inboard hinge pin.
- (8) Disconnect electrical connector from actuator.
- (9) Remove setscrew securing hinge pin in fitting at outboard end of top handrail.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-02**

Config 2  
Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** EXERCISE CARE WHEN REMOVING PINS TO PREVENT MARRING HANDRAIL AND FITTINGS.

- (10) Remove outboard hinge pin.
- (11) Remove top handrail and actuator as unit.

B. Install Actuator

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

**LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

**LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (2) Position handrail on handrail posts and install hinge pins.
- (3) Install hinge pin setscrews.
- (4) Connect electrical connector to actuator.
- (5) Install hinge pin cover plate.
- (6) Connect safety cable to inner handrail.
- (7) Loosen handrail fitting attaching screws.
- (8) Release and retract stairway part way into stairwell.
- (9) Slide outer handrail until handrail is firmly contacting bumper on ground roller support.
- (10) Tighten handrail fitting attaching screws.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-02**

Config 2  
Page 402  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (11) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (12) Test actuator operation (PAGEBLOCK 52-61-02/501 Config 2).

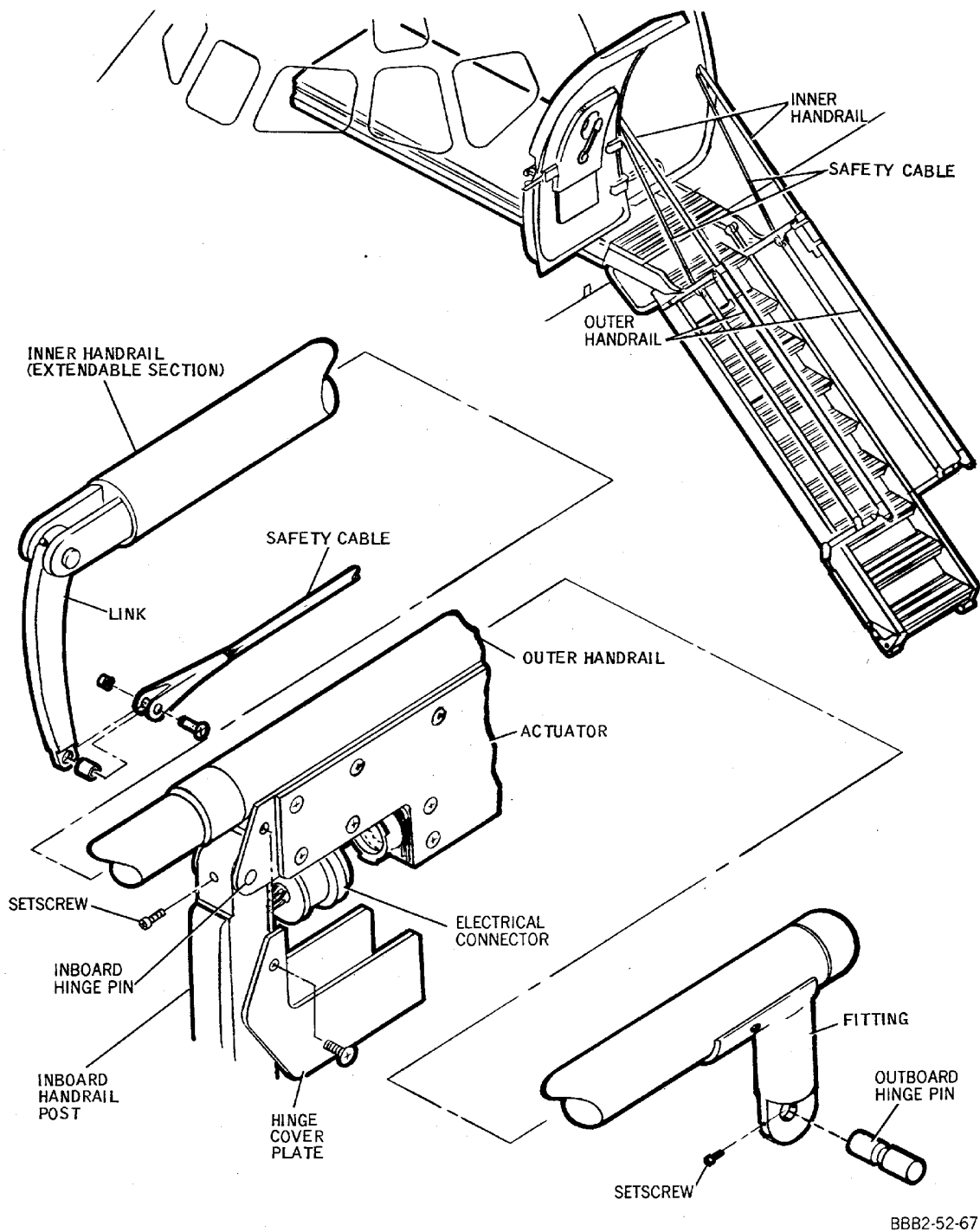
EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

# 52-61-02

Config 2  
Page 403  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Forward Entrance Door Stairway Handrail Actuator -- Installation  
Figure 401/52-61-02-990-802**

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-02**

Config 2  
Page 404  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practices provides adjustment/test instructions for the passenger forward entrance door stairway handrail actuators.
- B. The procedures provided in this section are for testing the operation of the forward stairway handrail actuators. The forward and aft actuators are identical. If the desired result is not obtained when an operation is performed, the actuator is defective and should be repaired or replaced.

#### 2. Adjustment/Test Passenger Forward Entrance Door Stairway Handrail Actuator

##### A. Test Actuator

- (1) Make sure that these circuit breakers are closed:

##### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

##### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

##### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

##### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

##### **WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

- (2) With passenger forward entrance door latched open, stairway extended, and opposite inner handrail extended and locked, perform following operations:

#### EFFECTIVITY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

## 52-61-02

Config 1  
Page 501  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

Table 501

Operation	Desired Results
(a) Open access door on actuator and actuate locking lever. Fully extend inner handrail and release locking lever.	Handrail extend without binding and locks in fully extended position.  Green stair down light located on forward attendant's panel is illuminated.
<b>WARNING:</b> MAKE CERTAIN THAT ALL PERSONNEL ARE CLEAR OF STAIRWAY BEFORE PLACING STAIRWAY CONTROL SWITCH IN RETRACT POSITION TO AVOID INJURY TO PERSONNEL.	
(b) Retract and lock opposite inner handrail. Momentarily place stairway control switch in retract position.	Green stair down light is not illuminated.  No movement of stairway.
(c) Extend and lock opposite inner handrail.	Green stair down light is illuminated.
<b>WARNING:</b> RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.	
(d) Extend inner handrail slightly, actuate locking lever, retract inner handrail, and release locking lever.	Handrail retracts without binding.  Safety cable retracts smoothly into lower handrail and retains tension as handrail is retracted.  Inner handrail is locked in fully retracted position.  Green stair down light is not illuminated.
(e) Retract opposite inner handrail.	Inner handrail is locked in fully retracted position.
(f) Place stairway control switch in retract position.	Stairway retracts into stairwell until fully retracted.
(g) Latch stairwell door.	

**EFFECTIVITY**

**WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

TP-80MM-WJE

**52-61-02**

Config 1  
Page 502  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER FORWARD ENTRANCE DOOR STAIRWAY HANDRAIL ACTUATOR - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practices provides adjustment/test instructions for the passenger forward entrance door stairway handrail actuators.
- B. The procedures provided in this section are for testing the operation of the forward stairway handrail actuators. The forward and aft actuators are identical. If the desired result is not obtained when an operation is performed, the actuator is defective and should be repaired or replaced.

#### 2. Adjustment/Test Passenger Forward Entrance Door Stairway Handrail Actuator

##### A. Test Actuator

- (1) Make sure that these circuit breakers are closed:

##### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

##### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

##### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

##### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

- (2) With passenger forward entrance door latched open, stairway extended, and opposite inner handrail extended and locked, perform following operations:

**Table 501**

Operation	Desired Results
(a) Open access door on actuator and actuate locking lever. Fully extend inner handrail and release locking lever.	Handrail extend without binding and locks in fully extended position.  Green stair down light located on forward attendant's panel is illuminated.

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

## 52-61-02

Config 2  
Page 501  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 501 (Continued)**

Operation	Desired Results
<p><b>WARNING:</b> MAKE CERTAIN THAT ALL PERSONNEL ARE CLEAR OF STAIRWAY BEFORE PLACING STAIRWAY CONTROL SWITCH IN RETRACT POSITION TO AVOID INJURY TO PERSONNEL.</p>	
<p>(b) Retract and lock opposite inner handrail. Momentarily place stairway control switch in retract position.</p>	<p>Green stair down light is not illuminated.</p> <p>No movement of stairway.</p>
<p>(c) Extend and lock opposite inner handrail.</p>	<p>Green stair down light is illuminated.</p>
<p><b>WARNING:</b> RESTRAIN INNER HANDRAILS FROM RETRACTING RAPIDLY. DURING LAST TWO FEET OF RETRACTION, KEEP FINGERS FROM BENEATH HANDRAIL AND RESTRAIN HANDRAIL BY HOLDING END FITTING (BANANA LINK). FAILURE TO COMPLY MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.</p>	
<p>(d) Extend inner handrail slightly, actuate locking lever, retract inner handrail, and release locking lever.</p>	<p>Handrail retracts without binding.</p> <p>Safety cable retracts smoothly into lower handrail and retains tension as handrail is retracted.</p> <p>Inner handrail is locked in fully retracted position.</p> <p>Green stair down light is not illuminated.</p>
<p>(e) Retract opposite inner handrail.</p>	<p>Inner handrail is locked in fully retracted position.</p>
<p>(f) Place stairway control switch in retract position.</p>	<p>Stairway retracts into stairwell until fully retracted.</p>
<p>(g) Latch stairwell door.</p>	

EFFECTIVITY  
WJE 412, 414; ALL, with Airstairs Installed

TP-80MM-WJE

**52-61-02**

Config 2  
Page 502  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD STAIRWELL DOOR - DESCRIPTION AND OPERATION

#### 1. General

- A. The forward stairwell door is located directly below the passenger forward entrance door. When closed, the door closes the opening in the side of the fuselage for the passenger forward entrance door stairway.

#### 2. Forward Stairwell Door

##### A. Description

- (1) The stairwell door consists of a pan covered by an outer skin, a link, rollers, shield, roller supports, and clevis rods. The link, attached to roller supports on door and installed through supports on doorjamb, limits the opening angle of the door. The rollers are located in the center of the door adjacent to the door hinge. As the stairway retracts, a hook mounted on the bottom step is inserted between the rollers closing the door. The shield guides the hook between the rollers. The clevis rods are engaged by the door-latching mechanism to hold the door closed. The clevis rods also provide the means to fair the door with the fuselage.
- (2) Latch Mechanism - The latch mechanism actuates hooks to latch and unlatch the stairwell door. The mechanism consists of a torque tube, cranks, levers, links, cam followers, and the latch hooks. The cranks are installed on the torque tube, and are connected to the latch hooks by the levers and links. The cam followers are installed on the links and are guided by cams installed on the aircraft structure. When either stairwell door latch control handle is actuated, the torque tube is rotated by control rods and linkage attached to the handles and the torque tube. As the torque tube rotates, the cranks on the torque tube move the levers, which are connected to the cam follower links. As the levers move the cam follower links, the cam followers are guided by the cams, to rotate the latch hooks outward and upward to unlatch the door and inward and downward to latch the door. A hold-open hook engages a crank on the torque tube when the latches are in the full open position. The latch mechanism and control handles will remain locked in the unlatched position until the stairwell door actuates the hold-open hook as the door closes when the stairway is retracted.
- (3) Viewing Window - A viewing window is provided to enable the flight and maintenance personnel to view the latch mechanism when the stairwell door is closed and latched. The viewing window, covered by a hinged access door, is installed between the electrical/electronic compartment and forward side of the stairwell adjacent to the latch mechanism torque tube. The stairway lights provide illumination to the latch mechanism and are controlled by a switch installed adjacent to the viewing window.

##### B. Operation

**WARNING:** TO PREVENT INJURY TO PERSON OPERATING EXTERNAL STAIR DOOR CONTROL HANDLE, CHECK WITH OUTSIDE PERSONNEL BEFORE OPERATING INTERNAL STAIR DOOR CONTROL HANDLE.

**WARNING:** WHEN CLOSING EXTERNAL STAIR DOOR CONTROL HANDLE, DO NOT GRASP HANDLE. USE PALM OF HAND ONLY.

- (1) The stairwell door operates in conjunction with the passenger forward entrance door stairway. The door is controlled by internal and external control handles and a mechanical interlock. The internal control handle is located below and inboard of the attendant's forward control panel. The external control handle is located in a well in the side of the fuselage, beneath and forward of the stairwell door.

EFFECTIVITY  
WJE ALL

**52-62-00**

TP-80MM-WJE

Page 1  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (a) The handles are connected by cranks and linkage to the door-latching mechanism. When either handle is actuated to the unlatched position, the latch hooks are disengaged from the clevises on the door, the hold-open hook engages the crank on the latch mechanism torque tube, and the control handles and latch mechanism are locked in the unlatched position.
  - (b) Limit switches are actuated to connect dc power to the stairway circuit, and close the circuit to the warning light on the attendant's forward panel. When the stairway is extended, the door swings outward and downward. When the stairway is retracting, the bottom step hook is inserted between the rollers pulling the door to the close position. As the door closes, the hold-open hook is actuated by the door to release the latch mechanism so the door can be latched. When the stairway is fully retracted, the door control handle (internal or external) is rotated to the latched position to latch the stairwell door and disconnect power to the stairway circuit.
- (2) The interlock prevents actuation of the door control handles when the passenger door is locked, and prevents locking the passenger door when the stairway is extended. The interlock is controlled by cranks and linkage actuated by the stairwell door latch mechanism. A pin installed in the forward edge of the passenger forward entrance door doorjamb is connected by linkage and cranks to the stairwell door latch mechanism. When the door is unlatched, the pin is extended, preventing the passenger door from being locked. When either door control handle is rotated to the latched position, the interlock pin is retracted.

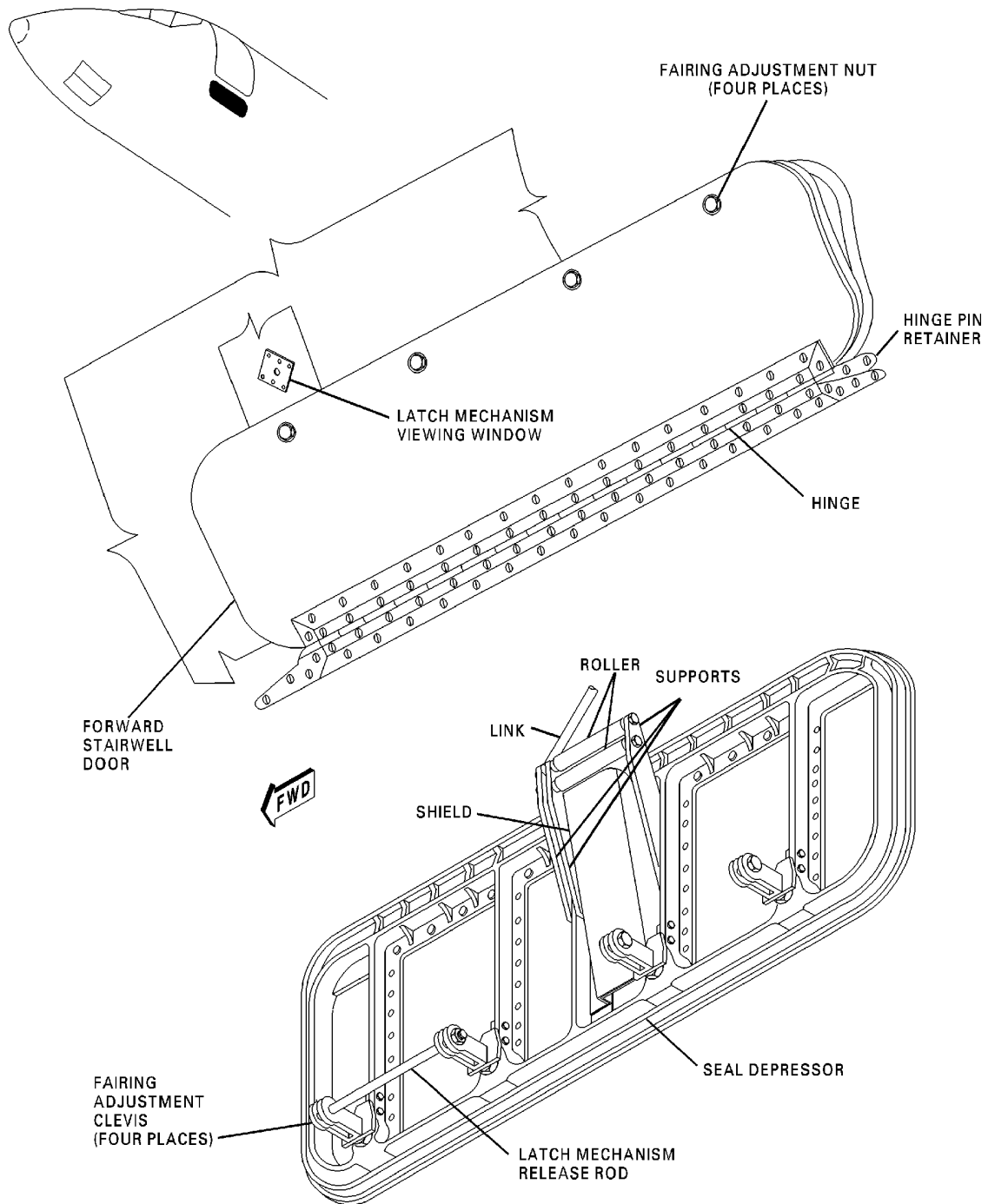
EFFECTIVITY  
WJE ALL

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**52-62-00**

Page 2  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IGDS)

BBB2-52-29A

**Forward Stairwell Door**  
**Figure 1/52-62-00-990-801**

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## 52-62-00

Page 3  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD STAIRWELL DOOR - REMOVAL/INSTALLATION

### 1. General

- A. This maintenance practices provides removal/installation instructions for the forward stairwell door. (Figure 401)
- B. The forward stairwell door may be removed or installed with the passenger forward entrance door stairway retracted or extended.  
  
The passenger door must be unlocked to release the stairwell door interlock, before the stairwell door can be opened.

### 2. Removal/Installation Forward Stairwell Door

#### A. Remove Door

- (1) Actuate stairwell door exterior control handle to unlatched position.

**WARNING:** REMAIN CLEAR OF STAIRWELL DOOR AS DOOR IS UNLATCHED. WITH ELECTRICAL POWER REMOVED FROM STAIRWAY, DOOR CAN SPRING OUTWARD SUDDENLY WHEN UNLATCHED.

- (2) Position power switch, under exterior control handle, to off.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (3) Open these circuit breakers and install safety tags:

#### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### **WJE 410**

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
---	----	--------	--------------------------------------

EFFECTIVITY  
WJE ALL

# 52-62-00

TP-80MM-WJE

Page 401  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 410 (Continued)

(Continued)

#### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

#### WJE 410

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

### WJE ALL

- (4) Pull stairwell door open far enough to move bottom step hook from between rollers on door.
- (5) Remove nut and washer from forward end of roller attach bolt and extract bolt enough to free link from between supports.  
Remove link from between supports.
- (6) Push roller attach bolt forward and install nut and washer to prevent losing.
- (7) Remove hinge pin retainer located at aft end of hinge.
- (8) Support door and remove hinge pin.
- (9) Remove door from aircraft.

#### B. Install Door

**NOTE:** When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools. The door should have a constant gap, 7/32- inch (5.6 mm) maximum, between the door skin and the fuselage skin.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

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# 52-62-00

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### WJE 410

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

#### WJE 410

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

### WJE ALL

- (2) Position door to fuselage.
- (3) Align hinge halves and install hinge pin.
- (4) Install hinge pin retainer.
- (5) Remove nut and washer from roller attach bolt and extract bolt enough to install link between supports. Position link between supports.
- (6) Push roller attach bolt forward and install nut and washer.
- (7) Adjust door to fair with fuselage skin. (PAGEBLOCK 52-62-00/501)
- (8) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

EFFECTIVITY  
WJE ALL

# 52-62-00

TP-80MM-WJE

Page 403  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### WJE ALL

- (9) Position power switch to normal, close, and latch door.

EFFECTIVITY  
WJE ALL

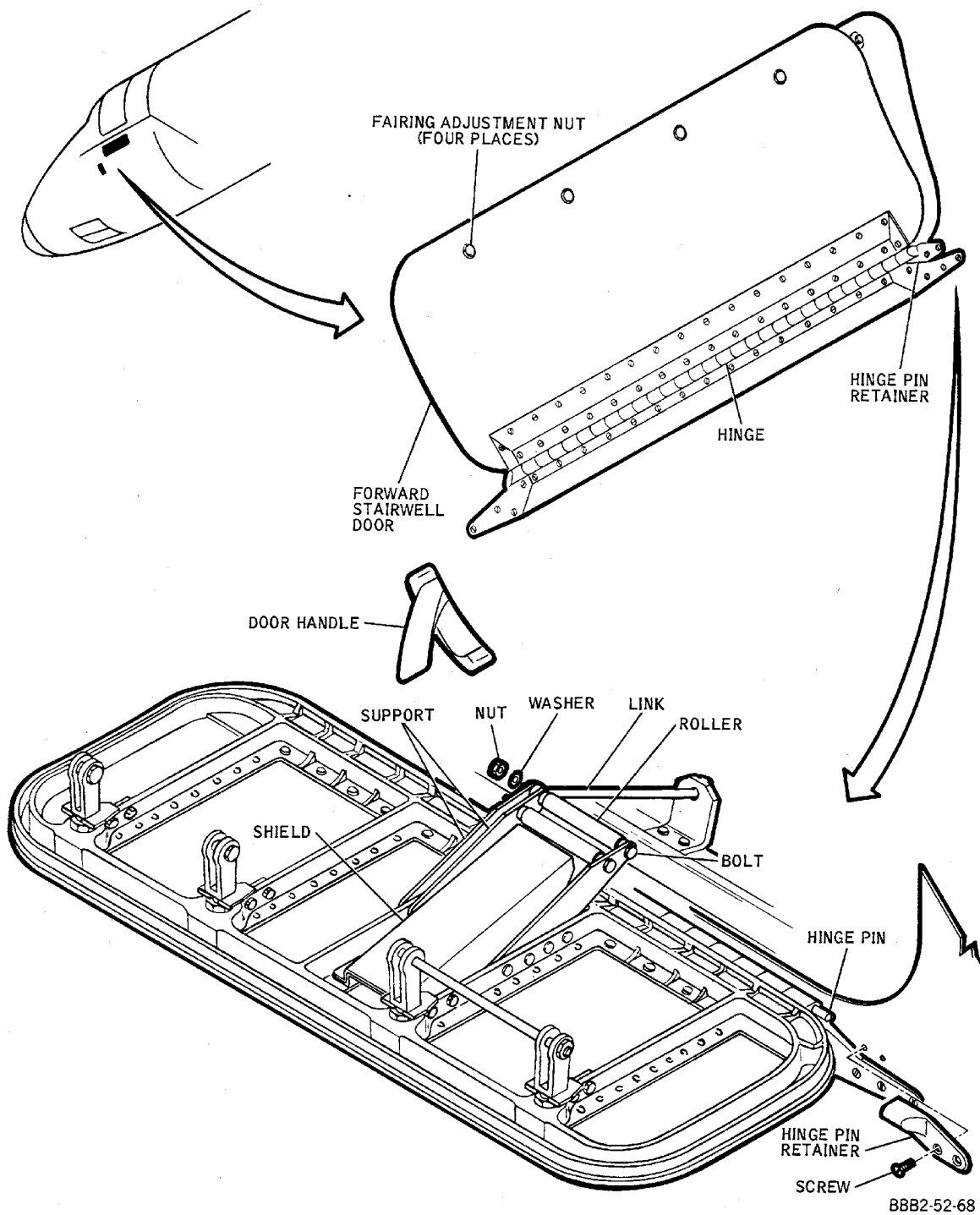
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**52-62-00**

Page 404  
Feb 01/2016



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Forward Stairwell Door -- Installation**  
**Figure 401/52-62-00-990-802**

EFFECTIVITY  
WJE ALL

**52-62-00**

TP-80MM-WJE

Page 405  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD STAIRWELL DOOR - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practices provides adjustment/test instructions for the forward stairwell door. (Figure 501)
- B. The adjustment of the forward stairwell door consists of fairing the door with the fuselage skin, adjusting the open position of the door, and adjusting striker for door warning switch. The latch mechanism lock fitting, actuated by the rod installed between the clevises on the door, is adjusted with the forward stairwell door latch mechanism. (PAGEBLOCK 52-62-01/501)
- C. Proper closing of the stairwell door is dependent on the stairway operating properly. If the door will not latch when the stairway is retracted, refer to Paragraph 2.B..

#### 2. Adjustment/Test Forward Stairwell Door

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 501.

##### A. Adjust Door

- (1) Open passenger door to release stairwell door interlock.

**WARNING:** REMAIN CLEAR OF STAIRWELL DOOR WHILE DOOR IS BEING UNLATCHED. WITH ELECTRICAL POWER REMOVED FROM STAIRWAY, DOOR CAN SPRING OUTWARD SUDDENLY WHEN UNLATCHED.

- (2) Actuate stairwell door exterior control handle to unlatched position.
- (3) Position power switch, under exterior control handle, to off.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (4) Open these circuit breakers and install safety tags:

##### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

##### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

##### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

##### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL

EFFECTIVITY  
WJE ALL

**52-62-00**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)**

(Continued)

**OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

**WJE 410**

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

**WJE 410**

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

**WJE ALL**

- (5) If latch hooks (7) do not release spacers (4) in clevis fittings (2), perform the following steps:
  - (a) Manually raise latch hooks from spacers and open door.
  - (b) Adjust each setscrew (5) in lever (6), until hooks rise far enough for spacers to pass under hooks as door is opened and closed.
 

NOTE: Repeated adjustments of the setscrews may be required to obtain normal operation.

NOTE: Levers used with new hooks do not have setscrews and require no adjustment.
- (6) Loosen locknuts (1) on clevis fittings.
- (7) Close and latch door. Check that door warning switch actuates.
  - (a) If adjustment is required, refer to FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-08/201 Config 1 or FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES, PAGEBLOCK 52-70-08/201 Config 2
- (8) Fair door with fuselage skin as follows:
  - (a) Adjust flush nuts (3) until forward, aft, and upper edges of door are faired within maximum acceptable tolerances. (Figure 502)
- (9) Open door.
- (10) Hold adjusting flush nuts (3) and tighten locknuts (1). Make certain that spacers (4) on clevis fittings (2) are properly positioned to engage hooks of latch mechanism.
- (11) Position power switch to normal.
- (12) Extend stairway until stair ground rollers are approximately 24 inches (609.6 mm) above ground.
- (13) Check stairwell door components for clearance from stair. If door does not clear stair, adjust door for clearance by adding or removing washers (3 maximum, 1 minimum) under nut on inboard end of link that controls open position of door.
- (14) Retract stairway and check that stair hook engages stairwell door rollers properly and pulls door to latching position. Latch door.

EFFECTIVITY  
WJE ALL

**52-62-00**

TP-80MM-WJE

Page 502  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

(15) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

### WJE 410

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

### WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

### WJE 410

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

### WJE ALL

B. Test Door (Operation)

- (1) Check that stairwell door latch mechanism is properly adjusted. (PAGEBLOCK 52-62-01/501)
- (2) Make sure that these circuit breakers are closed:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

EFFECTIVITY  
WJE ALL

# 52-62-00

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

(Continued)

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
------------	------------	---------------	-------------

#### WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### WJE 410

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

#### WJE 410

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
---	----	--------	--

### WJE ALL

- (3) Operate stairway; with stairway retracted, door fair mismatch should not exceed 1/2 inch (12.7 mm), latching position.
  - (a) Check operation of latching mechanism through viewing door Sta. 160 to confirm that latches are operating properly, door is closed securely and latching does not occur prior to clevis being in proper position. (Figure 503)
 

NOTE: Check that hold open hook is adjusted to ensure that latches do not operate prior to door being in latching position. (PAGEBLOCK 52-62-01/501)
- (4) If door does not reach latching position when stairway is retracted, ensure that following conditions exist:
  - (a) Stairwell door seal is in good condition and is properly installed.
  - (b) Stair ground rollers have 1/32 inch (0.79 mm) clearance from stair with stair retracted.
  - (c) Rack gears and shroud tracks are clean and free of foreign objects.
  - (d) Carriage retract stops are properly adjusted.

EFFECTIVITY  
WJE ALL

# 52-62-00

TP-80MM-WJE

Page 504  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (5) If no correction was required to accomplish Paragraph 2.B.(4) or if correction was required to accomplish Paragraph 2.B.(4) and door still does not reach latching position when stairway is retracted, stair is improperly rigged to the carriage.

NOTE: For minor adjustments that can be accomplished with stairway installed in aircraft, refer to PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST, PAGEBLOCK 52-61-00/501 Config 1 or PASSENGER FORWARD ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST, PAGEBLOCK 52-61-00/501 Config 2.

- (6) When stairwell door is in latching position with stairway retracted, latch door.

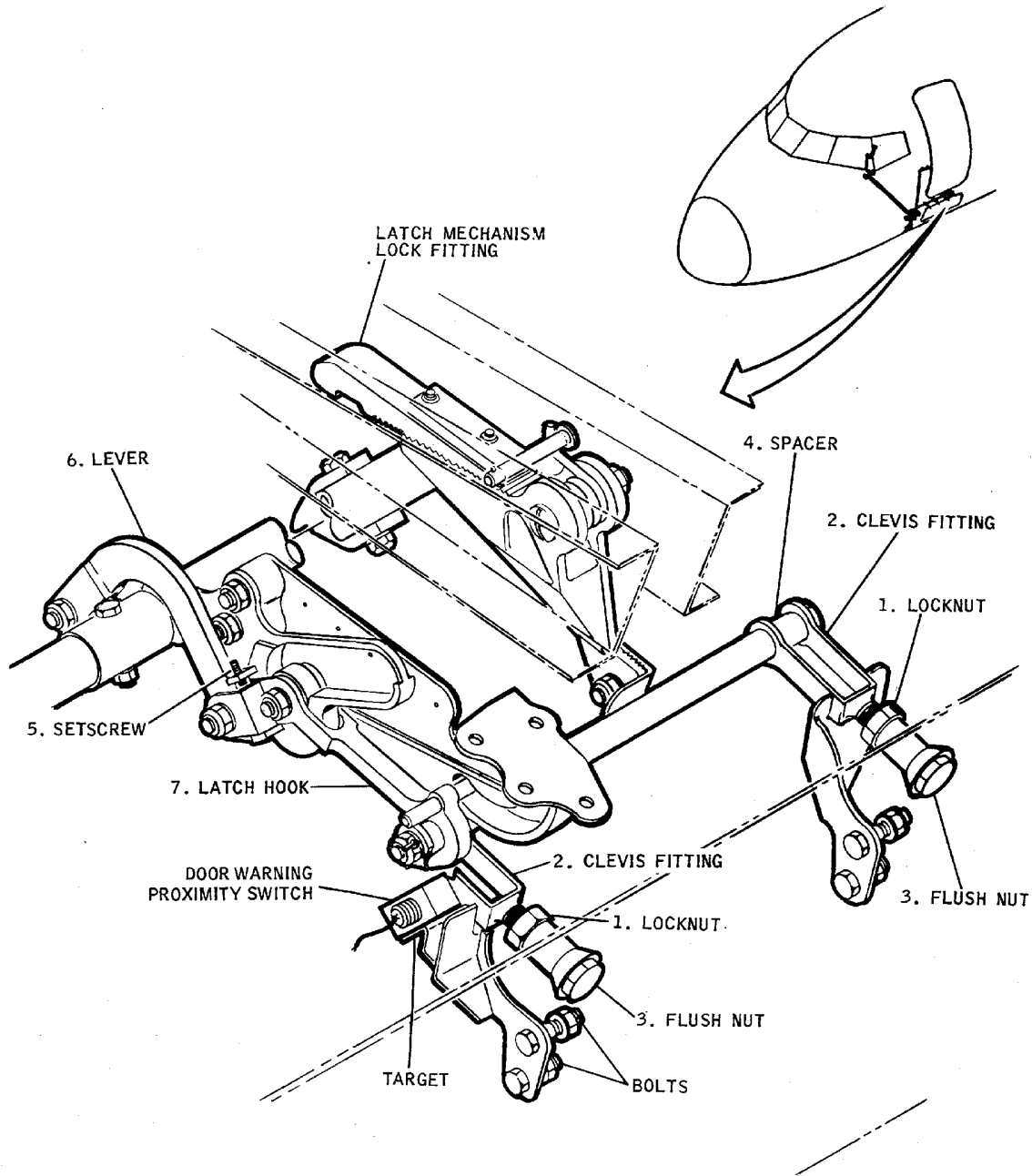
EFFECTIVITY  
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TP-80MM-WJE

**52-62-00**

Page 505  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



NOTE: ADJUSTMENT AT EACH LATCH IS IDENTICAL.

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**Forward Stairwell Door -- Adjustment  
Figure 501/52-62-00-990-803**

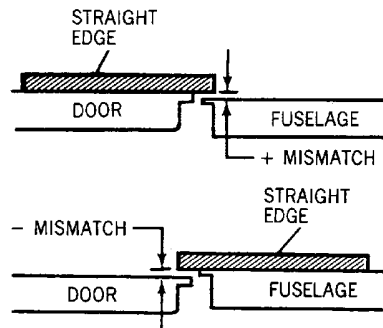
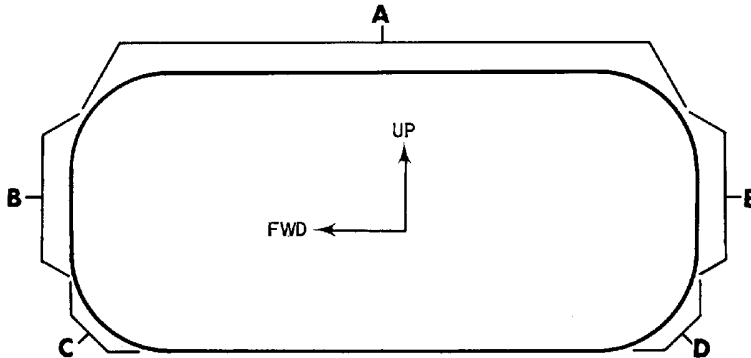
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WJE ALL

**52-62-00**

TP-80MM-WJE

Page 506  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



LOCATION	MAXIMUM ACCEPTABLE MISMATCH
A	±0.055 INCH (1.4 MM)
C AND D	±0.100 INCH (2.5 MM)
B AND E	±0.063 INCH (1.6 MM)

BBB2-52-70B

**Forward Stairwell Door -- Fair Adjustment  
Figure 502/52-62-00-990-804**

EFFECTIVITY  
WJE ALL

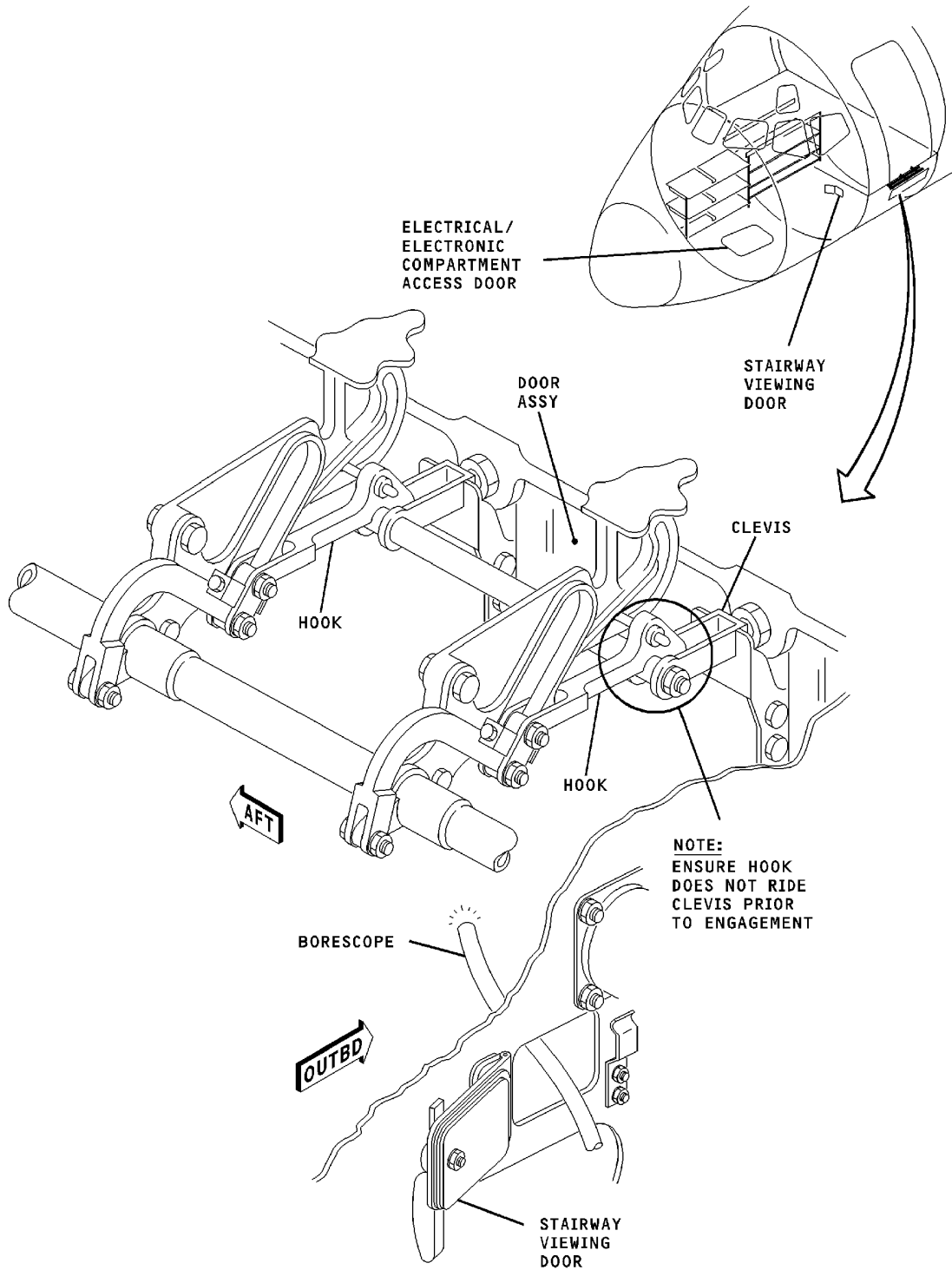
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**52-62-00**

Page 507  
Feb 01/2015



# MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IGDS)

BBB2-52-201

**Forward Stairwell Door Latch Mechanism -- Adjustment**  
Figure 503/52-62-00-990-805

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 52-62-00

Page 508  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD STAIRWELL DOOR LATCH MECHANISM - REMOVAL/INSTALLATION

#### 1. General

- A. This maintenance practices provides removal/installation instructions for the forward stairwell door latch mechanism. (Figure 401)
- B. The forward stairwell door latch mechanism is removed as a complete unit. Linkage and cranks attached to the forward end of the mechanism that must be removed or disconnected are accessible from within the electrical/electronics compartment. However, some equipment installed adjacent to the stairwell may have to be removed to gain access to the latch mechanism.

#### 2. Removal/Installation Forward Stairwell Door Latch Mechanism

##### A. Remove Latch Mechanism

- (1) Remove passenger forward entrance door stairway.  
(PASSENGER FORWARD ENTRANCE DOOR STAIRWAY, SUBJECT 52-61-00, Page 401)
- (2) Disconnect interlock pushrod from crank on latch mechanism tube.
- (3) Disconnect external control handle pushrod from crank on latch mechanism tube.
- (4) Disconnect internal control handle pushrod from crank on latch mechanism tube.
- (5) Remove interlock pushrod crank and external pushrod crank from latch mechanism tube.
- (6) Remove bolts attaching latch mechanism brackets to fittings on structure and remove latch mechanism.

##### B. Install Latch Mechanism

- (1) Insert forward end of latch mechanism torque tube into bearing on frame at forward side of stairwell.
- (2) Determine number of washers required to position center of clevis on internal handle pushrod crank  $1 \frac{5}{16}(\pm 1/32)$  inch ( $33.3(\pm 0.79)$ mm) from frame at forward side of stairwell.
- (3) Remove torque tube from bearing.
- (4) Install washers, determined in Paragraph 2.B.(2), on torque tube.
- (5) Insert torque tube into bearing on frame, and check that center of clevis on crank is  $1 \frac{5}{16}(\pm 1/32)$  inch ( $33.3(\pm 0.79)$ mm) from frame. Add or remove washers as required.
- (6) Position latch mechanism brackets to fittings on structure and install attach bolts.
- (7) Install external handle pushrod crank and interlock pushrod crank on latch mechanism tube.
- (8) Adjust latch mechanism and interlock. (PAGEBLOCK 52-62-01/501)  
NOTE: Pushrods are connected when adjustments are made.
- (9) Verify that latch mechanism and interlock linkage is secured.
- (10) Install passenger forward entrance door stairway.  
(PASSENGER FORWARD ENTRANCE DOOR STAIRWAY, SUBJECT 52-61-00, Page 401)

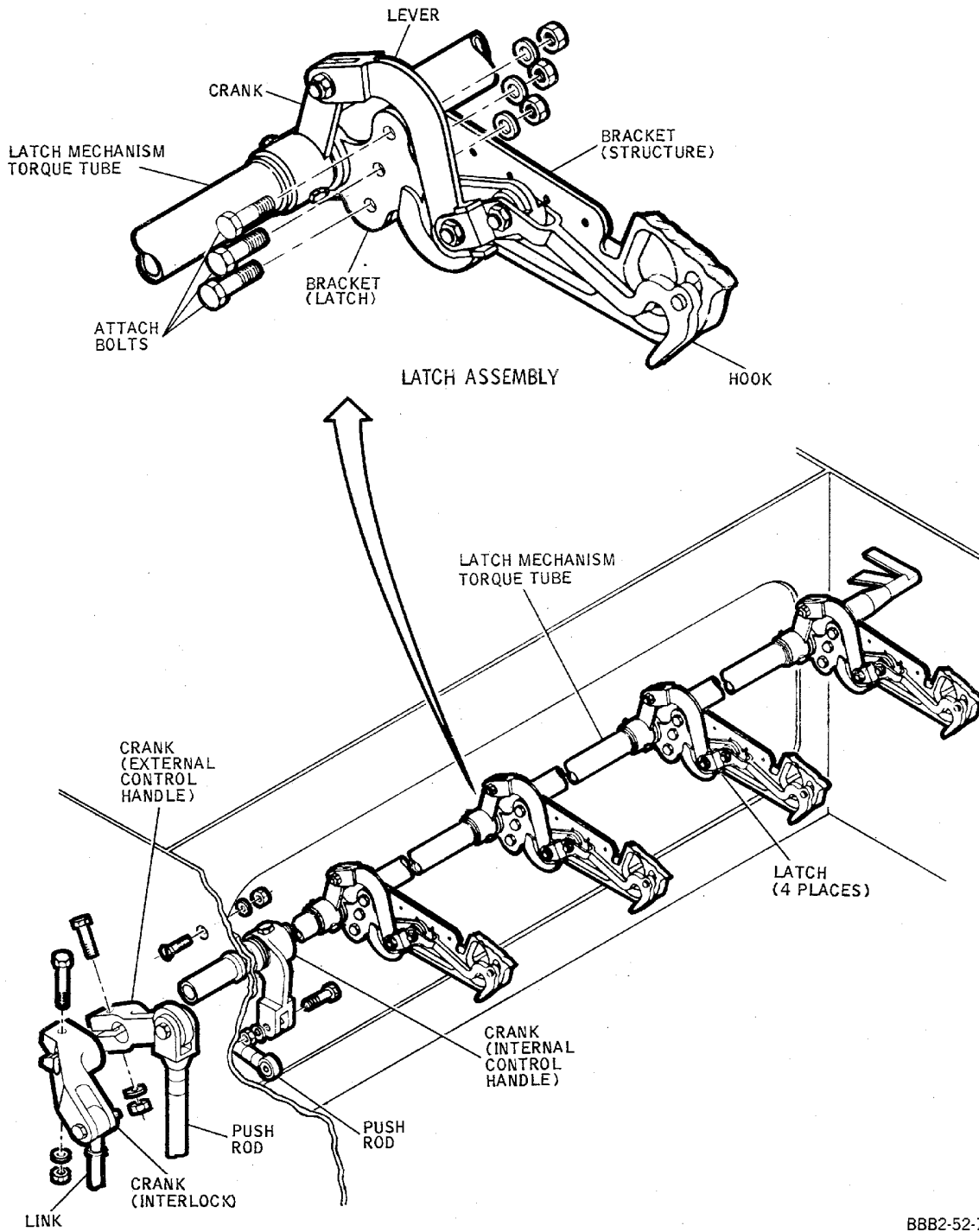
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# 52-62-01

Page 401  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-71

**Forward Stairwell Door Latch Mechanism -- Installation**  
**Figure 401/52-62-01-990-801**

EFFECTIVITY  
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**52-62-01**

TP-80MM-WJE

Page 402  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD STAIRWELL DOOR LATCH MECHANISM - ADJUSTMENT/TEST

### 1. General

- A. This maintenance practices provides adjustment/test instructions for the forward stairwell door latch mechanism. (Figure 501)
- B. The adjustments of the latch mechanism and interlock are combined in one adjustment procedure. Any adjustment of the latch mechanism linkage will affect the interlock adjustment. However, adjustment of the interlock linkage will not affect the latch mechanism linkage adjustments.
- C. The forward passenger entrance door stairway must be extended or removed to adjust the latch mechanism.  
(PASSENGER FORWARD ENTRANCE DOOR STAIRWAY, SUBJECT 52-61-00, Page 401)
- D. The adjustment for the exterior control handle is located in the electrical/electronics compartment.
- E. The adjustments for the interior control handle are located in the flight compartment passageway.
- F. The adjustments for the interlock are located in the doorjamb of the passenger forward entrance door and the electrical/ electronics compartment.
- G. The adjustments for the latch mechanism hooks are accomplished during door fair adjustment.  
(PAGEBLOCK 52-62-00/501)
- H. Borescope check procedures are also provided to ensure airstair door locking mechanism latch hooks are properly engaged on each clevis.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

**Table 501**

Name and Equipment	Manufacturer
Inconel Lockwire 0.032 in NASM20995N32, DPM 684	Not Specified
Corrosion Resistant Steel Lockwire 0.032 in NASM20995C32, DPM 5865	Not Specified
Borescope	Commercially available

### 3. Adjustment/Test Forward Stairwell Door Latch Mechanism

**CAUTION:** IF STAIRWAY IS EXTENDED, MAKE CERTAIN THAT RETENTION DEVICE IS ACTIVATED TO PREVENT ACTUATION OF STAIRWAY.

#### A. Adjust Latch Mechanism

NOTE: Numbers in parentheses ( ) in the following text correspond to callouts in Figure 501.

- (1) If latch mechanism is being installed, connect exterior control handle pushrod (1). Do not tighten attach bolt.
- (2) Actuate latch mechanism hold-open lock, and using exterior control handle (2), close latches.
- (3) Adjust exterior control handle pushrod (1) so exterior control handle (2) is flush with fuselage skin when cam followers (3) are in detent of cams (4).
- (4) Using exterior control handle (2), open latches.
- (5) Loosen hold-open hook (6), attach bolts (7), and adjust hold-open hook (6) so it clears crank (8) on latch mechanism torque tube by 1/32 to 1/16 inch (0.79 to 1.6 mm). Tighten attach bolts (7).

EFFECTIVITY  
WJE ALL

# 52-62-01

TP-80MM-WJE

Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (6) Adjust stop bolt (9) so hold-open hook (6) bottoms on crank (8) when release crank (10) contacts stop bolt (9).
- (7) Actuate latch mechanism hold-open lock. Check that hold-open hook (6) disengages from crank (8) without binding, and that spring returns hook to engaged position. If binding occurs, adjust hold-open hook (6).
- (8) Actuate latch mechanism hold-open lock, and using exterior control handle, close latches.
- (9) As latches close, check that rollers on No. 1 and No. 2 latch switches have 1/4-inch (6.4 mm)(minimum) travel from point where switches open electrical circuits to point where latches are fully closed.  
NOTE: If latch switches require adjustment, rotate switches. If No. 1 latch switch will not rotate, enlarge only the two lower mounting holes in the switch support to 1/4-inch (6.4 mm) diameter. If No. 2 latch switch will not rotate, enlarge only the two upper mounting holes in the switch support to 1/4-inch (6.4 mm) diameter. The No. 1 latch switch is inboard of the No. 2 latch switch.
- (10) If latch mechanism is being installed, connect interior control handle pushrod to crank on latch mechanism torque tube.
- (11) Adjust end fitting (11) on control rod (12), and adjust end fittings on interior control handle pushrod (13) so outer edge of knob on interior control handle is flush (+0 - 1/8 inch)(+0.0 - 3.2 mm) with aft edge of flight compartment door frame.
- (12) Adjust interlock link (15) to 4 7/8(±1/32) inches (123.8(±0.79) mm) between center of bolt holes.
- (13) Remove lockpin retainer (16) from doorjamb of passenger door.
- (14) Remove doorjamb lining to gain access to interlock linkage.
- (15) Disconnect interlock pushrod (17) from crank (18).  
NOTE: If latch mechanism is being installed, connect interlock pushrod to crank on latch mechanism torque tube.
- (16) With end of interlock lockpin (19) extending approximately 1/8 inch (3.2 mm) from doorjamb, adjust interlock lockpin (19) until lockpin will extend approximately 3/4 inch (19.1 mm) and will retract without binding.
- (17) With end of interlock lockpin (19) extending approximately 1/8 inch (3.2 mm), adjust interlock pushrod (17) and connect to crank (18).
- (18) Using interior or exterior control handle, open and close latches. Check that interlock lockpin (19) extends and retracts without binding. If binding occurs, adjust inter-lock lockpin (19) and interlock pushrod (17).
- (19) With interlock lockpin (19) extended (latches open), install lockpin retainer (16). Use washers as required to clear interlock lockpin (19) by 1/16(±1/32) inch (1.6(±0.79) mm).
- (20) Manually retract stairway . Do not close stairwell door.  
(PASSENGER FORWARD ENTRANCE DOOR STAIRWAY, SUBJECT 52-61-00, Page 1)  
**WARNING:** MAKE SURE RIGGING DIMENSIONS FOR AIR STAIR DOOR ARE CAREFULLY OBEYED. THIS WILL HELP PREVENT RAPID DECOMPRESSION WHICH CAN CAUSE INJURY TO PERSONS AND DAMAGE TO AIRCRAFT.
- (21) Adjust angle (20) on release crank (10) so hold-open hook (6) is actuated to release position when top edge of stairwell door is 1/2(±1/32) inch (12.7(±0.79) mm) from flush with fuselage skin.
- (22) Tighten all jamnuts and secure pushrod attach bolts.

EFFECTIVITY  
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TP-80MM-WJE

**52-62-01**

Page 502  
Feb 01/2015

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

- (23) Using exterior control handle latch stairwell door.
- (24) Check clearance of interlock arm on forward edge of passenger door.
  - (a) Interlock arm should clear interlock lockpin retainer (16) by 0.030 to 0.045 inch (0.76 to 1.14 mm) as door is closing.
  - (b) Interlock arm should clear interlock lockpin (19) by 0.030 to 0.045 inch (0.76 to 1.14 mm) when door is closed and latched.
  - (c) If adjustment is required, refer to PASSENGER FORWARD ENTRANCE DOOR - ADJUSTMENT/TEST, PAGEBLOCK 52-11-00/501.
- (25) Safety interlock lockpin (19) jamnut with lockwire. (LOCKWIRE SAFETYING - MAINTENANCE PRACTICES, PAGEBLOCK 20-10-18/201)
- (26) Install doorjamb lining.

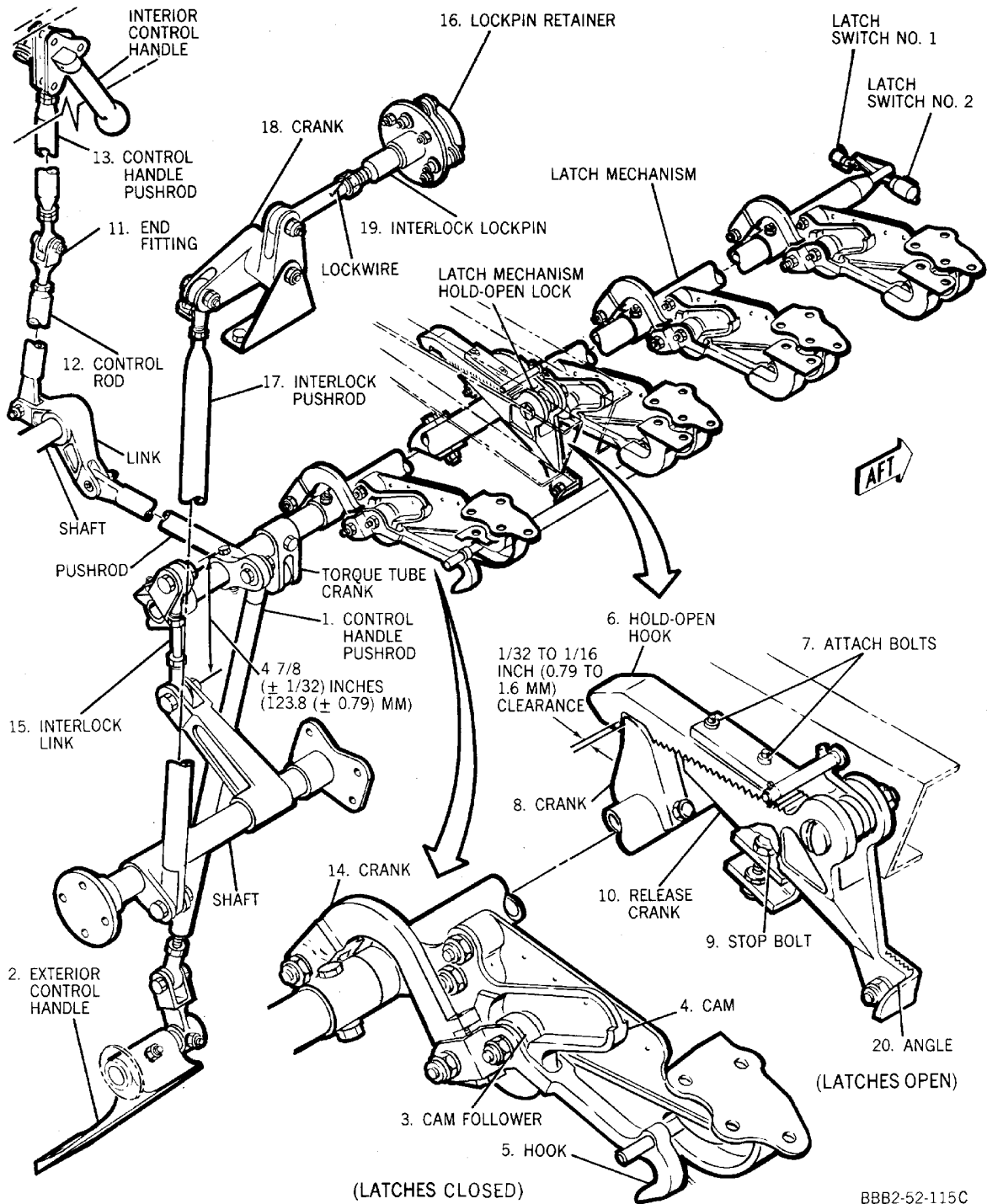
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TP-80MM-WJE

**52-62-01**

Page 503  
Feb 01/2015

MD-80  
AIRCRAFT MAINTENANCE MANUAL



Forward Stairwell Door Latch Mechanism -- Adjustment  
Figure 501/52-62-01-990-802

EFFECTIVITY  
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52-62-01

TP-80MM-WJE

Page 504  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 4. Check Forward Stairwell Door Latch Mechanism

#### A. Check Door Latch Hooks Engagement Using Borescope (Figure 502)

(1) Gain access to stairway viewing door inside avionics compartment through avionics access door.

(2) Open stairway viewing door and insert borescope.

NOTE: Hole in web, outboard of viewing door may also be utilized to insert borescope.

(3) Operate stairwell door and check that four airstair latch hooks engage and lock properly on each clevis during transit.

NOTE: Make certain hook does not ride clevis prior to engagement.

(4) Check operation of latching mechanism through viewing door Station 160 to confirm proper latch operation. Verify door is closed securely, make sure latches do not operate prior to door being in latching position.

(5) Remove borescope.

(6) Close stairway viewing door.

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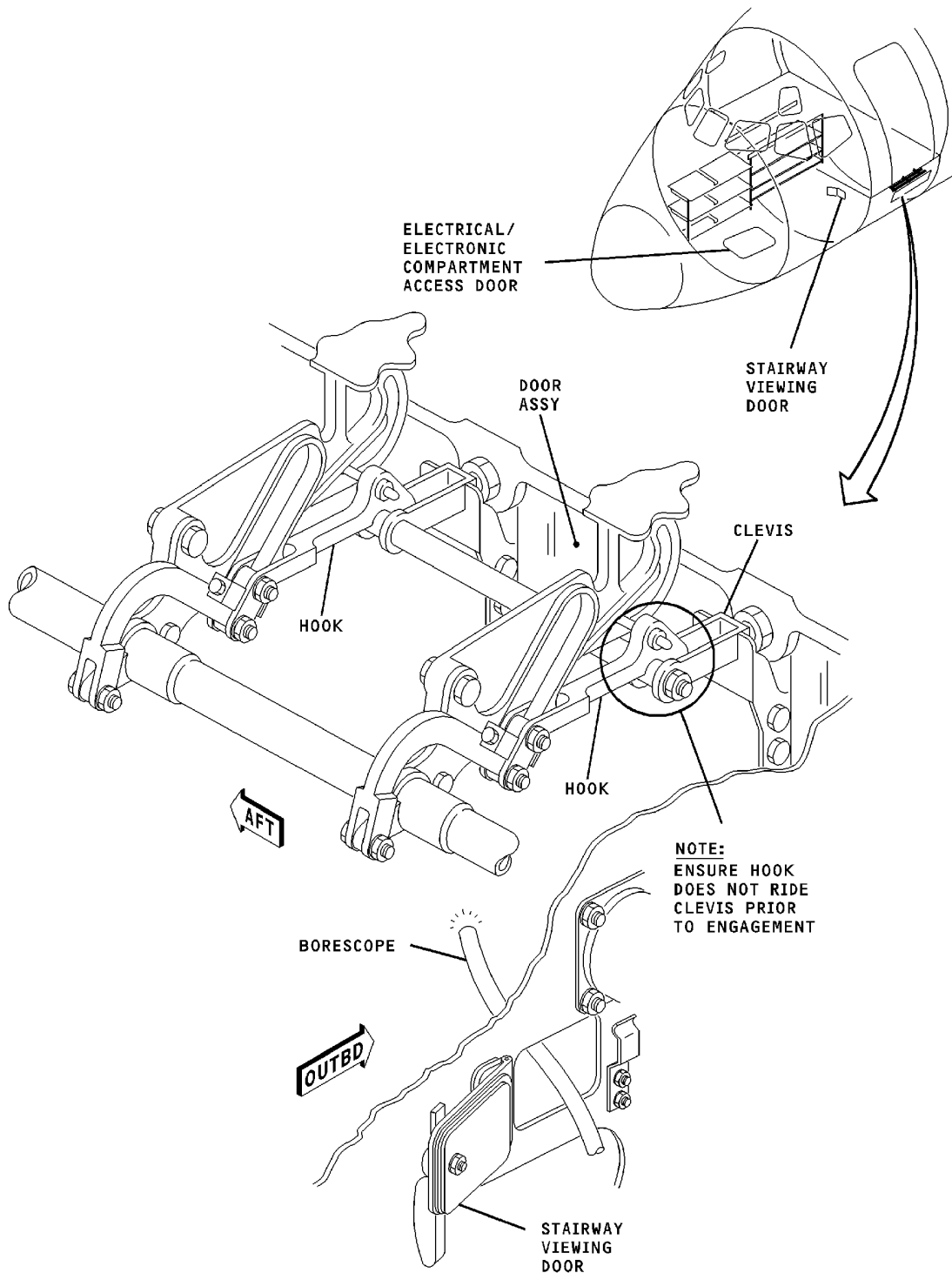
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**52-62-01**

Page 505  
Feb 01/2015



# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Forward Stairwell Door Latch Mechanism -- Check  
Figure 502/52-62-01-990-804

EFFECTIVITY  
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TP-80MM-WJE

## 52-62-01

Page 506  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FORWARD STAIRWELL DOOR SEAL - REMOVAL/INSTALLATION

### 1. General

- A. This maintenance practices provides removal/installation instructions for the forward stairwell door seal. (Figure 401)
- B. The forward stairwell door seal can be removed and installed only when the forward entrance door stairway is fully retracted or is removed from the aircraft.

### 2. Removal/Installation Forward Stairwell Door Seal

- A. Remove Seal

**WARNING:** WHEN UNLATCHING STAIRWELL DOOR WITH STAIRWAY ELECTRICAL CIRCUIT DEENERGIZED, REMAIN CLEAR OF STAIRWELL DOOR AREA. STAIRWAY CAN CAUSE STAIRWELL DOOR TO SPRING OUTWARD WITH ENOUGH FORCE TO CAUSE INJURY TO PERSONNEL.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

#### **LEFT CONSOLE, GROUND SERVICE BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### **LOWER EPC, DC TRANSFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### **WJE 410**

A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### **WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
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EFFECTIVITY  
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# 52-62-02

TP-80MM-WJE

Page 401  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(Continued)

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### WJE ALL

- (2) Unlatch stairwell door, and manually extend stairway until stairwell door is fully open.
- (3) Disconnect link from stairwell door, and fully retract stairway.
- (4) Using tool with smooth surfaces and no sharp edges, grasp seal, and pull seal from retainer.

#### B. Install Seal

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

EFFECTIVITY  
WJE ALL

# 52-62-02

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 410 (Continued)

(Continued)

#### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			

A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
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#### WJE 410

A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
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### WJE ALL

- (2) With stairway fully retracted, position seal on retainer so orange bands on seal are in lower corners.
- (3) Using non-metallic tool, install short section of seal in retainer at each corner of seal.
- (4) Install short section of seal midway between upper corners and midway between lower corners.
- (5) Install remainder of seal, ensuring seal is properly seated in retainer at all points and seal is not wrinkled.
- (6) Partially extend stairway, and support stairway.
- (7) Connect link to door.
- (8) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-168	FWD PASS ENTRANCE STAIR LTS

#### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			

A	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

EFFECTIVITY  
WJE ALL

# 52-62-02

TP-80MM-WJE

Page 403  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(Continued)

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410</b>			
A	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
<b>WJE 410</b>			
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

### WJE ALL

- (9) Retract stairway, and latch stairwell door.
- (10) Check stairwell door for proper fair with fuselage skin. (PAGEBLOCK 52-62-00/501)

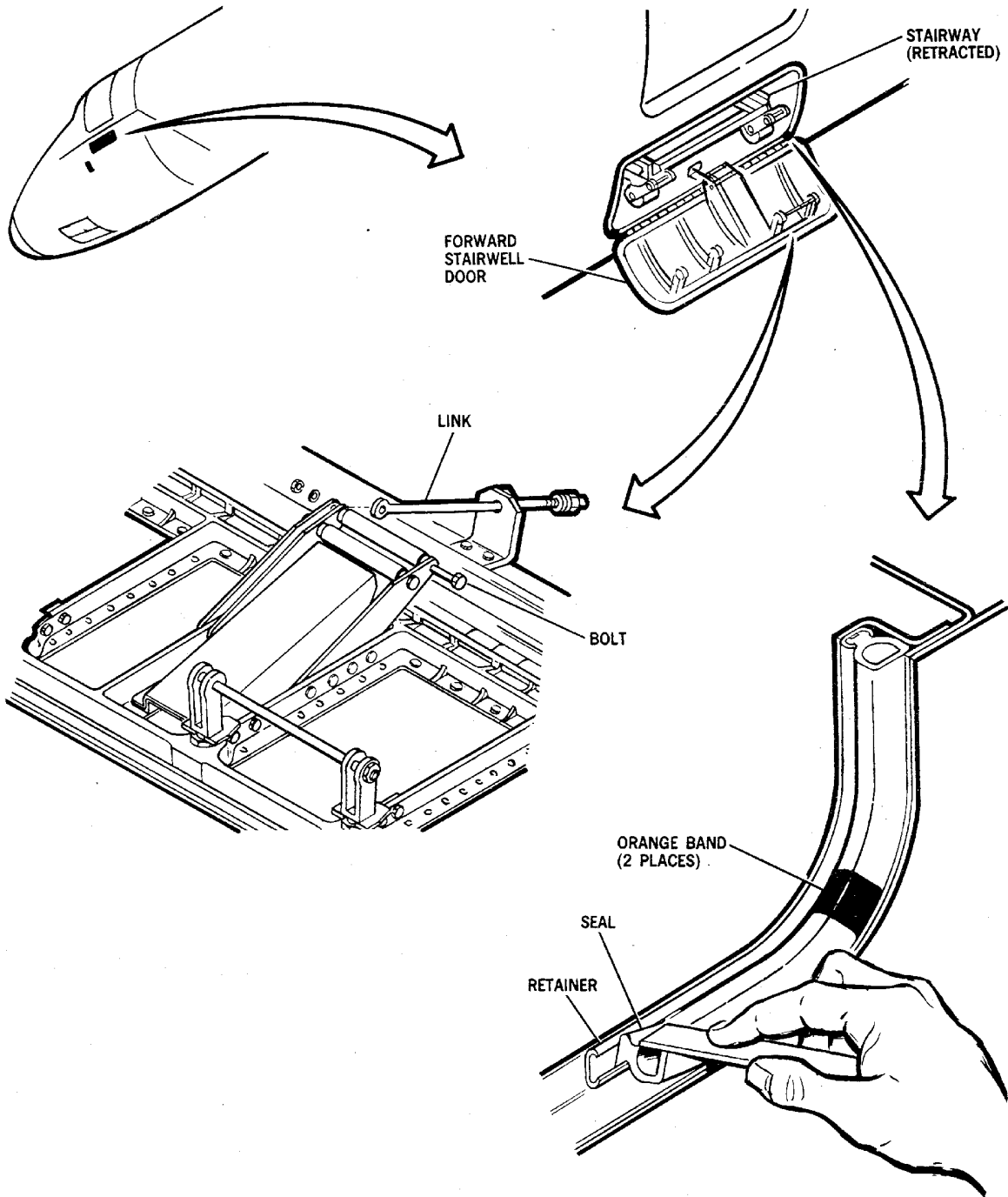
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TP-80MM-WJE

# 52-62-02

Page 404  
Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Forward Stairwell Door Seal -- Installation**  
Figure 401/52-62-02-990-801

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## 52-62-02

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD STAIRWELL DOOR (DISABLED - AIRSTAIR REMOVED) - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides instructions for opening, closing, and securing of the forward stairwell door when it has been disabled due to removal of the airstairs.

#### 2. Open/Close Deactivated Airstair Door

##### A. Open Door

- (1) Gain access to door latching mechanism through electrical equipment bay.
- (2) Partially remove bolts securing levers and cranks to brackets (two places), leaving bolts through levers and cranks but clear of securing brackets.
- (3) Remove bolt securing exterior door handle.
- (4) Open door using handle.

##### B. Close and Secure Door

- (1) Make certain that attaching bolts are through levers and cranks of latches, but clear of securing brackets.
- (2) While pushing in on door, latch door using external handle.
- (3) Secure handle with bolt removed in Paragraph 2.A.(3).
- (4) Through electrical equipment bay, install bolts through levers, cranks, and securing brackets. Safety with cotter pin.

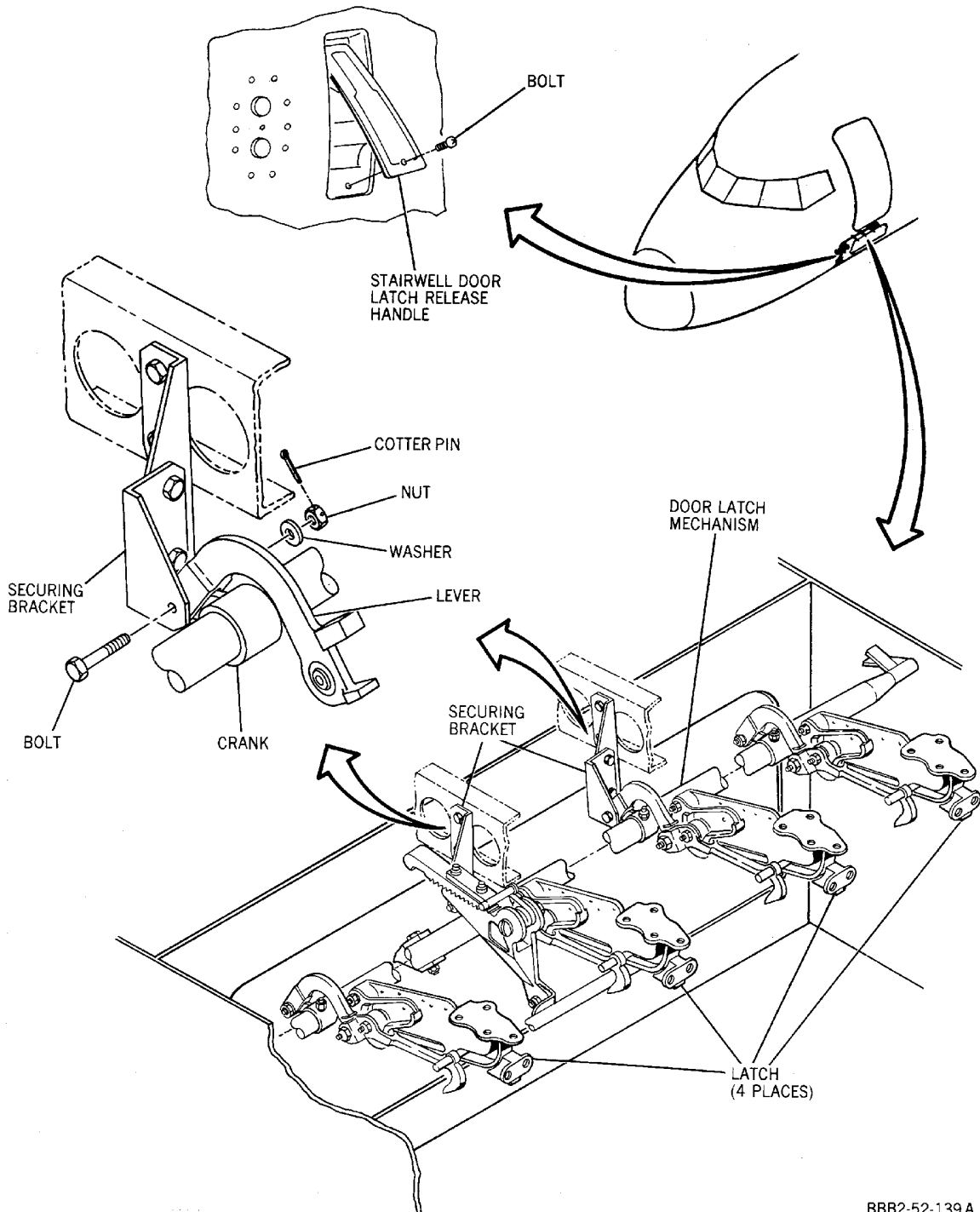
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WJE 412, 414; W/O AIRSTAIR INSTALLED

TP-80MM-WJE

**52-62-03**

Config 1  
Page 201  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Securing Disabled Airstair Door**  
**Figure 201/52-62-03-990-802**

EFFECTIVITY  
WJE 412, 414; W/O AIRSTAIR INSTALLED

TP-80MM-WJE

**52-62-03**

Config 1  
Page 202  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION

#### 1. General

- A. The passenger aft entrance door stairway is located in the lower section of the aft accessory compartment. The stairway provides a means to enter or leave the passenger compartment through the passenger aft entrance door.
- B. The stairway consists of two sections; fixed and movable. The fixed section extends downward from the aft pressure bulkhead. For further information on the fixed section of the stairway, refer to FUSELAGE, CHAPTER 53.

#### 2. Passenger Aft Entrance Door Stairway

##### A. Description

- (1) The movable section of the stairway is a hydraulically actuated unit. The stairway consists of seven steps and risers, side panels and rails, formers, doublers, inter-coastals, fittings, and an outer skin of monel, which fairs with the lower surface of the fuselage when the stairway is retracted. The four lower steps fold upward and forward when the stairway is retracted, to reduce the size of the opening required in the fuselage. The actuating system of the stairway consists of control handles, cables, actuating cylinder, cranks, struts, linkage, torque tubes, and latches.
- (2) Handrails - Telescoping handrails are provided on either side of the fixed and movable stairway sections. The hand-rails are attached to the aircraft structure just aft of the aft pressure bulkhead, and to the movable stairway section, by two actuating and two lower struts.
- (3) Struts - The struts are actuated by the hydraulic actuating cylinder, and are in an overcenter condition when the stairway is extended.
- (4) Stairway - The stairway is actuated by a hydraulic actuating cylinder. The cylinder is attached, by cranks attached to a torque tube, to the actuating struts which are connected to the aft end of the handrails and to the lower struts. When the cylinder is actuated, the cranks are rotated. The actuating and lower struts are moved downward to extend, and upward to retract the stairway. Hydraulic power is supplied by the right hydraulic system, or by the handpump in the right main gear wheelwell. If hydraulic power is not available, the stairway will free-fall to the extended position. Emergency power is also available from the rudder accumulator. When the accumulator is fully charged, the stairs will fully extend, and then partially retract.
  - (a) The stairway is held in the extended position by the over-center condition of the actuating and lower struts and a latch mechanism. It is held in the retracted position by the latch mechanism. The latch mechanism consists of a torque tube, cams, cranks, and two spring-loaded latches. Two hooks on each latch hold the stairway in the retracted or extended position. The latches will hold the stairway extended or retracted without hydraulic pressure. When the stairway is retracted, rollers attached to the stairway door engage the aft hooks of each latch. When the stairway is extended, rollers attached to the stairway actuating struts engage the forward hook of each latch. The latch hooks are actuated by cams attached to the latch actuator torque tube. The torque tube is rotated to the extend or retract positions by the stairway actuating cylinder.

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TP-80MM-WJE

**52-63-00**

Page 1  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (5) Control - Control of the stairway is accomplished by two control handles. One handle is located on the attendant's stairway control panel, located on the left side of the stairwell just aft of the aft pressure bulkhead. The other handle is located in a well in the lower surface of the fuselage near the stairway opening. The well is covered by an access door when the handle is not in use. The handles are connected by cables to the latch mechanism and hydraulic control valve. The handles have three positions; extend, retract, and neutral. The cables are spring-loaded by the latch mechanism and the control valve to return the control handles to the neutral position.

NOTE: The internal control handle has been removed from some aircraft so the stairway cannot be extended during flight.

- (6) Indicating Lights - Indicating lights are provided to indicate the position of the stairway. An indication on the annunciator panel comes on when the stairway is extended and goes off when it is retracted and latched. Two lights, amber and green, on the attendant's stairway control panel, indicate the safe and unsafe condition of the stairway for loading and unloading. The amber light comes on when the latch hooks are opened to extend the stairway, and stays on until the stairway is latched in the retracted position. When the stairway is extended, and the latch hooks fully engage the rollers on the actuating struts, the green light comes on, indicating that the stairway is latched in the extended position, and is in a safe loading and unloading condition. For a complete description and operation of door warning, refer to DOOR WARNING, SUBJECT 52-70-00, Page 201.

### B. Operation (Normal, Hydraulic Power)

NOTE: The internal control handle has been removed from some aircraft so the stairway cannot be extended during flight.

**WARNING**: DO NOT PERMIT EXTENDED AFT STAIRWAY TO SUPPORT WEIGHT OF AIRCRAFT. TAIL JACK SHOULD BE INSTALLED WHEN PERFORMING MAINTENANCE ON AIRCRAFT TO PREVENT INJURY TO PERSONNEL OR DAMAGE TO AIRCRAFT.

- (1) Normal operation of the stairway is accomplished by hydraulic power supplied by the auxiliary hydraulic pump. To operate the pump, the three auxiliary hydraulic pump circuit breakers on the generator bus circuit breaker panel must be closed and the auxiliary hydraulic pump switch on the right instrument panel is placed in the on position.
- (a) Extend - To extend the stairway, the control handle (internal or external) is placed in the extend position. Cables actuated by the handle rotate an arm on the latch mechanism torque tube. As the torque tube is rotated by the arm, cams on the torque tube open the aft hook of each latch to disengage the rollers on the stairway. When the rollers are released, the cables continue to rotate the arm to actuate the hydraulic control linkage which positions the control valve slide in the extend position. As the stairway extends, the retractable steps at the aft end of the stairway are rotated by linkage to align with the steps on the stairway. When the stairway is fully extended, the latch hooks engage the rollers on the actuating struts, and the actuating struts and lower
- 1) As the stairway is extended, the handrails are erected and extended. The handrails are held firmly in the extended and erected position by the overcenter condition of the actuating and lower struts.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-00**

Page 2  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- 2) When the aft hooks of the latches are opened to release the stairway, limit switches are actuated by the hooks. When the switches are actuated, a ground circuit to the stairway warning indication on the annunciator panel and to the amber warning light on the attendant's stairway panel is completed and the light and indication will come on. Limit switches, actuated by the forward hooks of the latches, are actuated when the rollers on the actuating struts engage the latch hook to complete a ground circuit to the green stairway safe light.
- (b) Retract - To retract the stairway, the handle (external or internal) is placed in the retract position. The control cables rotate the latch mechanism torque tube, and the cams on the torque tube open the forward hook of each latch to disengage the rollers on the actuating struts. The control valve linkage moves the control valve slide to the retract position. As the stairway retracts, the retractable steps rotate upward and forward, and the handrails retract. When the stairway is fully retracted, the aft hook of the latches engage the rollers on the stairway. The stairway is held in the retracted position by the latch hooks and pressure trapped in the actuating cylinder.
- 1) When the latch hooks are opened to retract the stairway, limit switches are actuated, the green light on the attendant's stairway control panel goes off. When the stairway is latched in the retracted position, limit switches are actuated, the amber warning light on the attendant's panel and the stairway warning indication on the annunciator panel go off.
- C. Operation (Handpump, Hydraulic Power)
- (1) Operation of the stairway with hydraulic power supplied by the handpump is the same as with normal hydraulic power. The handpump is installed in the right main gear wheel well. On aircraft with cooling orifices installed (SB 29-39), the RH spoiler shutoff and system depressurization valve must be in OFF position for stairway operation with handpump.
- D. Operation (Manual)

**CAUTION:** DO NOT ATTEMPT TO EXTEND STAIRWAY MANUALLY WITHOUT MOVING BOTH STRUTS TO OVERCENTER POSITION WHILE HOLDING HANDLE IN EXTEND POSITION OR DAMAGE TO MECHANISM WILL RESULT.

- (1) To extend the stairway manually, the handle (internal or external) is placed in the extend position and held. The stairway will free-fall to the extended position. However, both struts must be moved to the overcenter, latched, position while the handle is held in the extend position. To retract the stairway, the handle is placed in the retract position to release the rollers on the actuating struts. The actuating and lower struts are then manually moved from the overcenter position, and the stairway is manually raised until the latch hooks engage the rollers on the stairway.

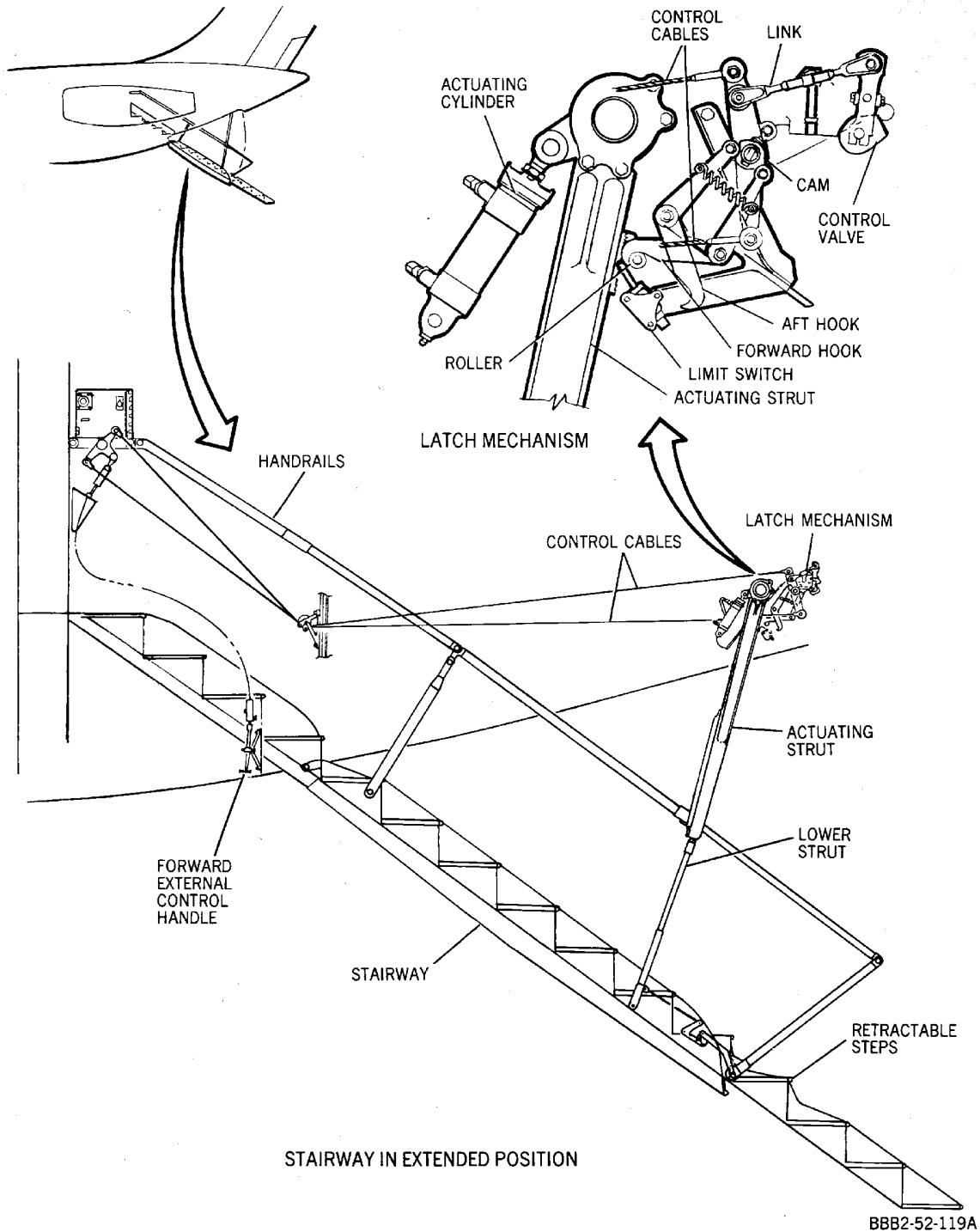
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WJE ALL

TP-80MM-WJE

**52-63-00**

Page 3  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Aft Entrance Door Stairway  
Figure 1/52-63-00-990-801 (Sheet 1 of 3)**

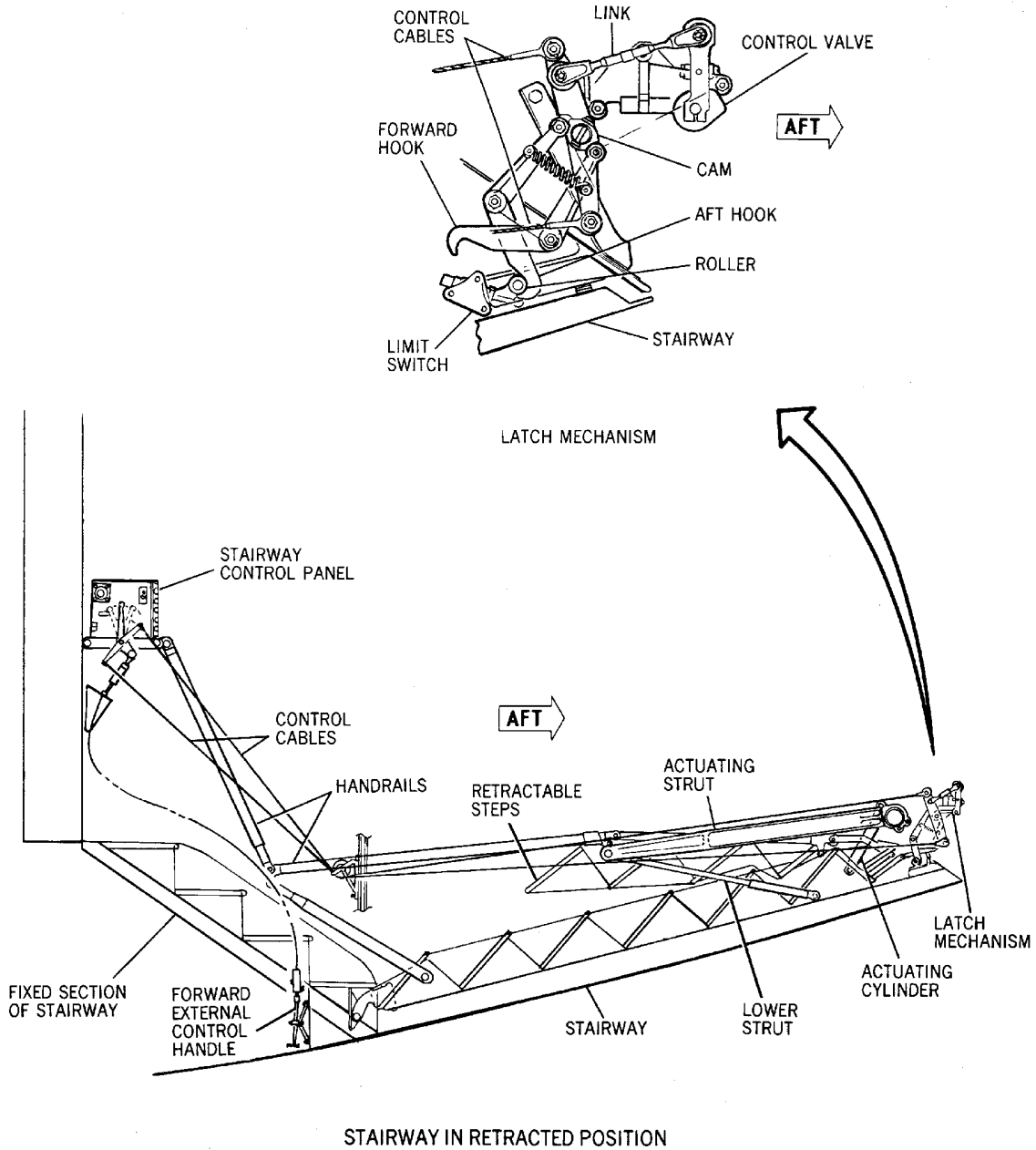
EFFECTIVITY  
WJE ALL

**52-63-00**

TP-80MM-WJE

Page 4  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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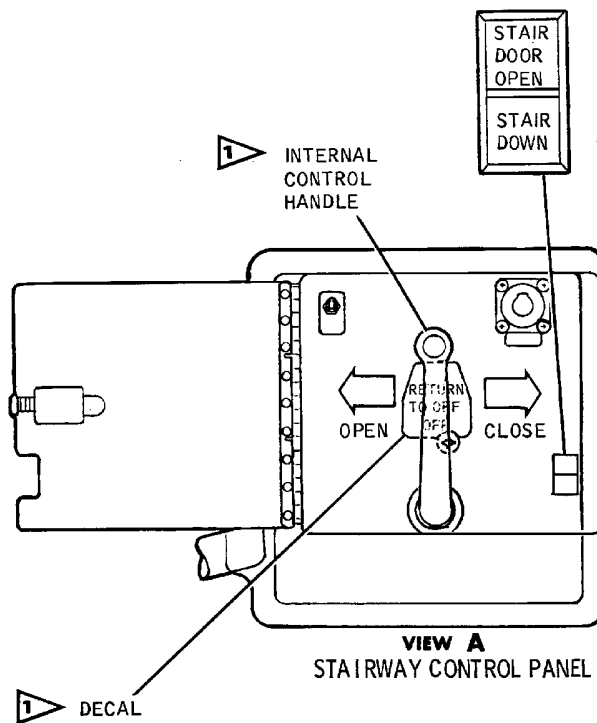
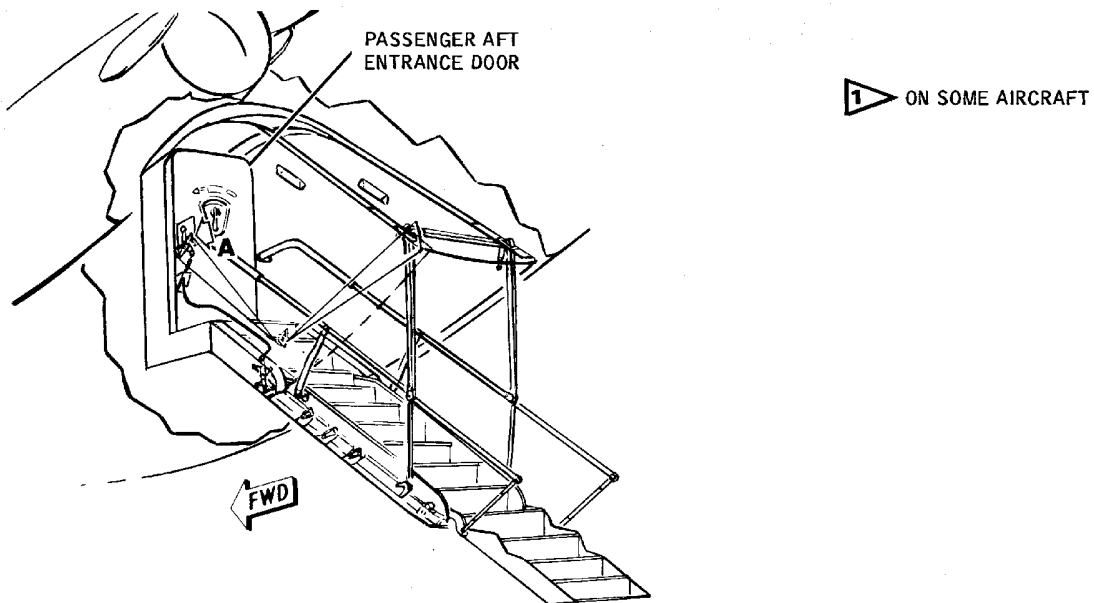
**Passenger Aft Entrance Door Stairway  
Figure 1/52-63-00-990-801 (Sheet 2 of 3)**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-5A

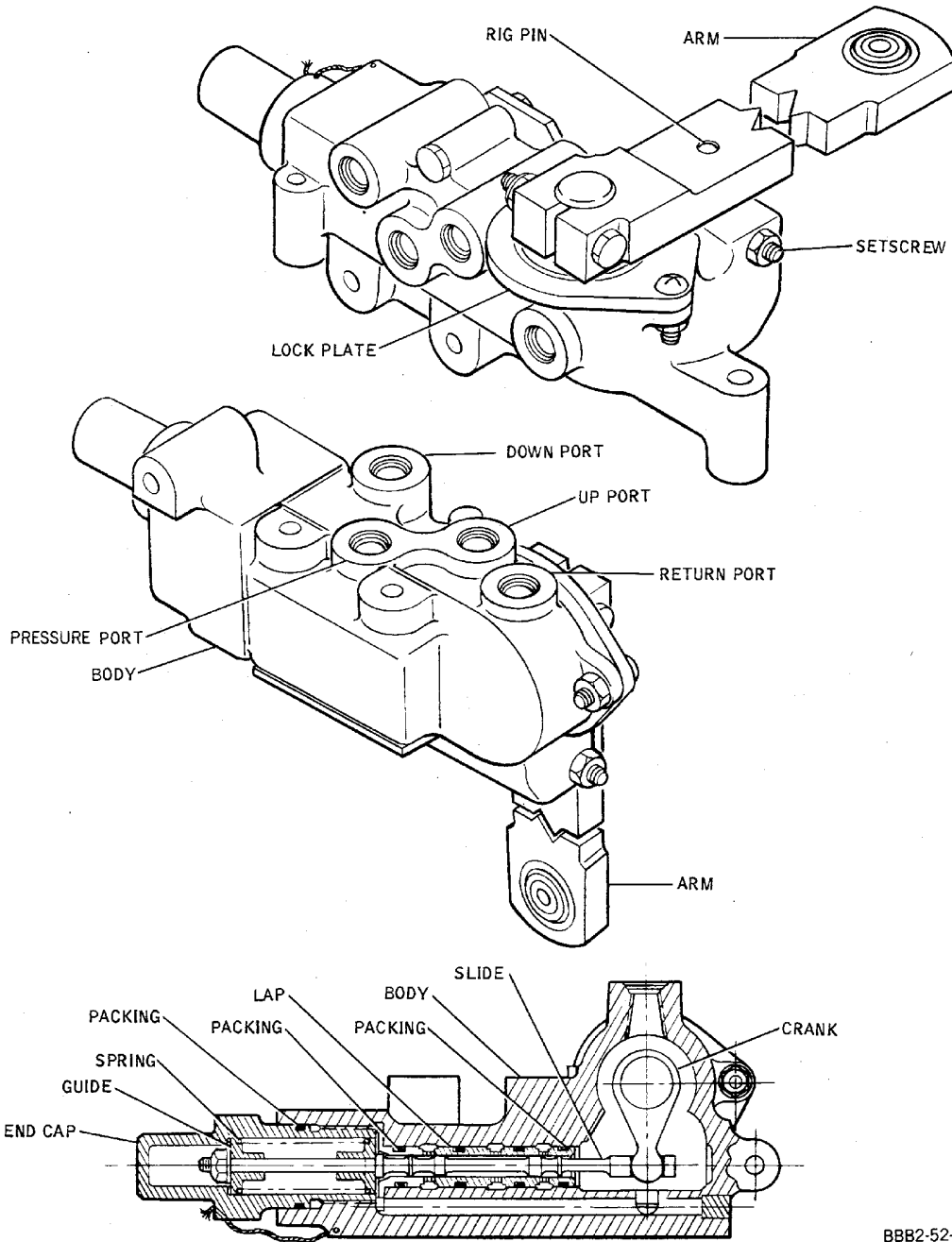
Passenger Aft Entrance Door Stairway  
Figure 1/52-63-00-990-801 (Sheet 3 of 3)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 52-63-00

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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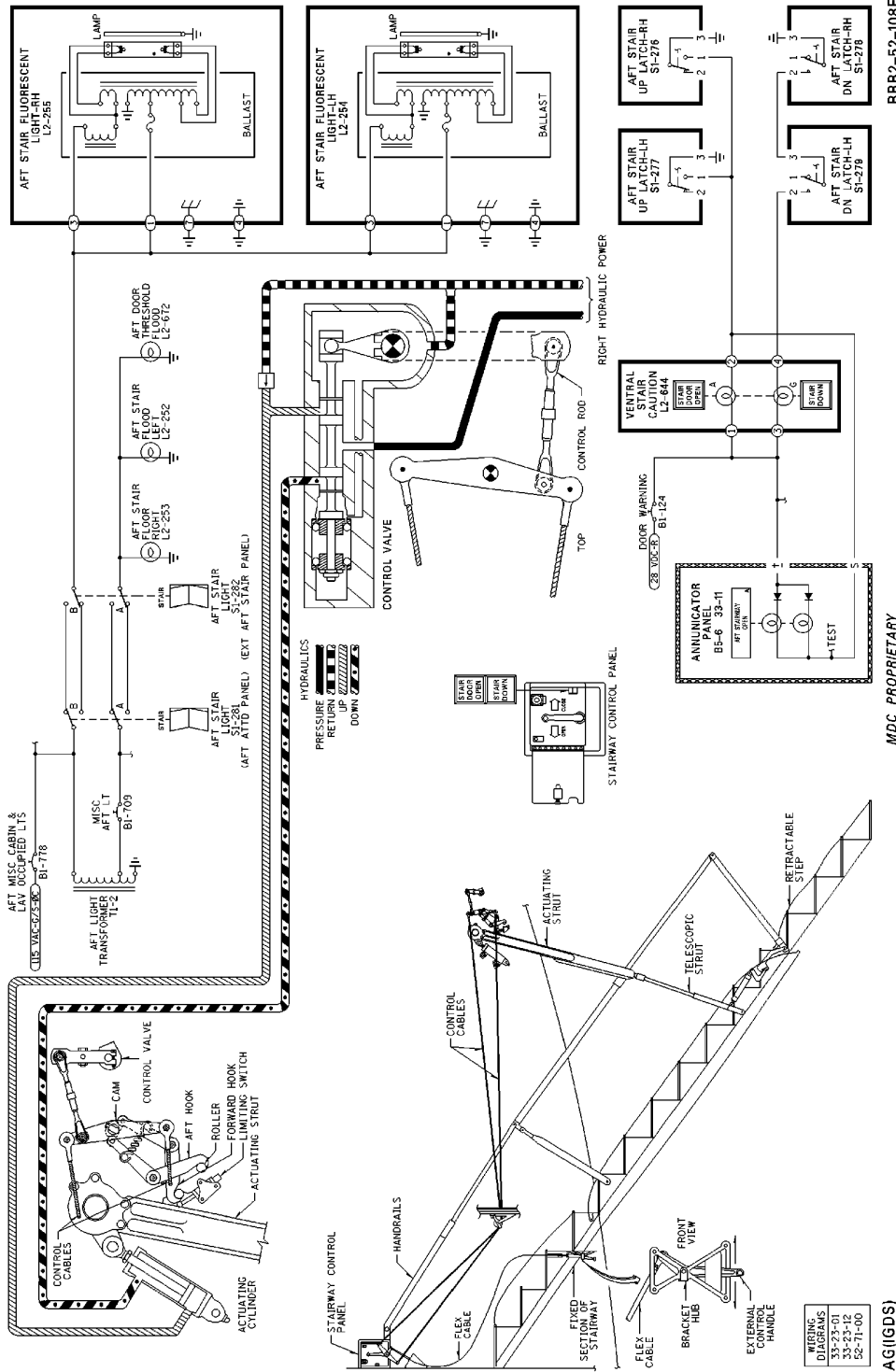
**Passenger Aft Entrance Door Stairway -- Hydraulic Control Valve  
Figure 2/52-63-00-990-802**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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MDC PROPRIETARY

CAG(I)GDS)

### Passenger Aft Entrance Door Stairway -- Schematic Figure 3/52-63-00-990-803

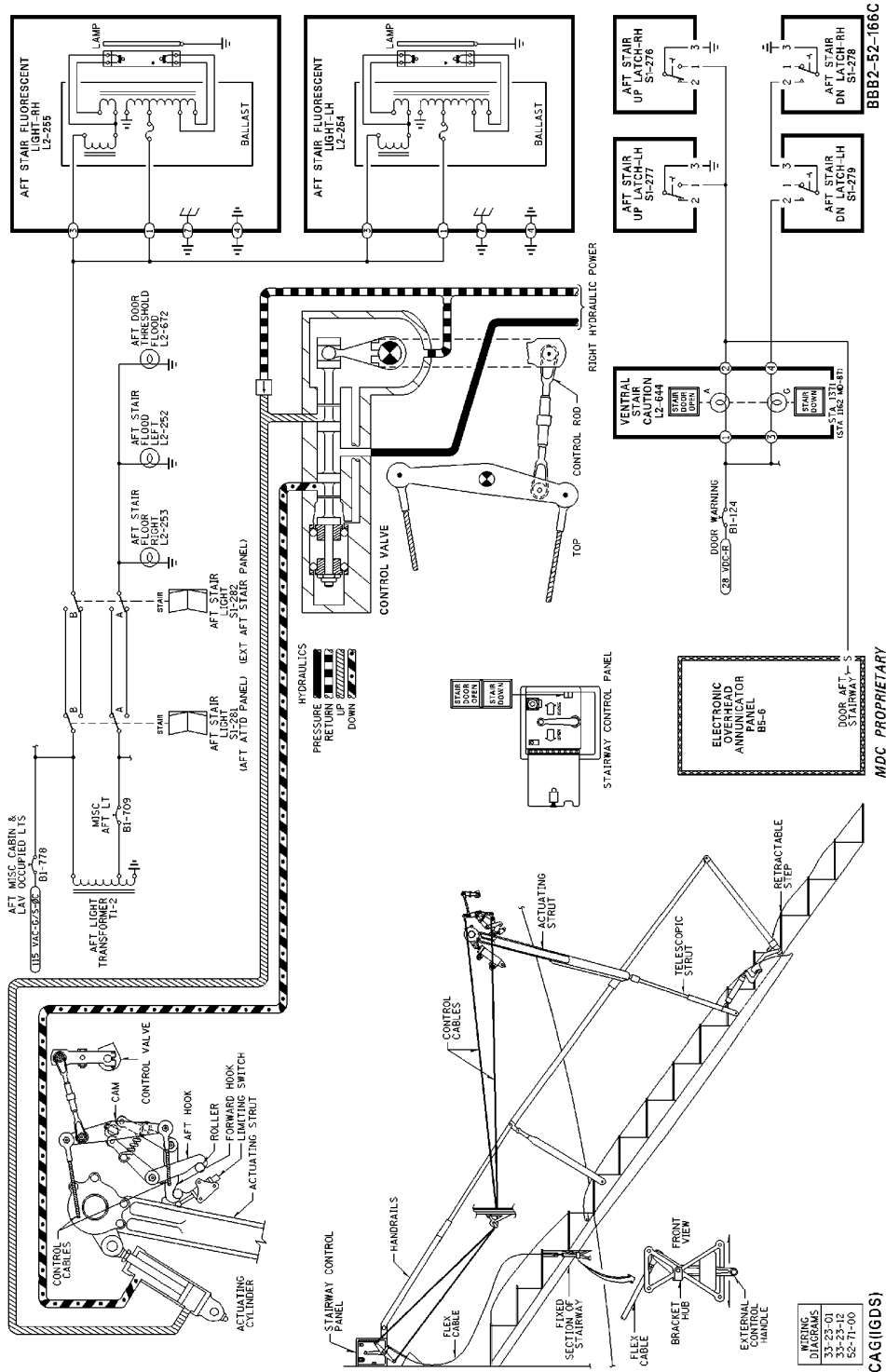
EFFECTIVITY  
 WJE 405, 407-411, 416, 420, 422, 424-427, 429, 861,  
 862, 868, 873, 874, 880, 881, 883, 884, 891-893

## 52-63-00

Page 8  
Feb 01/2016



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Aft Entrance Door Stairway -- Schematic  
Figure 4/52-63-00-990-807**

EFFECTIVITY  
WJE 401-404, 406, 412, 414, 415, 417-419, 421, 423,  
863-866, 869, 871, 872, 875-879, 886, 887

**52-63-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER AFT ENTRANCE DOOR STAIRWAY - REMOVAL/INSTALLATION

### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger aft entrance door stairway. (Figure 401)
- B. The passenger aft entrance door stairway can be removed with or without the handrails. The following removal/installation procedures are divided into two parts: stairway removal/ installation, and handrail removal/installation. If stairway and handrails are to be removed as a unit, the handrail removal procedures should be accomplished first. If stairway and hand-rails are to be installed as a unit, the stairway installation procedures should be accomplished first.

### 2. Removal/Installation Passenger Aft Entrance Door Stairway

**WARNING:** MAKE CERTAIN THAT TAIL JACK IS PROPERLY INSTALLED AT AFT JACKING POINT ON FUSELAGE BEFORE PERFORMING MAINTENANCE ON AIRCRAFT. (WING AND FUSELAGE JACKING, SUBJECT 07-11-00, PAGE 201)

#### A. Remove Stairway

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

#### **EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (2) Open stairway external control access door.
- (3) Place external control handle in down position. Stairway should be free-fall until aft end contacts ground.
- (4) Remove bolts attaching telescoping handrails to aft hand-rails.
- (5) Remove bolts attaching aft handrails to actuating strut.
- (6) Remove bolt attaching step actuating link to aft handrail post and retractable steps. Note number and position of washers.
- (7) Remove bolts attaching lower struts to stairway. Note number and position of washers.
- (8) Support stairway and remove bolts from attach fittings at forward end of stairway.

**WARNING:** PASSENGER AFT ENTRANCE DOOR STAIRWAY WEIGHS APPROXIMATELY 135 POUNDS (61 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN REMOVING STAIRWAY.

- (9) Remove stairway from aircraft.

EFFECTIVITY  
WJE ALL

# 52-63-00

TP-80MM-WJE

Page 401  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### B. Install Stairway

**NOTE:** When installing a new door, the door is interchangeable with regard to attachments, latches, hinges, and seal strikers, but may require trim and minor fitting with hand tools.

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

#### EPC CBP, LEFT GENERATOR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### UPPER EPC, LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

**WARNING:** PASSENGER AFT ENTRANCE DOOR STAIRWAY WEIGHS APPROXIMATELY 135 POUNDS (61 KG). MAKE CERTAIN THAT SUFFICIENT PERSONNEL ARE AVAILABLE TO ASSIST IN INSTALLING STAIRWAY.

- (2) Position stairway on fuselage, and install attach bolts in fittings at forward end of stairway.
- (3) Center stairway in opening in fuselage as follows:
- (a) Loosen bolts securing tension pin plates (six places) located on left and right sides of stairway jamb.
  - (b) Add or remove shims between hinge fittings and aircraft structure, and between guide blocks (located at aft end of stairway) and stairway side beams, until stairway is centered in stairway jamb, and gap between stairway door skin and fuselage skin is  $7/32$  ( $\pm 5/32$ ) inch ( $5.556$  ( $\pm 3.969$ ) mm).
  - (c) Fair door skin with fuselage skin within  $\pm 1/16$  inch ( $\pm 1.587$  mm) by adding or removing washers from tension pin studs (six places) on left and right sides of stairway side beams.
  - (d) Adjust tension pin plates so tension pins will engage plates without deflecting stairway when stairway is retracted.
- (4) Position telescoping handrails on handrail posts and install attach bolts.
- (5) Position lower struts on stairway and install attach bolts. Position washers as noted in Paragraph 2.A.(7). Washers should provide 0.032 inch (0.81 mm) minimum clearance between upper and lower struts in up position.
- (6) Tighten nut to provide clearance of 0.005 to 0.037 inch (0.13 to 0.94 mm) between two outer washers when cotter pin is installed.
- (7) Position step control rod on aft handrail post and install attach bolt. Position washers as noted in Paragraph 2.A.(6).

EFFECTIVITY  
WJE ALL

# 52-63-00

TP-80MM-WJE

Page 402  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (8) Remove the safety tags and close these circuit breakers:

**EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

**NOTE:** If stairway and handrails are being installed as a unit, leave circuit breakers open.

- (9) Check adjustment. (PAGEBLOCK 52-63-00/501)

C. Remove Handrails

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

**EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (2) Open stairway external control access door.
- (3) Place external handle in extend position and allow stairway to free-fall to ground.
- (4) Remove bolts attaching forward end of handrails to fittings on fuselage structure.
- (5) Remove bolts attaching aft end of handrails to fittings on actuator struts.
- (6) Remove bolts attaching handrail posts to handrail elbows on stairway and remove posts from elbows.

D. Install Handrails

EFFECTIVITY  
WJE ALL

**52-63-00**

TP-80MM-WJE

Page 403  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

**EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (2) Position handrail posts in elbows on stairway and install attach bolts.  
 (3) Position forward end of handrails into fittings on aircraft structure and install attach bolts.  
 (4) Align aft end of handrails with fittings on actuator struts and install attach bolts.  
 (5) Remove the safety tags and close these circuit breakers:

**EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**UPPER EPC, LEFT AC BUS**

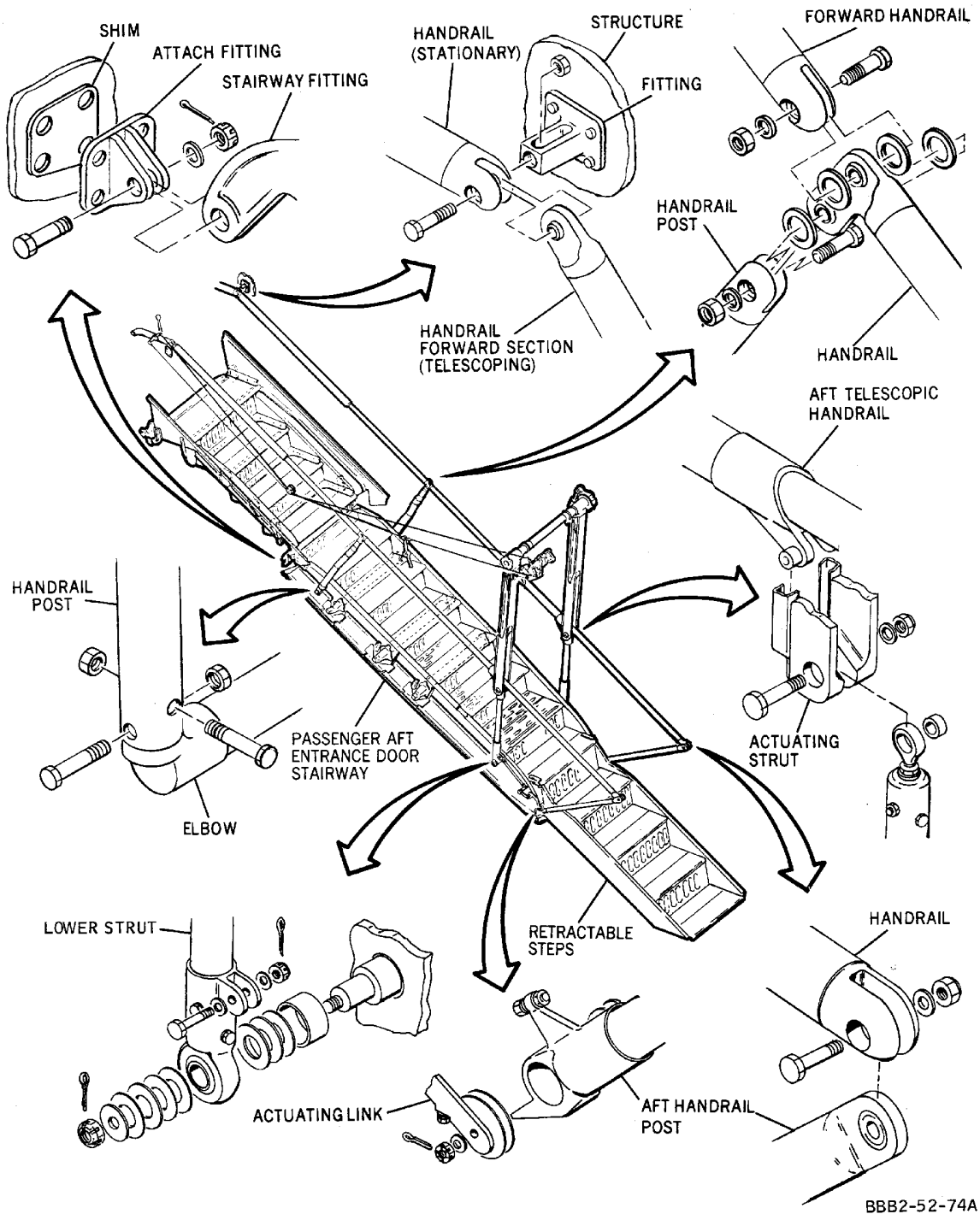
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

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**52-63-00**

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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



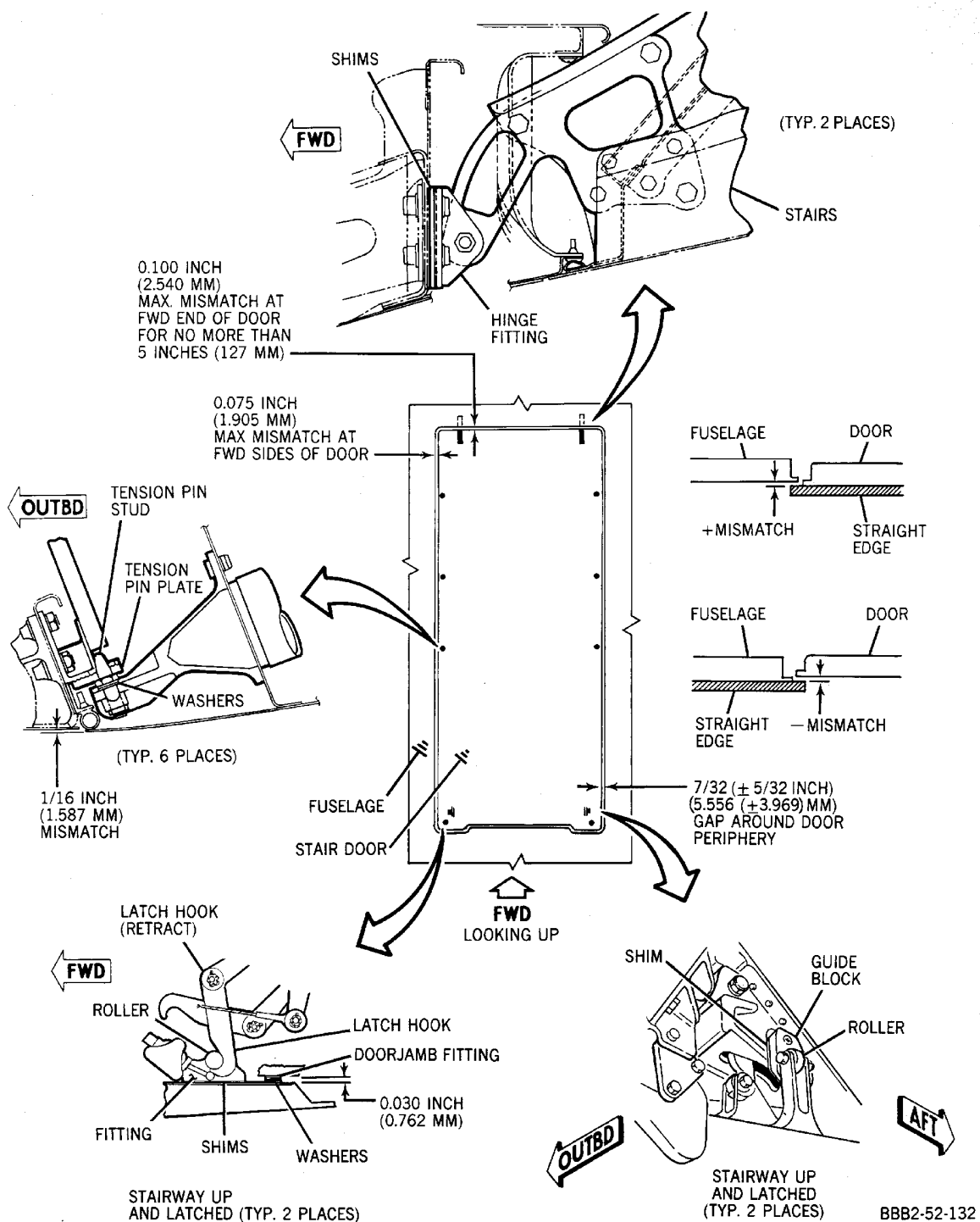
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**Passenger Aft Entrance Door Stairway -- Installation**  
Figure 401/52-63-00-990-804 (Sheet 1 of 2)

EFFECTIVITY  
WJE ALL

**52-63-00**

MD-80  
AIRCRAFT MAINTENANCE MANUAL



Passenger Aft Entrance Door Stairway -- Installation  
Figure 401/52-63-00-990-804 (Sheet 2 of 2)

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

52-63-00

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER AFT ENTRANCE DOOR STAIRWAY - ADJUSTMENT/TEST

#### 1. General

- A. This maintenance practice provides adjustment/test instructions for the passenger aft entrance door stairway. (Figure 501)
- B. When adjusting the stairway, the stairway should be extended and retracted by hydraulic pressure supplied by the hydraulic handpump. On aircraft with cooling orifices (SB 29-39), the RH spoiler shutoff and system depressurization valve must be in off position for stairway operation with handpump.
- C. All adjustments located in the aft accessory compartment are accessible from the service walkways in either side of the stairwell side panels.
- D. Refer to Paragraph 2. and Figure 502 for rig pin designations and cable tension chart. The numbers and letters enclosed by the hexagon-shaped symbol shown in the adjustment diagrams correspond to cable run numbers and segments listed at the end of this section. Each cable run number is posted adjacent to the corresponding cable in the aircraft.
- E. At each regular inspection, cables, fairleads, pulleys, and pulley guard pins should be inspected for wear and damage. Refer to CONTROL CABLES, SEALS, PULLEYS, AND PULLEY GUARD PINS - MAINTENANCE PRACTICES, PAGEBLOCK 20-10-17/201, for detailed information.

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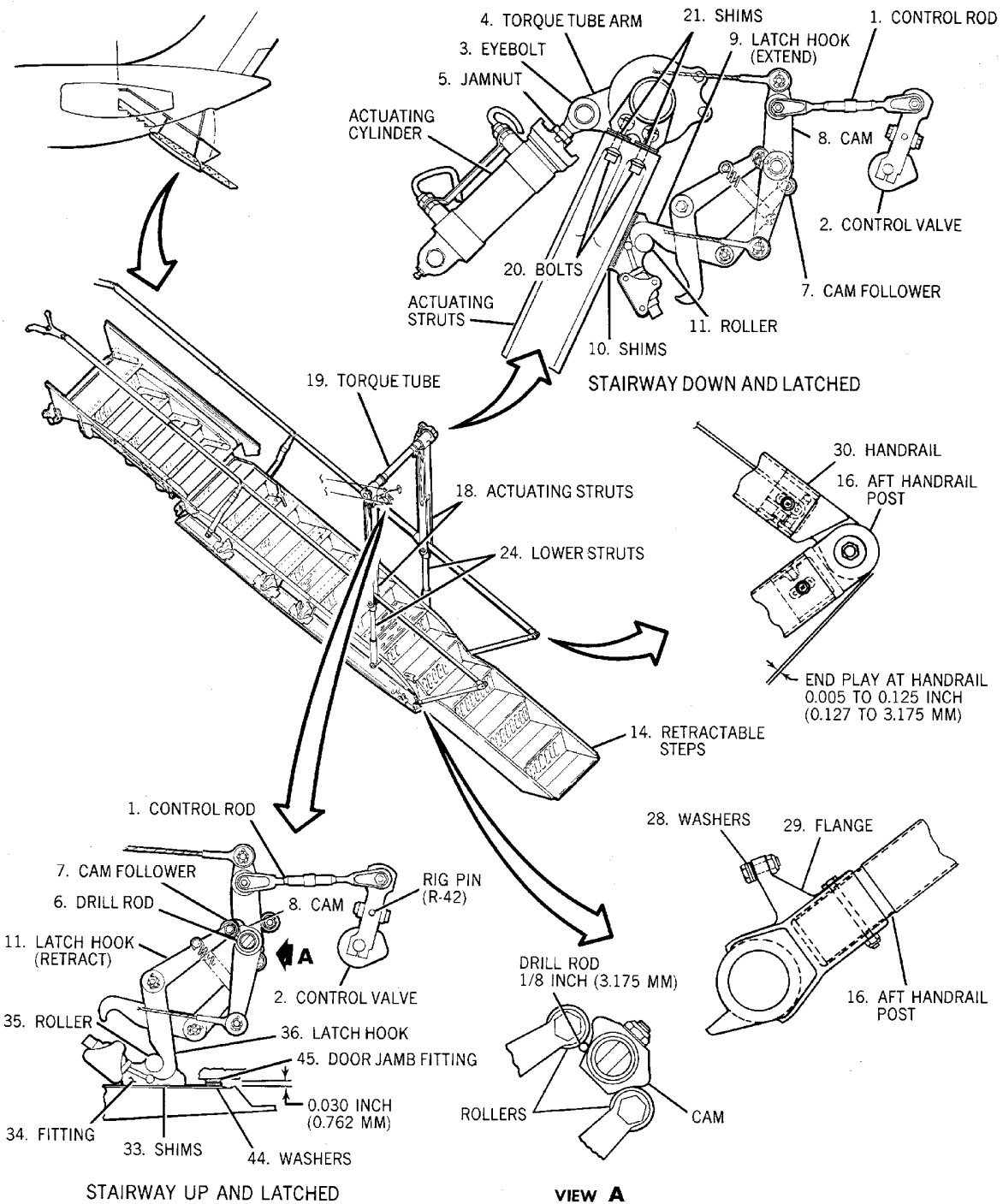
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**52-63-00**

Page 501  
Feb 01/2015



MD-80  
AIRCRAFT MAINTENANCE MANUAL



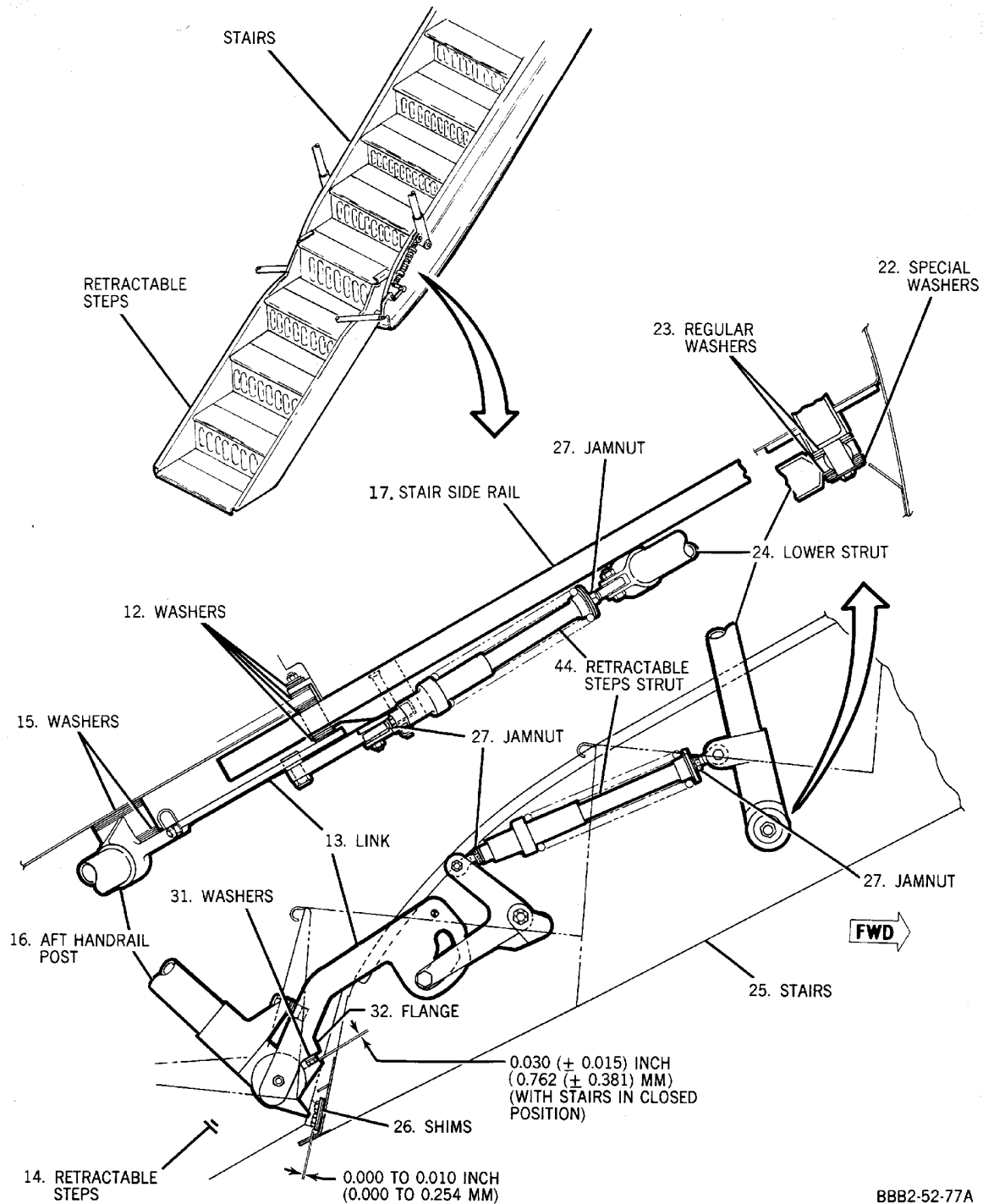
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Fuselage Aft Entrance Door Stairway -- Adjustment Figure 501  
Figure 501/52-63-00-990-805 (Sheet 1 of 3)

EFFECTIVITY  
WJE ALL

52-63-00

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Fuselage Aft Entrance Door Stairway -- Adjustment Figure 501  
Figure 501/52-63-00-990-805 (Sheet 2 of 3)**

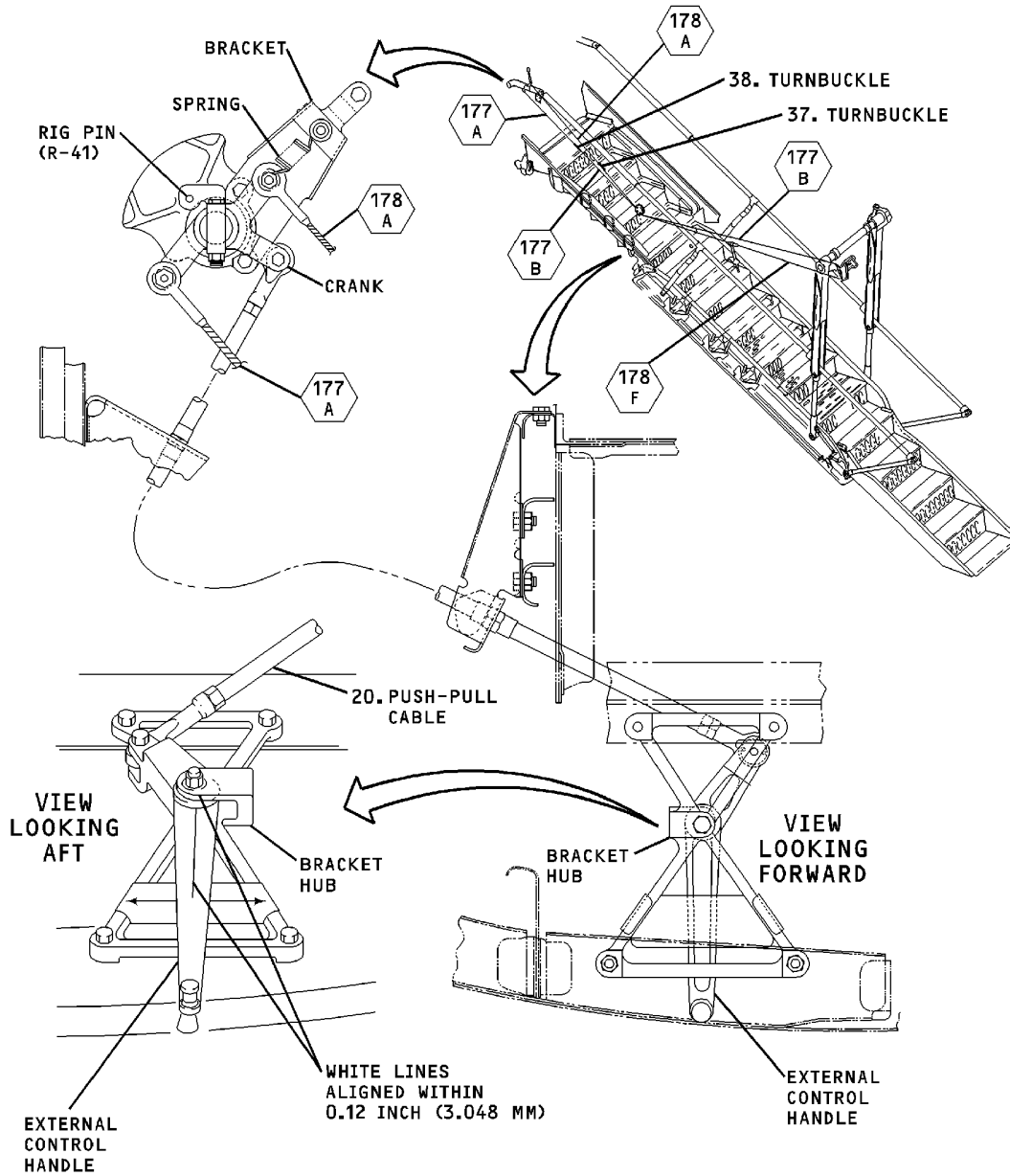
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**52-63-00**

TP-80MM-WJE

Page 503  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Fuselage Aft Entrance Door Stairway -- Adjustment Figure 501  
Figure 501/52-63-00-990-805 (Sheet 3 of 3)**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-00**

Page 504  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

CABLE TENSION TABLE – 3/32 DIAMETER

TEMP deg F	MAX PROD. RIG LOAD	MIN. PROD. RIG LOAD	MIN. ALLOW. SERV.LOAD	TEMP deg F	MAX PROD. RIG LOAD	MIN. PROD. RIG LOAD	MIN. ALLOW. SERV.LOAD
-60	7	1	0	42	31	25	18
-58	8	2	1	44	31	25	19
-56	8	2	1	46	32	26	19
-54	8	2	1	48	33	27	20
-52	9	3	1	50	33	27	20
-50	9	3	2	52	34	28	21
-48	9	3	2	54	34	28	21
-46	10	4	2	56	35	29	22
-44	10	4	2	58	36	30	22
-42	11	5	3	60	36	30	23
-40	11	5	3	62	37	31	23
-38	11	5	3	64	38	32	24
-36	12	6	4	66	38	32	24
-34	12	6	4	68	39	33	25
-32	12	6	4	70	39	33	25
-30	13	7	5	72	40	34	26
-28	13	7	5	74	41	35	26
-26	14	8	5	76	41	35	27
-24	14	8	6	78	42	36	27
-22	15	9	6	80	43	37	28
-20	15	9	6	82	44	38	28
-18	15	9	7	84	44	38	29
-16	16	10	7	86	45	39	29
-14	16	10	7	88	46	40	30
-12	17	11	8	90	46	40	30
-10	17	11	8	92	47	41	31
-8	18	12	8	94	48	42	31
-6	18	12	9	96	48	42	32
-4	19	13	9	98	49	43	33
-2	19	13	9	100	50	44	33
0	20	14	10	102	51	45	34
2	20	14	10	104	51	45	34
4	21	15	10	106	52	46	35
6	21	15	11	108	53	47	35
8	22	16	11	110	54	48	36
10	22	16	12	112	54	48	37
12	23	17	12	114	55	49	37
14	23	17	12	116	56	50	38
16	24	18	13	118	57	51	38
18	24	18	13	120	58	52	39
20	25	19	14	122	58	52	40
22	25	19	14	124	59	53	40
24	26	20	14	126	60	54	41
26	26	20	15	128	61	55	41
28	27	21	15	130	62	56	42
30	27	21	16	132	62	56	43
32	28	22	16	134	63	57	43
34	28	22	17	136	64	58	44
36	29	23	17	138	65	59	45
38	30	24	17	140	66	60	45
40	30	24	18				

**NOTE:** The minimum allowable in-service tension load is the minimum cable load acceptable before tension adjustment is required. When tension adjustment is required, increase or decrease cable tension until the final rigging load is between minimum and maximum rigging cable tension loads.

BBB2-52-172

**Cable Tension Chart  
Figure 502/52-63-00-990-806**

EFFECTIVITY	
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52-63-00

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 501**

Name and Number	Manufacturer
Inconel Lockwire 0.032 in NASM20995N32, DPM 684	Not Specified
Corrosion Resistant Steel Lockwire 0.032 in NASM20995C32, DPM 5865	Not Specified
Rig pin (R-41) 1/4 by 2 5/8	
Rig pin (R-42) 1/4 by 2 5/8	
Torque wrench (0 to 50 foot pounds range)	
<u>NOTE:</u> Rig pin sizes are in inches (diameter X length; length = grip plus 5/8 inch).	

### 3. Adjustment/Test Passenger Aft Entrance Door Stairway

**WARNING:** MAKE CERTAIN THAT TAIL JACK IS PROPERLY INSTALLED AT AFT JACKING POINT ON FUSELAGE BEFORE PERFORMING MAINTENANCE ON AIRCRAFT. (WING AND FUSELAGE JACKING, SUBJECT 07-11-00, PAGE 201)

#### A. Adjust Stairway

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open these circuit breakers and install safety tags:

#### **EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

EFFECTIVITY  
WJE ALL

# 52-63-00

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** TO PREVENT POSSIBLE DAMAGE TO STAIRWAY, DO NOT USE ANY HYDRAULIC PRESSURE TO ADJUST STAIRWAY EXCEPT THAT SUPPLIED BY HANDPUMP.

- (2) Depressurize right hydraulic system. (PAGEBLOCK 29-00-00/201)

**NOTE:** For Inspection Test Correct as Necessary (ITCAN) test procedures for the entire hydraulic system and related components, refer to MAIN - ADJUSTMENT/TEST, PAGEBLOCK 29-10-00/501.

- (3) Fully extend stairway.
- (4) Disconnect control rod (1) from control valve (2).
- (5) Disconnect eyebolt (3) from torque tube arm (4).
- (6) Position lower end of actuating struts (18) 3/4 inch (19.05 mm) overcenter.
- (7) With actuating cylinder fully retracted, adjust eyebolt (3) to align with torque tube arm (4). Install bolt. Safety nut with cotter pin.
- (8) Tighten jamnut (5) to torque of 28(±2) foot-pounds (336(±24) inch-pounds) (38.0(±2.7) N·m). Safety nut with lockwire. (LOCKWIRE SAFETYING - MAINTENANCE PRACTICES, PAGEBLOCK 20-10-18/201)
- (9) Check that cam followers (7) are against cams (8), and that cams (8) are not actuating latch hooks (9). Adjust thickness of shims (10) so rollers (11) are bottomed in latch hooks (9).
- (10) Adjust number and location of washers (12) on retractable steps pivot of link (13) to eliminate preload, and provide clearance to retractable steps (14) throughout travel.
- (11) Adjust number and location of washers (15) at lower attachment of handrail aft posts (16) so retractable steps actuating links are parallel with stair side rails (17).
- (12) Check that actuating struts (18) are 90° to torque tube (19). If not, loosen bolts (20), and add tapered shims (21) as required. Tighten bolts to torque of 200 to 225 inch-pounds (22.4 to 25.2 N·m).

**NOTE:** Make certain that forward bolts and aft bolts have same number and orientation of shims.

**NOTE:** Thickness of shims may require use of next length of bolt.

- (13) Adjust washers (22 and 23) on lower strut (24) attachment to structure to meet following requirements: 0.032 inch (0.813 mm) minimum clearance to stair structure throughout stair operation, 0.032 inch (0.813 mm) minimum between upper (18) and lower struts (24) with stairway in up position, and to position lower strut (24) as close as possible to vertical in stair down position. Special washers (22) must not be in compression, with a gap of 0.005 to 0.037 inch (0.127 to 0.939 mm) between special washers (22) and regular washers (23).
- (14) At lower end of stairs (25), add or remove shims (26) as required to make stair treads of retractable steps (14) parallel with stair treads of stairs (25).
- (15) Adjust retractable steps strut (44) to provide 0.000 to 0.010 inch (0.000 to 0.254 mm) gap between shims (26) and retractable steps. Tighten jamnuts (27) and safety with lockwire. (LOCKWIRE SAFETYING - MAINTENANCE PRACTICES, PAGEBLOCK 20-10-18/201)
- (16) With stairs in full down position, move washers (28) from one side of flange (29) to the other to provide 0.005 to 0.125 inch (0.127 to 3.175 mm) end play at aft end of handrail (30).
- (17) With stairs in full up position, move washers (31) from one side of flange (32) to the other to provide 0.030(±0.015) inch (0.762(±0.381) mm) gap.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-00**

Page 507  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (18) Adjust upper rod ends of lower struts (24) so stair door is faired when latch hooks (36) are bottomed on door rollers (35).  
NOTE: Since the torque tube (19) is driven on the right end only, the left end will lag, requiring that the left strut (24) be shorter than the right strut, so both will pull up evenly.
- (19) With stairway in closed position, insert 1/8-inch (3.2 mm) diameter drill rods (6) between cam followers (7) and cams (8).
- (20) Adjust thickness of shims (33) and fore and aft position of fittings (34) to bottom rollers (35) in latch hooks (36).
- (21) Adjust rollers (35) by shifting washers as required, to center rollers (35) in latch hooks (36).
- (22) Adjust washers (44) aft of lower latch roller (35) for gap of 0.030 inch (0.762 mm) between top of shims and doorjamb fitting (45).
- (23) Remove drill rods (6), and check that rollers (35) are bottomed in latch hooks (36).
- (24) Install rig pin (R-42) in arm on control valve (2), and adjust control rod (1) to align with arm.
- (25) Install connecting bolt. Safety nut with cotter pin.
- (26) Safety control rod turnbuckle with clips.
- (27) Loosen turnbuckles (37) and (38), and install second rig pin (R-41) in crank (40) at forward end of control cables.
- (28) Adjust turnbuckles (37) and (38) to tension control cables per 3/32-inch (2.4 mm) cable tension chart. Obtain equal tension in upper and lower cables so rig pins are not preloaded. (Figure 502)  
NOTE: To make certain that control cables are tensioned correctly, refer to GENERAL - MAINTENANCE PRACTICES, PAGEBLOCK 27-00-00/201.
- (29) Remove shield (39) from external control handle access, and adjust push-pull cable (41) until white scribe line on forward face of external handle (42) aligns within 0.12 inch (3.048 mm) of white scribe line on bracket hub (43).
- (30) Remove rig pins (R-42) from control valve (2) and (R-41) from crank (40) at forward end of control cables.
- (31) Safety turnbuckles (37) and (38) with clips and install shield (39) in external control handle access.
- (32) Check that stair door is properly faired with fuselage. (PAGEBLOCK 52-63-00/401)
- (33) Remove the safety tags and close these circuit breakers:

**EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (34) Pressurize right hydraulic system. (PAGEBLOCK 29-00-00/201)

EFFECTIVITY WJE ALL
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52-63-00

## MD-80 AIRCRAFT MAINTENANCE MANUAL

(35) Check that time required to extend stairway is 7( $\pm$ 2) seconds, to retract, 9( $\pm$ 3) seconds.

#### 4. Cable Identification

NOTE: The cable run numbers and segment letters listed below correspond to callouts in hexagonal symbols in Figure 501.

**Table 502**

Function	Cable Run Number	Segment Letter
Stairway extend	177	A
	177	B
Stairway retract	178	A
	178	* <sup>[1]</sup> F

\*[1] With air lock provisions.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-63-00

Page 509  
Feb 01/2015



# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER AFT ENTRANCE DOOR STAIRWAY - INSPECTION / CHECK

### 1. General

A. This procedure contains MSG-3 task card data.

#### **TASK 52-63-00-211-801**

### 2. Detailed Inspection of the Aft Entrance Door Control Cables

NOTE: This procedure is a scheduled maintenance task.

#### A. Equipment and Materials

Description	Part Number
Low Lint Cloth, G60085	

NOTE: It is possible that some materials in the Equipment and Materials Table cannot be used for some or all of their necessary applications. Before you use the materials, make sure the types, quantities, and applications of the materials are legally permitted in your location. All persons must obey all applicable federal, state, local and provincial laws and regulations when it is necessary to work with these materials.

#### B. References

Reference	Title
20-10-17 P/B 201	CONTROL CABLES, SEALS, PULLEYS, AND PULLEY GUARD PINS - MAINTENANCE PRACTICES
27-20-15 P/B 201	RUDDER ACCUMULATOR CYLINDER - MAINTENANCE PRACTICES
52-63-00 P/B 001	PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION

#### C. Prepare for the Detailed Inspection of the Aft Entrance Door Control Cables

**SUBTASK 52-63-00-010-001**

- (1) Place the ventral stairway external control handle in the open position. The stairway will free-fall to the extended position. (PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION, PAGEBLOCK 52-63-00/001)

**SUBTASK 52-63-00-865-001**

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (2) Make sure that these circuit breakers are open and have safety tags:

#### **EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### **UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

**SUBTASK 52-63-00-614-001**

- (3) Deplete air charge from the rudder and ventral stairway hydraulic system (right hydraulic system) accumulator. (RUDDER ACCUMULATOR CYLINDER - MAINTENANCE PRACTICES, PAGEBLOCK 27-20-15/201)

EFFECTIVITY  
WJE ALL

# 52-63-00

TP-80MM-WJE

Page 601  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### D. Detailed Inspection of the Aft Entrance Door Control Cables

SUBTASK 52-63-00-211-001

- (1) Do a detailed inspection of the aft entrance door control cables. (CONTROL CABLES, SEALS, PULLEYS, AND PULLEY GUARD PINS - MAINTENANCE PRACTICES, PAGEBLOCK 20-10-17/201)

NOTE: Occasionally, surface protective coating has to be removed from cables to perform a thorough check. Cables must be lubricated immediately after the check is completed. Use a low lint cloth and Corrosion Preventative Compound.

### E. Job Close-up

SUBTASK 52-63-00-614-002

- (1) Service the rudder and ventral stairway hydraulic system (right hydraulic system) accumulator to 1000 psi. (RUDDER ACCUMULATOR CYLINDER - MAINTENANCE PRACTICES, PAGEBLOCK 27-20-15/201)

SUBTASK 52-63-00-865-002

- (2) Make sure that these circuit breakers are closed:

#### **EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### **UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

SUBTASK 52-63-00-942-001

- (3) Raise the aft entry stairway. (PASSENGER AFT ENTRANCE DOOR STAIRWAY - DESCRIPTION AND OPERATION, PAGEBLOCK 52-63-00/001)

SUBTASK 52-63-00-942-002

- (4) Remove all the tools and equipment from the work area. Make sure area is clean.

———— **END OF TASK** ————

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-00**

Page 602  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER AFT ENTRANCE DOOR STAIRWAY CONTROL VALVE - MAINTENANCE PRACTICES

**1. General**

- A. This maintenance practice provides removal/installation and adjustment/test instructions for the passenger aft entrance door stairway control valve. (Figure 201)
- B. The valve is installed on a bracket adjacent to the stairway latch mechanism torque tube. Access to the valve is through the access door in the tail cone.
- C. The rig pin designation is listed in Paragraph 2..

**2. Equipment and Materials**

NOTE: Equivalent substitutes may be used instead of the following listed items.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Inconel Lockwire 0.032 in NASM20995N32, DPM 684	Not Specified
Corrosion Resistant Steel Lockwire 0.032 in NASM20995C32, DPM 5865	Not Specified
Rig pin (R-42) 1/4 by 2 5/8 inches	
<u>NOTE:</u> Rig pin sizes are in inches (diameter X length; length = grip plus 5/8 inch).	

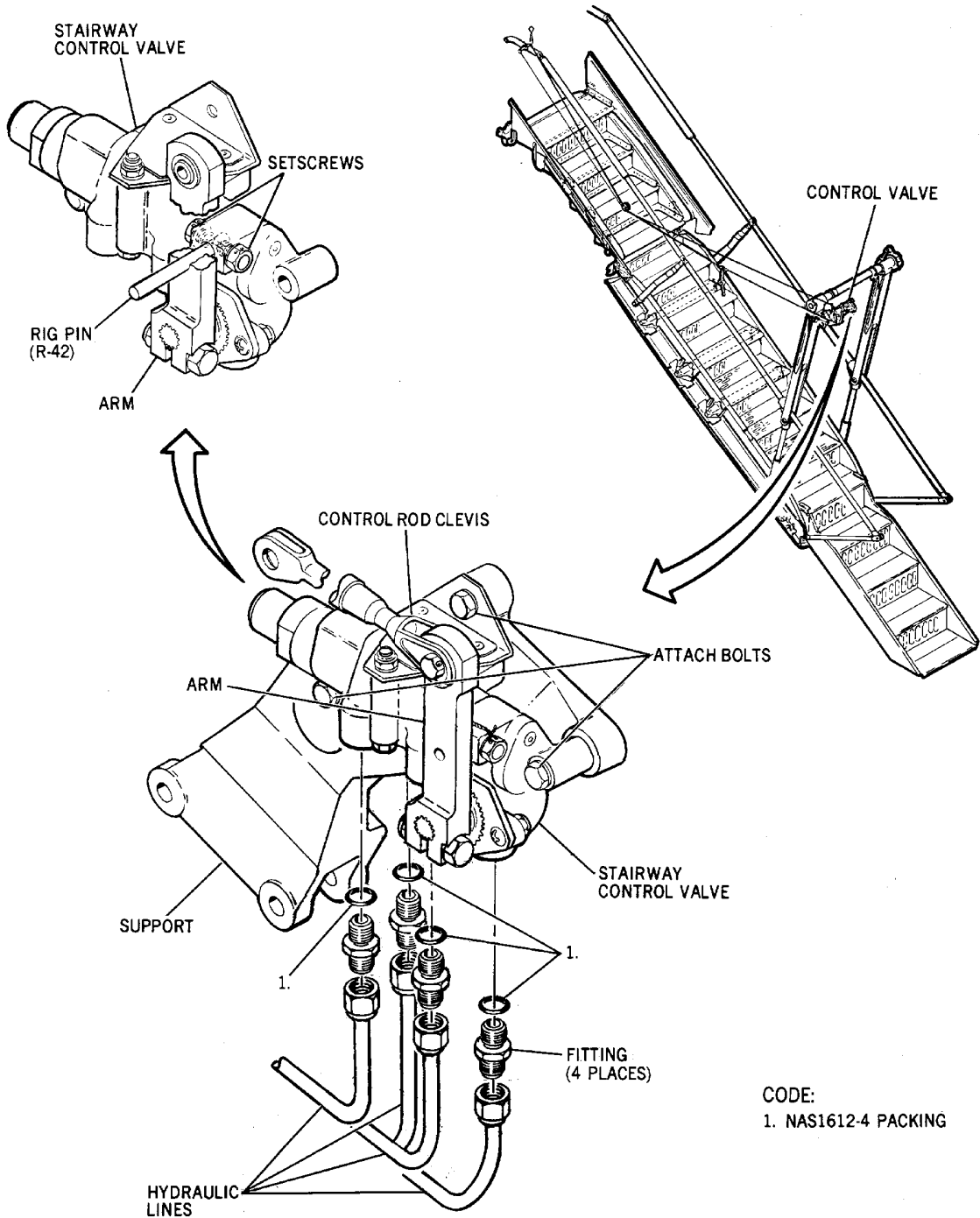
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-01**

Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



CODE:  
1. NAS1612-4 PACKING

BBB2-52-79A

**Passenger Aft Entrance Door Stairway Control Valve -- Installation**  
Figure 201/52-63-01-990-801

EFFECTIVITY  
WJE ALL

**52-63-01**

TP-80MM-WJE

Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Removal/Installation Passenger Aft Entrance Door Stairway Control Valve

#### A. Remove Valve

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

#### EPC CBP, LEFT GENERATOR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### UPPER EPC, LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (2) Depressurize right hydraulic system. (PAGEBLOCK 29-00-00/201)

**NOTE:** For Inspection Test Correct as Necessary (ITCAN) test procedures for the entire hydraulic system and related components, refer to MAIN - ADJUSTMENT/TEST, PAGEBLOCK 29-10-00/501.

- (3) Disconnect hydraulic lines from fittings on valve.
- (4) Disconnect control rod clevis from valve arm.
- (5) Remove valve attach bolts and remove valve.
- (6) Remove and retain hydraulic fittings from valve.

#### B. Install Valve

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

#### EPC CBP, LEFT GENERATOR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### UPPER EPC, LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (2) Make certain that arm on valve is properly adjusted. (Paragraph 4.)

EFFECTIVITY  
WJE ALL

# 52-63-01

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (3) Put new packings on hydraulic fittings.
- (4) Install hydraulic fittings on valve.
- (5) Position valve on valve bracket and install attach bolts.
- (6) Connect hydraulic lines to fittings on valve.
- (7) With stairway extended, and control handles in neutral position, install rig pin (R-42) in arm of control valve.
- (8) Adjust valve control rod until attach bolt can be freely inserted. Install bolt and secure control rod turnbuckle.
- (9) Remove rig pin (R-42).
- (10) Remove the safety tags and close these circuit breakers:

### **EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

### **UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

#### **4. Adjustment/Test Passenger Aft Entrance Door Stairway Control Valve**

##### **A. Adjust Valve Arm**

- (1) With valve arm in neutral (free) position install rig pin (R-42) through hole in arm and into valve.
- (2) Adjust set screws in valve body to contact rig pin; pin must be free.
- (3) Hold set screws and tighten jamnuts. Safety jamnuts with lockwire. (LOCKWIRE SAFETYING - MAINTENANCE PRACTICES, PAGEBLOCK 20-10-18/201)
- (4) Remove rig pin (R-42).

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-63-01

Page 204  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER AFT ENTRANCE DOOR STAIRWAY ACTUATING CYLINDER - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation instructions for the passenger aft entrance door stairway actuating cylinder. (Figure 201)
- B. The stairway actuating cylinder is attached to the right door-jamb structure, near the aft end of the door opening. Access to the cylinder is through the access door in the tail cone.

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

**Table 201**

Name and Number	Manufacturer
Torque wrench (0-150 foot pounds) (0-1800 inch pounds) (0.0-203.4 N·m)	Commercially available
Lockwire, NASM20995N32 DPM 684	Not Specified

#### 3. Removal/Installation Passenger Aft Entrance Door Stairway Actuating Cylinder

- A. Remove Cylinder

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open these circuit breakers and install safety tags:

##### **EPC CBP, LEFT GENERATOR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

##### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

##### **UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (2) Open stairway external control access door.
- (3) Place external control handle in open position. Stairway should free-fall to extended position.
- (4) Depressurize right hydraulic system. (PAGEBLOCK 29-00-00/201)
- (5) Actuate internal or external control handle several times to open and closed position, to relieve pressure from stairway hydraulic system.

EFFECTIVITY  
WJE ALL

# 52-63-02

TP-80MM-WJE

Page 201  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** TO AVOID POSSIBLE INJURY TO PERSONNEL, STAIRWAY HYDRAULIC SYSTEM MUST BE DEPRESSURIZED BEFORE REMOVING HYDRAULIC LINES FROM CYLINDER.

- (6) Disconnect hydraulic lines from cylinder. Cap lines and fittings.
- (7) Remove cylinder attach bolts. Retain bushing for installation.

**NOTE:** If bolts are installed with heads inboard, the stairway panel adjacent to cylinder must be removed.

### B. Install Cylinder

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that these circuit breakers are open and have safety tags:

#### EPC CBP, LEFT GENERATOR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### UPPER EPC, LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (2) Install lower attach bolt and bushing.

**NOTE:** Install bolts with heads outboard. This will eliminate removal of stairway panel for future maintenance.

- (3) With actuating cylinder fully retracted, adjust eyebolt to align with torque tube arm. Install bolt. Safety nut with cotter pin.
- (4) Tighten jamnut to torque of 28(±2) foot-pounds (336(±24) inch-pounds (38.0 N·m(±2.7 N·m))). Safety nut with lockwire.
- (5) Install hydraulic lines.
- (6) Lubricate cylinder. (PAGEBLOCK 12-21-01/301)
- (7) Install stairway panel adjacent to cylinder (if removed).
- (8) Remove the safety tags and close these circuit breakers:

#### EPC CBP, LEFT GENERATOR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-764	RIGHT AUXILIARY HYDRAULIC PUMP PHASE A, B, & C

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

EFFECTIVITY  
WJE ALL

# 52-63-02

TP-80MM-WJE

Page 202  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**UPPER EPC, LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
H	17	B1-662	RIGHT AUX HYDRAULIC PUMP CONTROL

- (9) Operate stairs 10 to 12 times through complete cycle to bleed air from system.

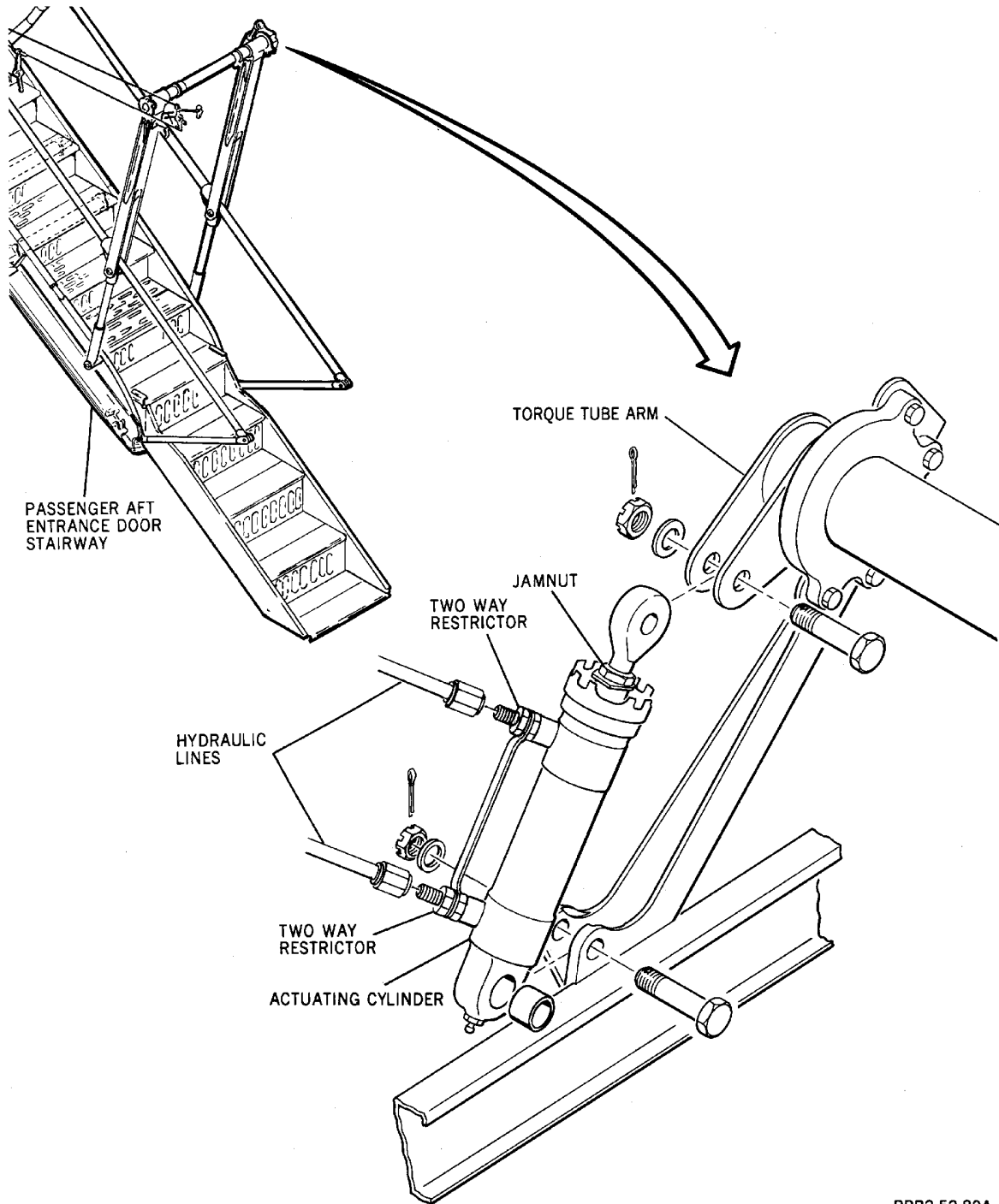
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-63-02**

Page 203  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-80A

Passenger Aft Entrance Door Stairway Actuating Cylinder -- Installation  
Figure 201/52-63-02-990-801

EFFECTIVITY  
WJE ALL

## 52-63-02

TP-80MM-WJE

Page 204  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## DOOR WARNING - DESCRIPTION AND OPERATION

### 1. General

- A. The door warning system provides the flight crew with a visual indication when any of the external doors of the compartments that can be pressurized are open, and when the passenger stairways and doors are not latched in the retracted position.

### 2. Door Warning

#### A. Description

- (1) The door warning system consists of proximity switches, mechanical switches, amber indicating lights located on the lower right side of the annunciator panel, a light on the attendant's forward panel, and two lights in the passenger aft entrance door stairway control panel. The proximity switches are installed in the doorjamb of the passenger forward and aft entrance doors, forward and aft service doors, forward, mid, and aft lower cargo compartment doors, electrical/electronics compartment door, forward accessory compartment door, and stairwell door. Two mechanical switches are provided for the forward stairwell door warning circuit. Both switches are actuated by the stairwell door latch mechanism. Four mechanical switches are provided for the passenger aft entrance door stairway warning circuit. The switches are actuated by the stairway latch mechanism.
- (2) The door warning system receives 28-volt dc power through the door warning circuit breaker on the miscellaneous bus of the lower main circuit breaker panel. The system is in operation when the bus is energized and the door warning light circuit breaker is closed. The nomenclature (visible when the lights are on) on the door warning lights on the annunciator panel indicates the doors as follows:

**Table 1**

FWD CABIN DOOR	Passenger forward entrance
FWD GALLEY DOOR	Forward service
AFT GALLEY DOOR	Aft service
FWD CARGO DOOR	Forward lower cargo compartment
MID CARGO DOOR	Mid lower cargo compartment
AFT CARGO DOOR	Aft lower cargo compartment
ELEC COMPT DOOR	Electrical/electronics compartment
ACCESS COMPT DOOR	Forward accessory compartment
FWD STAIRWAY DOOR	Forward stairwell door
AFT CABIN DOOR	Passenger aft entrance
AFT STAIRWAY DOOR	Passenger aft stairway door

#### B. Operation

- (1) When a door is opened, its proximity switch is actuated. Actuation of the switch completes a ground circuit to the warning light for that door, and a light on the annunciator panel will come on. When the door is closed and locked, the ground circuit is opened and the light goes off.

EFFECTIVITY

WJE 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891

TP-80MM-WJE

**52-70-00**

Config 1

Page 1

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (2) When either the interior or exterior forward stairwell door latch release handle is rotated to the unlatched position, the latch mechanism actuates the latch switch. When unlatched, the stairwell door will spring open far enough to actuate the door switch. When either switch is actuated, the forward stairwell door warning light on the annunciator panel and the warning light on the attendant's forward panel will come on. Both lights will remain on until the door is closed and the latches are in the door latched closed position. The light on the attendant's panel provides the attendant with visual indication that the forward stairwell door is unlatched.
- (3) When the passenger aft entrance door stairway control handle (internal or external) is actuated to the extend position, the aft hooks of the stairway latch mechanism are actuated to release the stairway. Switches (installed on the stair-way and actuated by the hooks) complete a ground circuit to the stairway warning light on the annunciator panel, and to the amber light on the stairway control panel when the stairway is released. When the ground circuit is closed, the lights will come on. When the stairway is fully extended, rollers on the stairway actuating struts engage the forward hooks of the latch mechanism. Switches on the struts are actuated by the hooks, closing the ground circuit to the green light on the stairway control panel. When the green light comes on, the stairway is latched in the extended position. When the control handle is actuated to the retract position, the rollers on the struts are released and the switches on the struts open the ground circuit to the green (stairway safe) light. The light will go off, indicating that the stairway is not latched in the extended position. When the stairway is fully retracted, the latch hooks engage rollers on the stairway, and the switches on the stairway are actuated to open the ground circuit to the warning light on the annunciator panel and the amber light on the stairway panel. When the stairway is latched in the retracted position, the lights will go off.

### EFFECTIVITY

WJE 409, 416, 420, 422, 424-427, 429, 861, 862, 868,  
874, 884, 891

TP-80MM-WJE

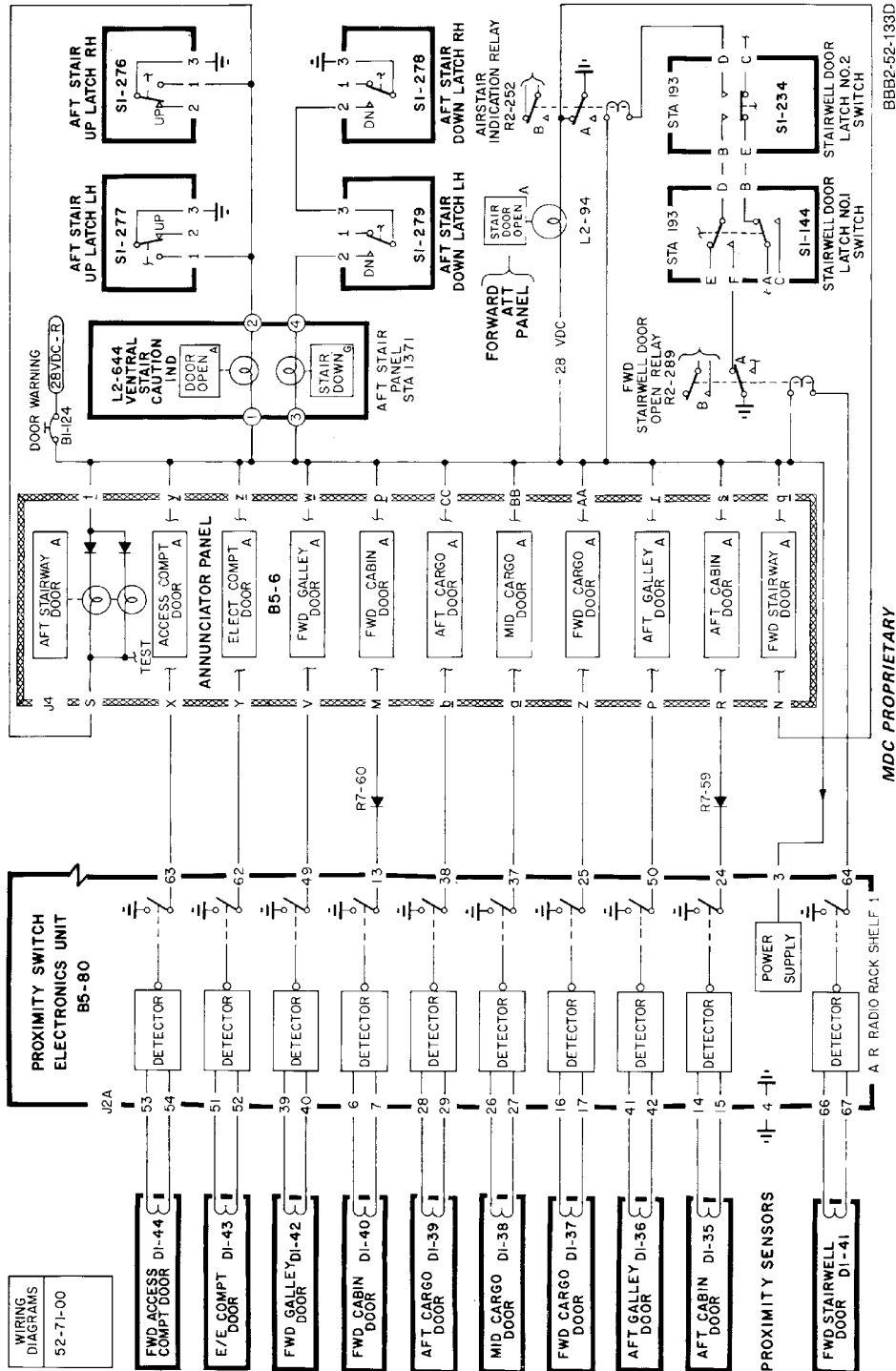
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Config 1

Page 2

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-52-133D

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**Door Warning -- Schematic**  
Figure 1/52-70-00-990-801

**EFFECTIVITY**  
WJE 409, 416, 420, 422, 424-427, 429, 861, 862, 868,  
874, 884, 891

**52-70-00**  
Config 1  
Page 3  
Feb 01/2016

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## DOOR WARNING - DESCRIPTION AND OPERATION

### 1. General

- A. The door warning system provides the flight crew with a visual indication when any of the external doors of the compartments that can be pressurized are open, when the passenger stairways and doors are not latched in the retracted position, and when the tailcone internal and external release handles are not set in the tailcone latched position.

### 2. Door Warning

#### A. Description

- (1) The door warning system consists of proximity switches, mechanical switches, amber indicating lights located on the lower right side of the annunciator panel, a light on the attendant's forward panel, and two lights on the passenger aft entrance door stairway control panel. The proximity switches are installed in the doorjamb of the passenger forward and aft entrance doors, forward and aft service doors, forward, mid, and aft lower cargo compartment doors, electrical/electronics compartment door, forward accessory compartment door, and stairwell door. Two mechanical switches are provided for the forward stairwell door warning circuit. Both switches are actuated by the stairwell door latch mechanism. Four mechanical switches are provided for the passenger aft entrance door stairway warning circuit. The switches are actuated by the stairway latch mechanism. Two mechanical switches are provided for the tailcone circuit. The switches are actuated by the internal and external release handles.
- (2) The door warning system receives 28-volt dc power through the door warning circuit breaker on the miscellaneous bus of the lower main circuit breaker panel. The system is in operation when the bus is energized and the door warning light circuit breaker is closed. The nomenclature (visible when the lights are on) on the door warning lights on the annunciator panel indicates the aircraft openings as follows:

**Table 1**

FWD CABIN DOOR	Passenger forward entrance
FWD GALLEY DOOR	Forward service
AFT GALLEY DOOR	Aft service
FWD CARGO DOOR	Forward lower cargo compartment
MID CARGO DOOR	Mid lower cargo compartment
AFT CARGO DOOR	Aft lower cargo compartment
ELEC COMPT DOOR	Electrical/electronics compartment
ACCESS COMPT DOOR	Forward accessory compartment
FWD STAIRWAY DOOR	Forward stairwell door
AFT CABIN DOOR	Passenger aft entrance
AFT STAIRWAY DOOR	Passenger aft stairway door
TAILCONE	Tailcone

#### B. Operation

- (1) When a door is opened, its proximity switch is actuated. Actuation of the switch completes a ground circuit to the warning light for that door, and a light on the annunciator panel will come on. When the door is closed and locked, the ground circuit is opened and the light goes off.

EFFECTIVITY  
WJE 874

TP-80MM-WJE

**52-70-00**

Config 2

Page 1

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (2) When either the interior or exterior forward stairwell door latch release handle is rotated to the unlatched position, the latch mechanism actuates the latch switch. When unlatched, the stairwell door will spring open far enough to actuate the door switch. When either switch is actuated, the forward stairwell door warning light on the annunciator panel and the warning light on the attendant's forward panel will come on. Both lights will remain on until the door is closed and the latches are in the door latched closed position. The light on the attendant's panel provides the attendant with visual indication that the forward stairwell door is unlatched.
- (3) When the passenger aft entrance door stairway control handle (internal or external) is actuated to the extend position, the aft hooks of the stairway latch mechanism are actuated to release the stairway. Switches (installed on the stair-way and actuated by the hooks) complete a ground circuit to the stairway warning light on the annunciator panel, and to the amber light on the stairway control panel when the stairway is released. When the ground circuit is closed, the lights will come on. When the stairway is fully extended, rollers on the stairway actuating struts engage the forward hooks of the latch mechanism. Switches on the struts are actuated by the hooks, closing the ground circuit to the green light on the stairway control panel. When the green light comes on, the stairway is latched in the extended position. When the control handle is actuated to the retract position, the rollers on the struts are released and the switches on the struts open the ground circuit to the green (stairway safe) light. The light will go off, indicating that the stairway is not latched in the extended position. When the stairway is fully retracted, the latch hooks engage rollers on the stairway, and the switches on the stairway are actuated to open the ground circuit to the warning light on the annunciator panel and the amber light on the stairway panel. When the stairway is latched in the retracted position, the lights will go off.
- (4) When either the internal or external tailcone release handle is pulled from its socket, a mechanical switch is actuated to complete a ground circuit to the tailcone warning light on the annunciator panel. When the ground circuit is closed, the light will come on. When the tailcone is relatched, and the handle reset in its socket, the switch is actuated to open the ground circuit to the warning light. When the ground circuit to the warning light is opened, the light will go out.

EFFECTIVITY  
WJE 874

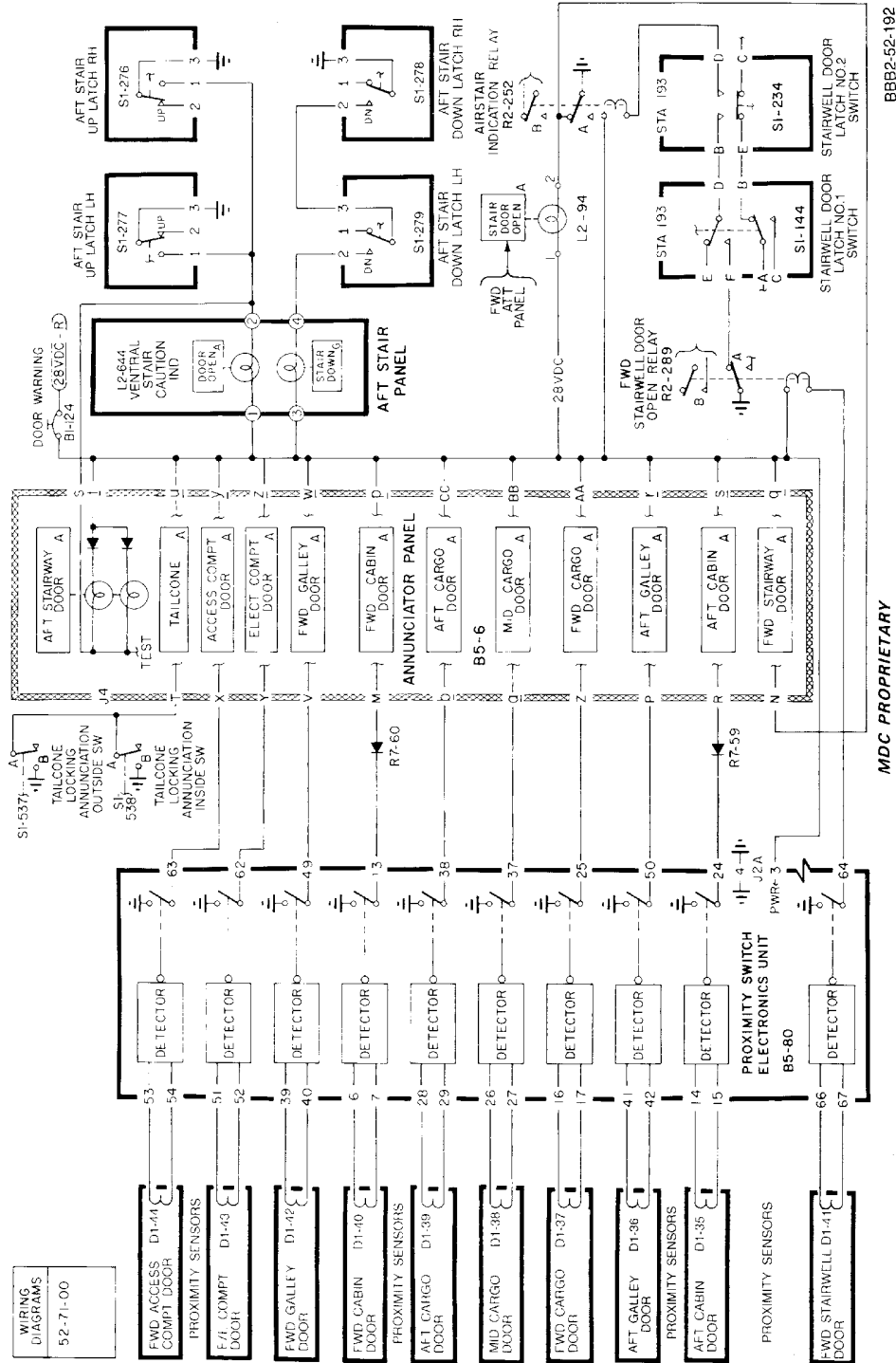
TP-80MM-WJE

**52-70-00**

Config 2  
Page 2

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Door Warning -- Schematic**  
Figure 1/52-70-00-990-802 (Sheet 1 of 2)

EFFECTIVITY  
WJE 874

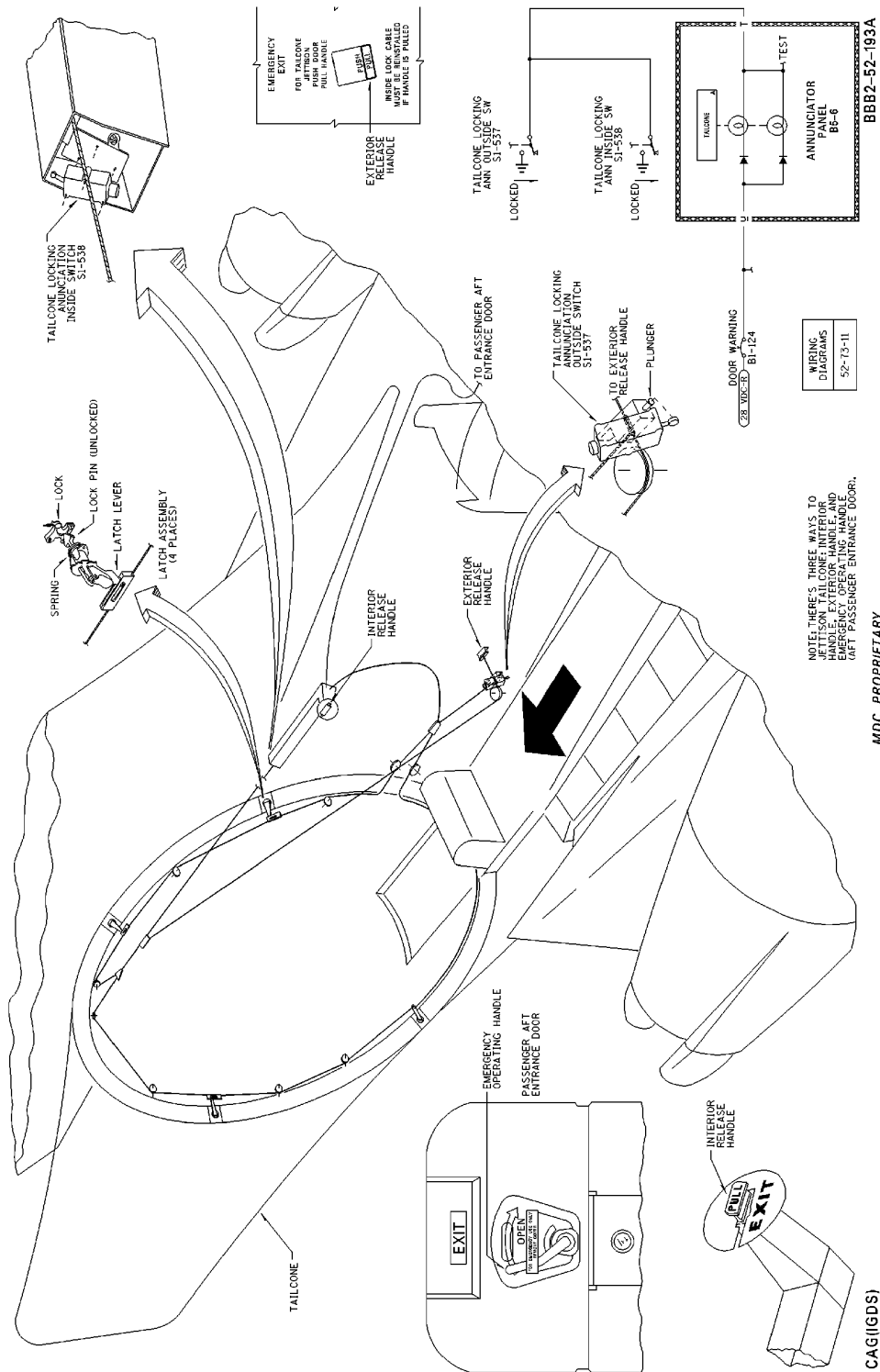
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Config 2  
Page 3  
Feb 01/2016

TP-80MM-WJE



# MD-80 AIRCRAFT MAINTENANCE MANUAL



Door Warning -- Schematic  
Figure 1/52-70-00-990-802 (Sheet 2 of 2)

EFFECTIVITY  
WJE 874; with SB 53-199 incorp.

TP-80MM-WJE

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52-70-00

Config 2

Page 4

Feb 01/2016

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## DOOR WARNING - DESCRIPTION AND OPERATION

### 1. General

- A. The door warning system provides the flight crew with a visual indication when any of the external doors of the compartments that can be pressurized are open, when the passenger stairways and doors are not latched in the retracted position, and when the tailcone internal and external release handles are not set in the tailcone latched position.

### 2. Door Warning

#### A. Description

- (1) The door warning system consists of proximity switches, mechanical switches, amber indicating lights located on the lower right side of the annunciator panel, a light on the attendant's forward panel (press-to-test), and two lights on the passenger aft entrance door stairway control panel. The proximity switches are installed in the doorjamb of the passenger forward and aft entrance doors, forward and aft service doors, forward, mid, and aft lower cargo compartment doors, electrical/electronics compartment door, forward accessory compartment door, and stairwell door. Two mechanical switches are provided for the forward stairwell door warning circuit. Both switches are actuated by the stairwell door latch mechanism. Four mechanical switches are provided for the passenger aft entrance door stairway warning circuit. The switches are actuated by the stairway latch mechanism. Two mechanical switches are provided for the tailcone circuit. The switches are actuated by the internal and external release handles.
- (2) The door warning system receives 28-volt dc power through the door warning circuit breaker on the miscellaneous bus of the lower main circuit breaker panel. The system is in operation when the bus is energized and the door warning light circuit breaker is closed. The nomenclature (visible when the lights are on) on the door warning lights on the annunciator panel indicates the aircraft openings as follows:

**Table 1**

FWD CABIN DOOR	Passenger forward entrance
FWD GALLEY DOOR	Forward service
AFT GALLEY DOOR	Aft service
FWD CARGO DOOR	Forward lower cargo compartment
MID CARGO DOOR	Mid lower cargo compartment
AFT CARGO DOOR	Aft lower cargo compartment
ELEC COMPT DOOR	Electrical/electronics compartment
ACCESS COMPT DOOR	Forward accessory compartment
FWD STAIRWAY DOOR	Forward stairwell door
AFT CABIN DOOR	Passenger aft entrance
AFT STAIRWAY DOOR	Passenger aft stairway door
TAILCONE	Tailcone

#### B. Operation

- (1) When a door is opened, its proximity switch is actuated. Actuation of the switch completes a ground circuit to the warning light for that door, and a light on the annunciator panel will come on. When the door is closed and locked, the ground circuit is opened and the light goes off.

EFFECTIVITY  
WJE 405-408, 410, 411, 880, 881, 883, 892, 893

TP-80MM-WJE

**52-70-00**

Config 3

Page 1

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (2) When either the interior or exterior forward stairwell door latch release handle is rotated to the unlatched position, the latch mechanism actuates the latch switch. When unlatched, the stairwell door will spring open far enough to actuate the door switch. When either switch is actuated, the forward stairwell door warning light on the annunciator panel and the warning light on the attendant's forward panel will come on. Both lights will remain on until the door is closed and the latches are in the door latched closed position. The light on the attendant's panel provides the attendant with visual indication that the forward stairwell door is unlatched.
- (3) When the passenger aft entrance door stairway control handle (internal or external) is actuated to the extend position, the aft hooks of the stairway latch mechanism are actuated to release the stairway. Switches (installed on the stair-way and actuated by the hooks) complete a ground circuit to the stairway warning light on the annunciator panel, and to the amber light on the stairway control panel when the stairway is released. When the ground circuit is closed, the lights will come on. When the stairway is fully extended, rollers on the stairway actuating struts engage the forward hooks of the latch mechanism. Switches on the struts are actuated by the hooks, closing the ground circuit to the green light on the stairway control panel. When the green light comes on, the stairway is latched in the extended position. When the control handle is actuated to the retract position, the rollers on the struts are released and the switches on the struts open the ground circuit to the green (stairway safe) light. The light will go off, indicating that the stairway is not latched in the extended position. When the stairway is fully retracted, the latch hooks engage rollers on the stairway, and the switches on the stairway are actuated to open the ground circuit to the warning light on the annunciator panel and the amber light on the stairway panel. When the stairway is latched in the retracted position, the lights will go off.
- (4) When either the internal or external tailcone release handle is pulled from its socket, a mechanical switch is actuated to complete a ground circuit to the tailcone warning light on the annunciator panel. When the ground circuit is closed, the light will come on. When the tailcone is relatched, and the handle reset in its socket, the switch is actuated to open the ground circuit to the warning light. When the ground circuit to the warning light is opened, the light will go out.

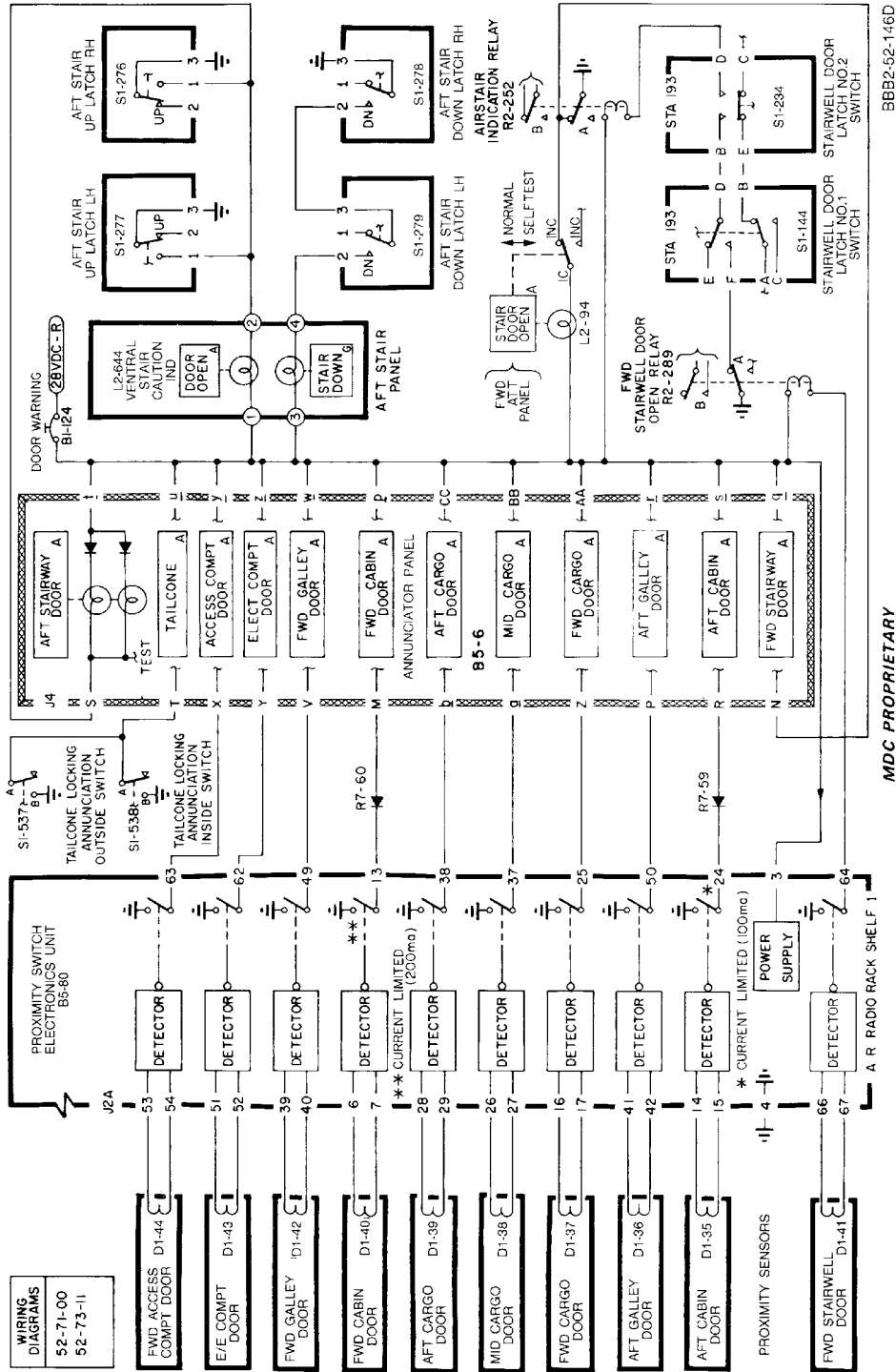
EFFECTIVITY  
WJE 405-408, 410, 411, 880, 881, 883, 892, 893

TP-80MM-WJE

**52-70-00**

Config 3  
Page 2  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL



**Door Warning -- Schematic**  
Figure 1/52-70-00-990-803 (Sheet 1 of 2)

EFFECTIVITY  
WJE 405-408, 410, 411, 880, 881, 883, 892, 893

TP-80MM-WJE

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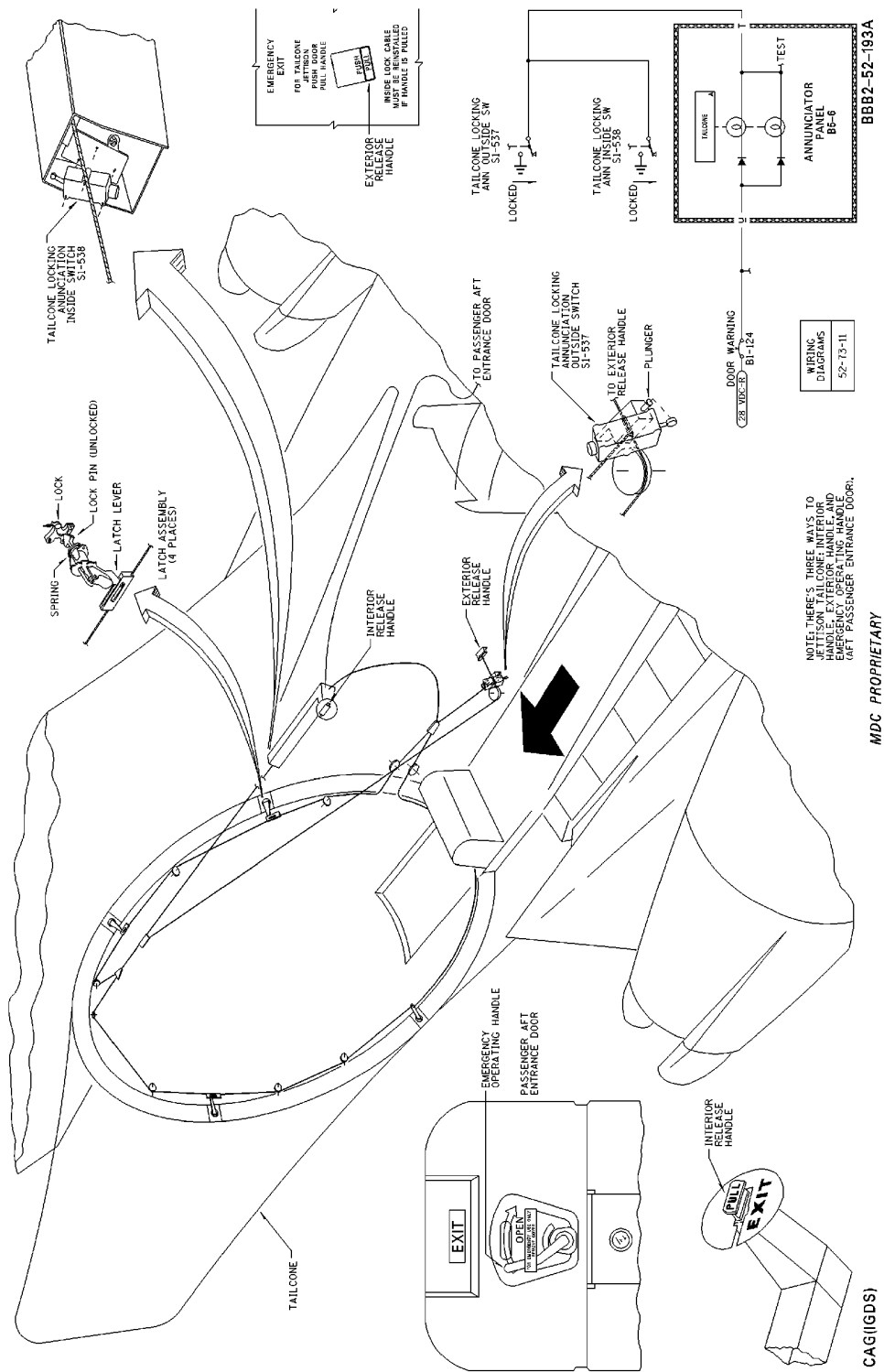
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Config 3

Page 3

Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Door Warning -- Schematic**  
**Figure 1/52-70-00-990-803 (Sheet 2 of 2)**

EFFECTIVITY  
WJE 405-408, 410, 411, 880, 881, 883, 892, 893

TP-80MM-WJE

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**52-70-00**

Config 3

Page 4

Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## DOOR WARNING - DESCRIPTION AND OPERATION

### 1. General

- A. The door warning system provides the flight crew with a visual indication when any of the external doors of the compartments that can be pressurized are open, when the passenger stairways and doors are not latched in the retracted position, and when the tailcone internal and external release handles are not set in the tailcone latched position.

### 2. Door Warning

#### A. Description

- (1) Electronic Overhead Annunciator Panel (EOAP)
  - (a) The door warning portion of the EOAP consists of the two scroll buttons (arrows), the DOOR cue button, and the two scrolling light emitting diode (LED) screens.
  - (b) When a door warning message is received by the EOAP, the DOOR button flashes on and off four times, and the message is printed on the screen. The messages are printed in chronological order in which they are received. They are printed down the left screen, then down the right screen. When more messages line up than there is screen capacity, the up scroll arrow button is lighted. When pressed, the messages will scroll up the right screen, jump to the left screen, and scroll upward exiting at the top of the left screen, at which time the down scroll arrow is lighted.
  - (c) When the DOOR cue button flashes on and off four times, and remains lighted (when the screens are full, and a door warning signal is waiting in line), the button is pressed, and the door warning signal will be printed on the screen as long as the button is held in, and for approximately five seconds after the button is released, after which the original screen will appear. Pushing the scroll arrow button will move the signal on screen in its turn.
- (2) The door warning system consists of proximity switches, mechanical switches, amber notations on the scrolling type electronic screen on annunciator panel, a light on the attendant's forward panel, and two lights in the passenger aft entrance door stairway control panel. The proximity switches are installed in the doorjamb of the passenger forward and aft entrance doors, forward and aft service doors, forward, mid, and aft lower cargo compartment doors, electrical/electronics compartment door, forward accessory compartment door, and stairwell door. Two mechanical switches are provided for the forward stairwell door warning circuit. Both switches are actuated by the stairwell door latch mechanism. Four mechanical switches are provided for the passenger aft entrance door stairway warning circuit. The switches are actuated by the stairway latch mechanism. Two mechanical switches are provided for the tailcone circuit. The switches are actuated by the internal and external release handles.
- (3) The door warning system receives 28-volt dc power through the door warning circuit breaker on the miscellaneous bus of the lower main circuit breaker panel. The system is in operation when the bus is energized and the door warning light circuit breaker is closed. The nomenclature (when the circuits are activated) on the door warning scroll of the annunciator panel indicates the doors and tailcone as follows:

**Table 1**

FWD CABIN DOOR	Passenger forward entrance
FWD GALLEY DOOR	Forward service
AFT GALLEY DOOR	Aft service
FWD CARGO DOOR	Forward lower cargo compartment

**EFFECTIVITY**

**WJE 401-404, 412, 414, 415, 417, 419, 421, 423, 863-866, 875-879, 886, 887**

TP-80MM-WJE

**52-70-00**

Config 4

Page 1

Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 1 (Continued)**

MID CARGO DOOR	Mid lower cargo compartment
AFT CARGO DOOR	Aft lower cargo compartment
ELEC COMPT DOOR	Electrical/electronics compartment
ACCESS COMPT DOOR	Forward accessory compartment
FWD STAIRWAY DOOR	Forward stairwell door
AFT CABIN DOOR	Passenger aft entrance
AFT STAIRWAY DOOR	Passenger aft stairway door
TAILCONE	Tailcone

**B. Operation**

- (1) When a door is opened, its proximity switch is actuated. Actuation of the switch completes a ground warning circuit for that door, and a warning signal will be generated for the EOAP. When the door is closed and locked, the ground circuit is opened and the signal is cancelled.
- (2) When either the interior or exterior forward stairwell door latch release handle is rotated to the unlatched position, the latch mechanism actuates the latch switch. When unlatched, the stairwell door will spring open far enough to actuate the door switch. When either switch is actuated, a signal is generated for the EOAP and the warning light on the attendant's forward panel will come on. Both will remain on until the door is closed and the latches are in the door latched closed position. The light on the attendant's panel provides the attendant with visual indication that the forward stairwell door is unlatched.
- (3) When the passenger aft entrance door stairway control handle (internal or external) is actuated to the extend position, the aft hooks of the stairway latch mechanism are actuated to release the stairway. Switches (installed on the stairway and actuated by the hooks) complete a ground circuit for a signal to the annunciator panel, and to the amber light on the stairway control panel when the stairway is released. When the ground circuit is closed, the light will come on. When the stairway is fully extended, rollers on the stairway actuating struts engage the forward hooks of the latch mechanism. Switches on the struts are actuated by the hooks, closing the ground circuit to the green light on the stairway control panel. When the green light comes on, the stairway is latched in the extended position. When the control handle is actuated to the retract position, the rollers on the struts are released and the switches on the struts open the ground circuit to the green (stairway safe) light. The light will go off, indicating that the stairway is not latched in the extended position. When the stairway is fully retracted, the latch hooks engage rollers on the stairway, and the switches on the stairway are actuated to open the ground circuit to cancel the signal the EOAP and the amber light on the stairway panel. When the stairway is latched in the retracted position, the lights will go off and the signal will be cancelled.
- (4) When either the internal or external tailcone release handle is pulled from its socket, a mechanical switch is actuated to complete a ground circuit for a signal to the EOAP. When the tailcone is relatched, and the handle reset in its socket, the switch is actuated to open the ground circuit, cancelling the signal to the EOAP.

**EFFECTIVITY**

**WJE 401-404, 412, 414, 415, 417, 419, 421, 423,  
863-866, 875-879, 886, 887**

TP-80MM-WJE

**52-70-00**

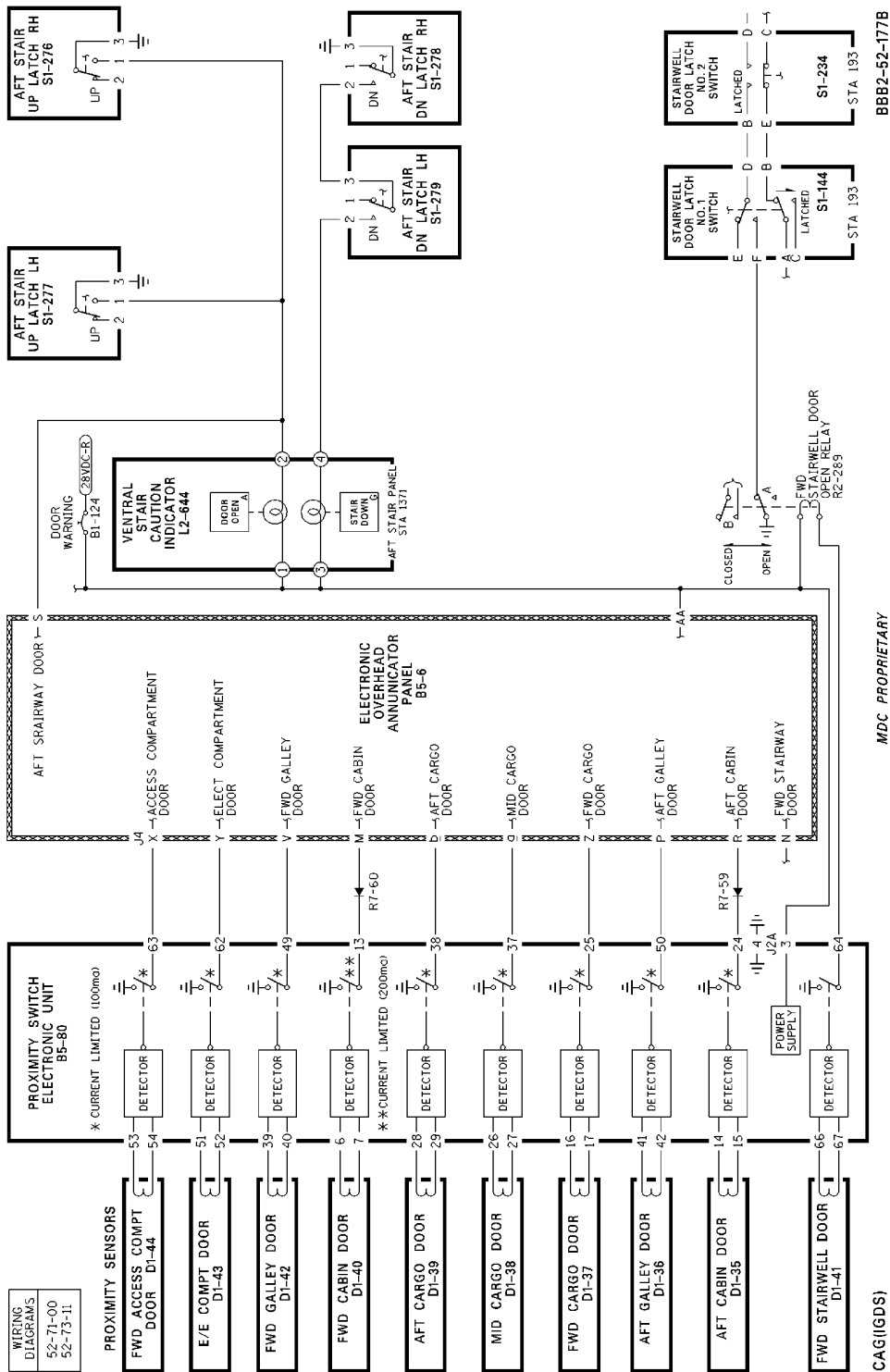
Config 4

Page 2

Feb 01/2016



# MD-80 AIRCRAFT MAINTENANCE MANUAL



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CAG(I)GDS

Door Warning -- Schematic  
Figure 1/52-70-00-990-804 (Sheet 1 of 2)

EFFECTIVITY  
WJE 401-404, 412, 414, 415, 417, 419, 421, 423,  
863-866, 875-879, 886, 887

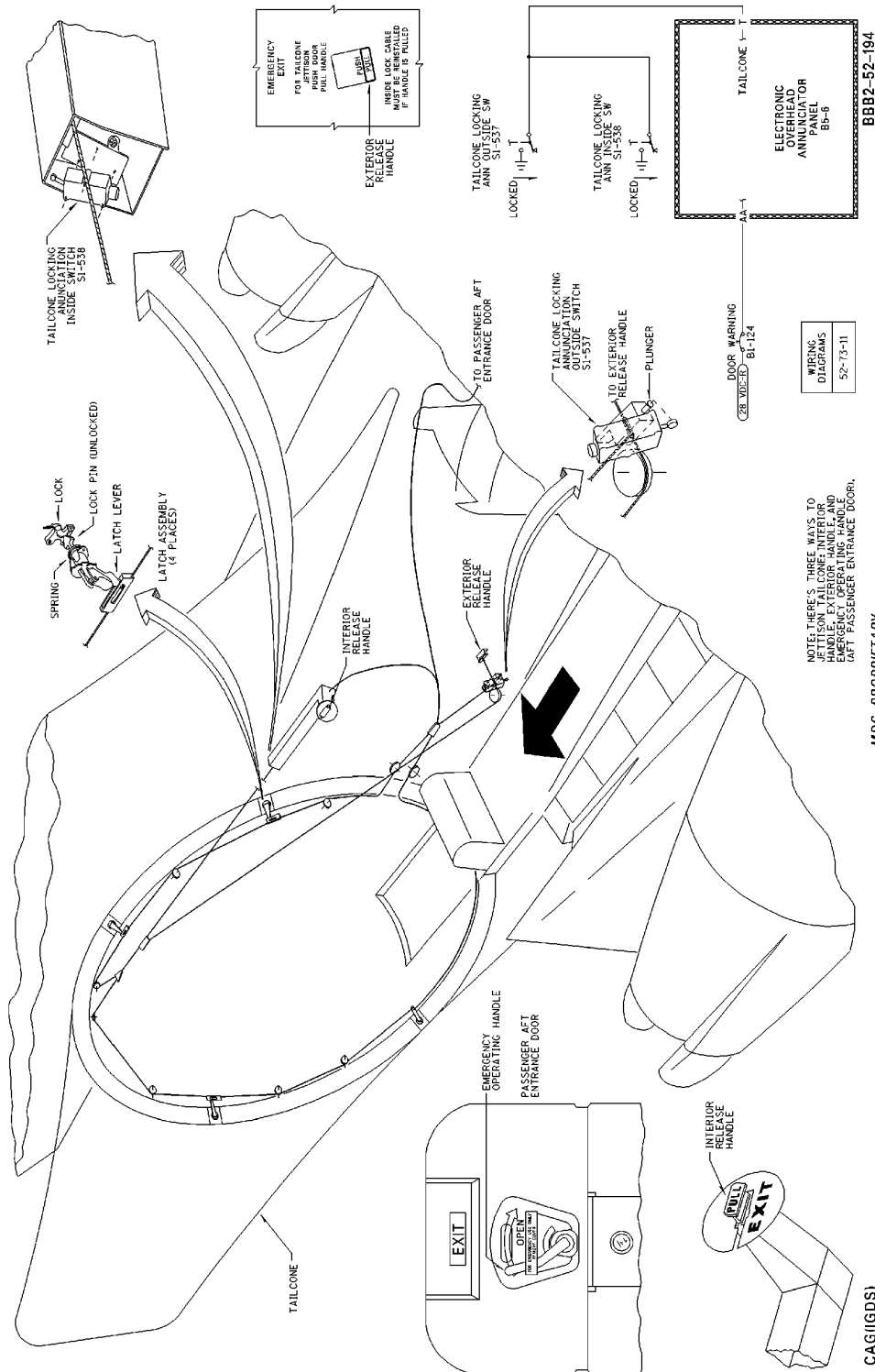
52-70-00

Config 4  
Page 3  
Feb 01/2016

TP-80MM-WJE



# MD-80 AIRCRAFT MAINTENANCE MANUAL



**Door Warning -- Schematic**  
Figure 1/52-70-00-990-804 (Sheet 2 of 2)

EFFECTIVITY  
WJE 401-404, 412, 414, 415, 417, 419, 421, 423,  
863-866, 875-879, 886, 887

**52-70-00**

Config 4  
Page 4  
Feb 01/2016

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## DOOR WARNING - DESCRIPTION AND OPERATION

### 1. General

A. The door warning system provides the flight crew with a visual indication when any of the external doors of the compartments that can be pressurized are open, when the passenger stairways and doors are not latched in the retracted position, and when the tailcone internal and external release handles are not set in the tailcone latched position.

### 2. Door Warning

#### A. Description

##### (1) Electronic Overhead Annunciator Panel (EOAP)

(a) The door warning portion of the EOAP consists of the two scroll buttons (arrows), the DOOR cue button, and the two scrolling light emitting diode (LED) screens.

(b) When a door warning message is received by the EOAP, the DOOR button flashes on and off four times, and the message is printed on the screen. The messages are printed in chronological order in which they are received. They are printed down the left screen, then down the right screen. When more messages line up than there is screen capacity, the up scroll arrow button is lighted. When pressed, the messages will scroll up the right screen, jump to the left screen, and scroll upward exiting at the top of the left screen, at which time the down scroll arrow is lighted.

(c) When the DOOR cue button flashes on and off four times, and remains lighted (when the screens are full, and a door warning signal is waiting in line), the button is pressed, and the door warning signal will be printed on the screen as long as the button is held in, and for approximately five seconds after the button is released, after which the original screen will appear. Pushing the scroll arrow button will move the signal on screen in its turn.

(2) The door warning system consists of proximity switches, mechanical switches, amber notations on the scrolling type electronic screens on annunciator panel, a light on the attendant's forward panel, and two lights in the passenger aft entrance door stairway control panel. The proximity switches are installed in the doorjamb of the passenger forward and aft entrance doors, forward service doors, forward, mid, and aft lower cargo compartment doors, electrical/electronics compartment door, forward accessory compartment door, and stairwell door. Two mechanical switches are provided for the forward stairwell door warning circuit. Both switches are actuated by the stairwell door latch mechanism. Four mechanical switches are provided for the passenger aft entrance door stairway warning circuit. The switches are actuated by the stairway latch mechanism. Two mechanical switches are provided for the tailcone circuit. The switches are actuated by the internal and external release handles.

(3) The door warning system receives 28-volt dc power through the door warning circuit breaker on the miscellaneous bus of the lower main circuit breaker panel. The system is in operation when the bus is energized and the door warning light circuit breaker is closed. The nomenclature (when the circuits are activated) on the door warning scroll of the annunciator panel indicates the doors and tailcone as follows:

**Table 1**

FWD CABIN DOOR	Passenger forward entrance
FWD GALLEY DOOR	Forward service
AFT GALLEY DOOR	Aft service
FWD CARGO DOOR	Forward lower cargo compartment
MID CARGO DOOR	Mid lower cargo compartment

EFFECTIVITY  
WJE 406, 410

TP-80MM-WJE

**52-70-00**

Config 9

Page 1

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 1 (Continued)**

AFT CARGO DOOR	Aft lower cargo compartment
ELEC COMPT DOOR	Electrical/electronics compartment
ACCESS COMPT DOOR	Forward accessory compartment
FWD STAIRWAY DOOR	Forward stairwell door
AFT CABIN DOOR	Passenger aft entrance
AFT STAIRWAY DOOR	Passenger aft stairway door
TAILCONE	Tailcone

**B. Operation**

- (1) When a door is opened, its proximity switch is actuated. Actuation of the switch completes a ground warning circuit for that door, and a warning signal will be generated for the EOAP. When the door is closed and locked, the ground circuit is opened and the signal is cancelled.
- (2) When either the interior or exterior forward stairwell door latch release handle is rotated to the unlatched position, the latch mechanism actuates the latch switch. When unlatched, the stairwell door will spring open far enough to actuate the door switch. When either switch is actuated, a signal is generated for the EOAP and the warning light on the attendant's forward panel will come on. Both will remain on until the door is closed and the latches are in the door latched closed position. The light on the attendant's panel provides the attendant with visual indication that the forward stairwell door is unlatched.
- (3) When the passenger aft entrance door stairway control handle (internal or external) is actuated to the extend position, the aft hooks of the stairway latch mechanism are actuated to release the stairway. Switches (installed on the stairway and actuated by the hooks) complete a ground circuit for a signal to the annunciator panel, and to the amber light on the stairway control panel when the stairway is released. When the ground circuit is closed, the light will come on. When the stairway is fully extended, rollers on the stairway actuating struts engage the forward hooks of the latch mechanism. Switches on the struts are actuated by the hooks, closing the ground circuit to the green light on the stairway control panel. When the green light comes on, the stairway is latched in the extended position. When the control handle is actuated to the retract position, the rollers on the struts are released and the switches on the struts open the ground circuit to the green (stairway safe) light. The light will go off, indicating that the stairway is not latched in the extended position. When the stairway is fully retracted, the latch hooks engage rollers on the stairway, and the switches on the stairway are actuated to open the ground circuit to cancel the signal the EOAP and the amber light on the stairway panel. When the stairway is latched in the retracted position, the lights will go off and the signal will be cancelled.
- (4) When either the internal or external tailcone release handle is pulled from its socket, a mechanical switch is actuated to complete a ground circuit for a signal to the EOAP. When the tailcone is relatched, and the handle reset in its socket, the switch is actuated to open the ground circuit, cancelling the signal to the EOAP.

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WJE 406, 410

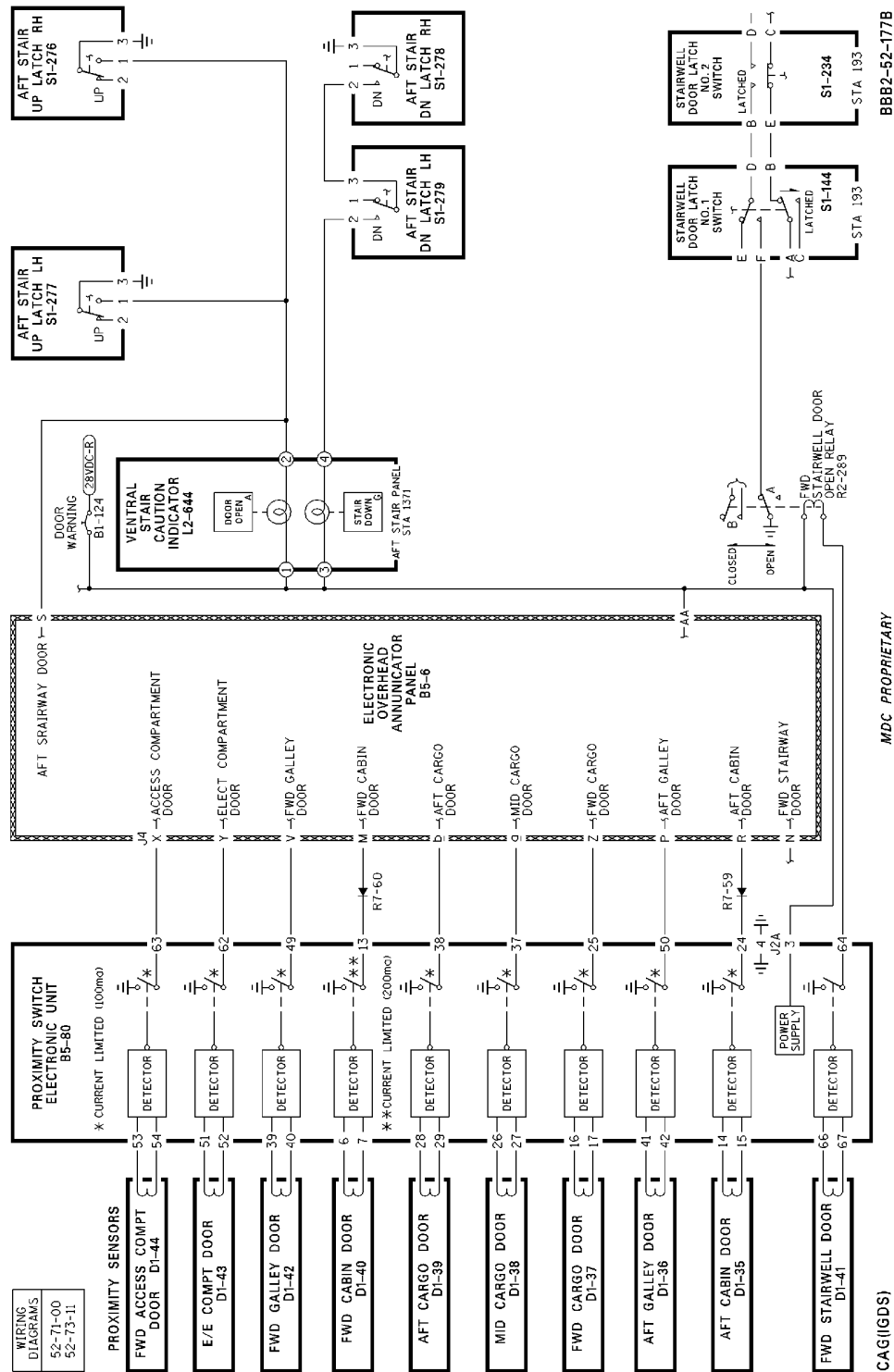
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**52-70-00**

Config 9  
Page 2

Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Door Warning -- Schematic  
Figure 1/52-70-00-990-809 (Sheet 1 of 2)

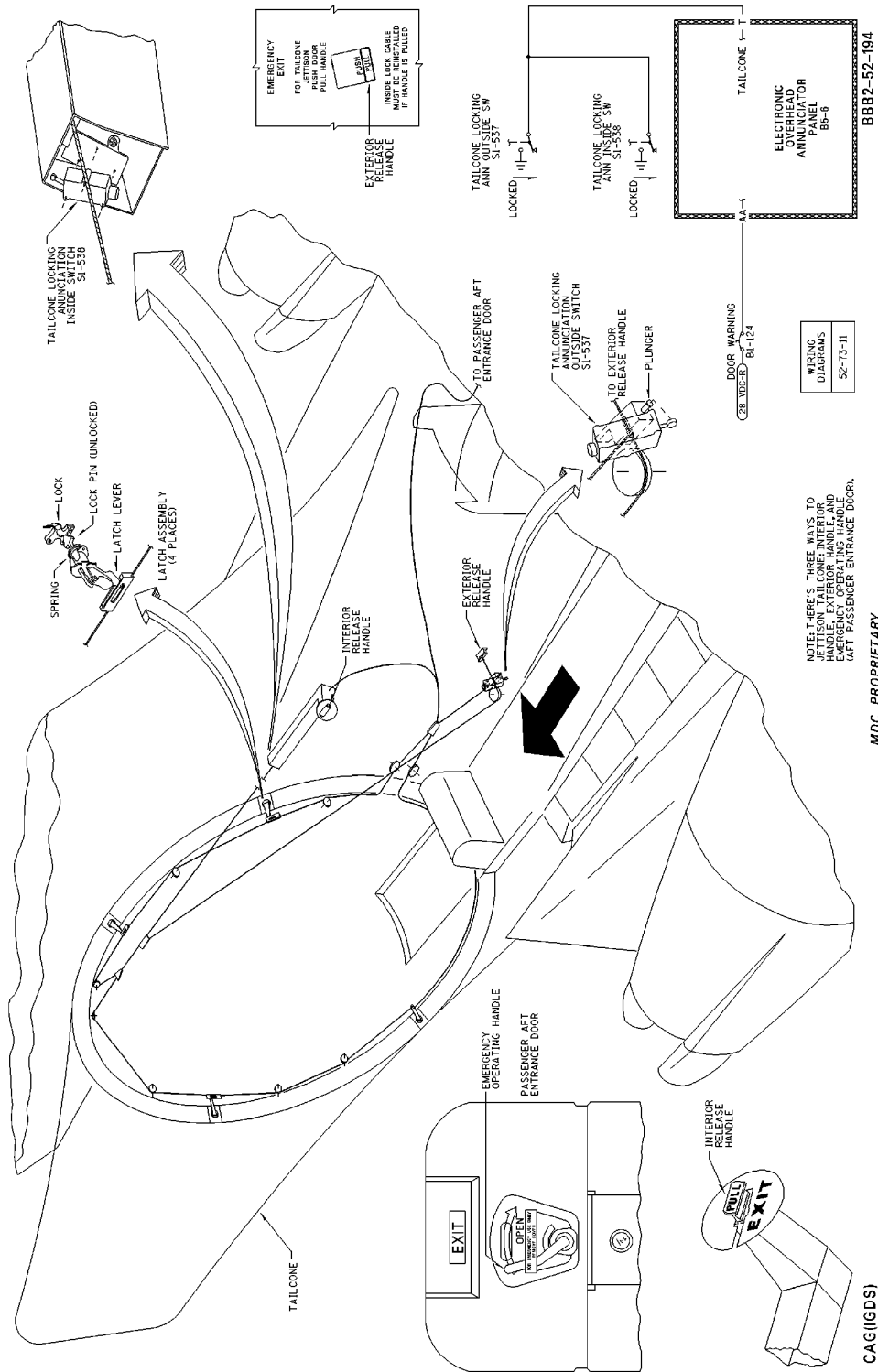
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WJE 406, 410

52-70-00

Config 9  
Page 3  
Feb 01/2015

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Door Warning -- Schematic  
Figure 1/52-70-00-990-809 (Sheet 2 of 2)

EFFECTIVITY  
WJE 406, 410

**52-70-00**  
Config 9  
Page 4  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## DOOR WARNING - DESCRIPTION AND OPERATION

### 1. General

- A. The door warning system provides the flight crew with a visual indication when any of the external doors of the compartments that can be pressurized are open, when the passenger stairways and doors are not latched in the retracted position, and when the tailcone internal and external release handles are not set in the tailcone latched position.

### 2. Door Warning

#### A. Description

- (1) The door warning system consists of proximity switches, mechanical switches, amber indicating lights located on the lower right side of the annunciator panel, a light on the attendant's forward panel, and two lights on the passenger aft entrance door stairway control panel. The proximity switches are installed in the doorjamb of the passenger forward and aft entrance doors, forward and aft service doors, forward, mid, and aft lower cargo compartment doors, electrical/electronics compartment door, forward accessory compartment door, and stairwell door. Two mechanical switches are provided for the forward stairwell door warning circuit. Both switches are actuated by the stairwell door latch mechanism. Four mechanical switches are provided for the passenger aft entrance door stairway warning circuit. The switches are actuated by the stairway latch mechanism. Two mechanical switches are provided for the tailcone circuit. The switches are actuated by the internal and external release handles.
- (2) The door warning system receives 28-volt dc power through the door warning circuit breaker on the miscellaneous bus of the lower main circuit breaker panel. The system is in operation when the bus is energized and the door warning light circuit breaker is closed. The nomenclature (visible when the lights are on) on the door warning lights on the annunciator panel indicates the aircraft openings as follows:

**Table 1**

FWD CABIN DOOR	Passenger forward entrance
FWD GALLEY DOOR	Forward service
AFT GALLEY DOOR	Aft service
FWD CARGO DOOR	Forward lower cargo compartment
MID CARGO DOOR	Mid lower cargo compartment
AFT CARGO DOOR	Aft lower cargo compartment
ELEC COMPT DOOR	Electrical/electronics compartment
ACCESS COMPT DOOR	Forward accessory compartment
FWD STAIRWAY DOOR	Forward stairwell door
AFT CABIN DOOR	Passenger aft entrance
AFT STAIRWAY DOOR	Passenger aft stairway door
TAILCONE	Tailcone

#### B. Operation

- (1) When a door is opened, its proximity switch is actuated. Actuation of the switch completes a ground circuit to the warning light for that door, and a light on the annunciator panel will come on. When the door is closed and locked, the ground circuit is opened and the light goes off.

EFFECTIVITY  
WJE 405

TP-80MM-WJE

**52-70-00**

Config 10

Page 1

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (2) When either the interior or exterior forward stairwell door latch release handle is rotated to the unlatched position, the latch mechanism actuates the latch switch. When unlatched, the stairwell door will spring open far enough to actuate the door switch. When either switch is actuated, the forward stairwell door warning light on the annunciator panel and the warning light on the attendant's forward panel will come on. Both lights will remain on until the door is closed and the latches are in the door latched closed position. The light on the attendant's panel provides the attendant with visual indication that the forward stairwell door is unlatched.
- (3) When the passenger aft entrance door stairway control handle (internal or external) is actuated to the extend position, the aft hooks of the stairway latch mechanism are actuated to release the stairway. Switches (installed on the stairway and actuated by the hooks) complete a ground circuit to the stairway warning light on the annunciator panel, and to the amber light on the stairway control panel when the stairway is released. When the ground circuit is closed, the lights will come on. When the stairway is fully extended, rollers on the stairway actuating struts engage the forward hooks of the latch mechanism. Switches on the struts are actuated by the hooks, closing the ground circuit to the green light on the stairway control panel. When the green light comes on, the stairway is latched in the extended position. When the control handle is actuated to the retract position, the rollers on the struts are released and the switches on the struts open the ground circuit to the green (stairway safe) light. The light will go off, indicating that the stairway is not latched in the extended position. When the stairway is fully retracted, the latch hooks engage rollers on the stairway, and the switches on the stairway are actuated to open the ground circuit to the warning light on the annunciator panel and the amber light on the stairway panel. When the stairway is latched in the retracted position, the lights will go off.
- (4) When either the internal or external tailcone release handle is pulled from its socket, a mechanical switch is actuated to complete a ground circuit to the tailcone warning light on the annunciator panel. When the ground circuit is closed, the light will come on. When the tailcone is relatched, and the handle reset in its socket, the switch is actuated to open the ground circuit to the warning light. When the ground circuit to the warning light is opened, the light will go out.

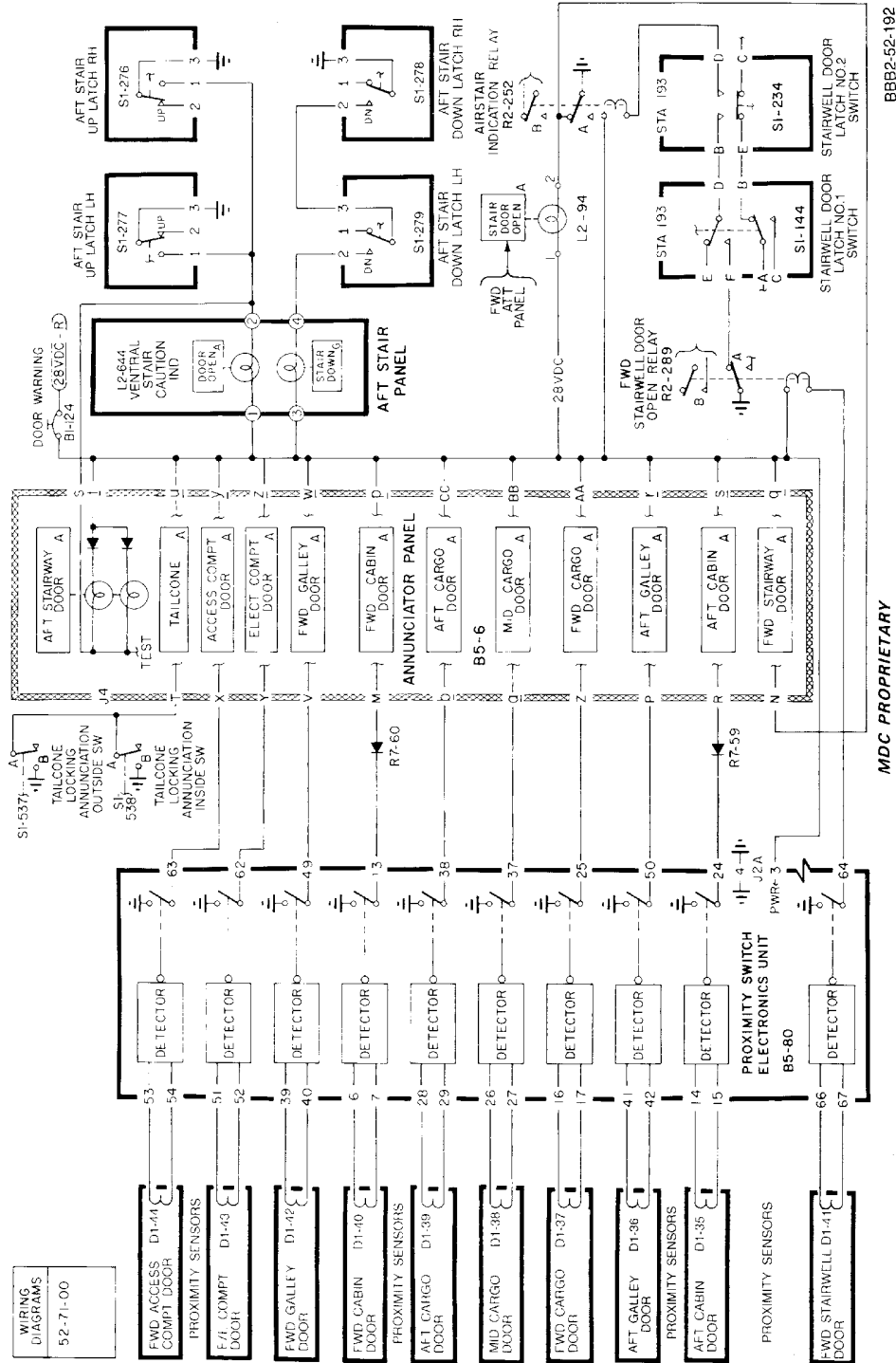
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WJE 405

TP-80MM-WJE

**52-70-00**

Config 10  
Page 2  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Door Warning -- Schematic  
Figure 1/52-70-00-990-810 (Sheet 1 of 2)

EFFECTIVITY  
WJE 405

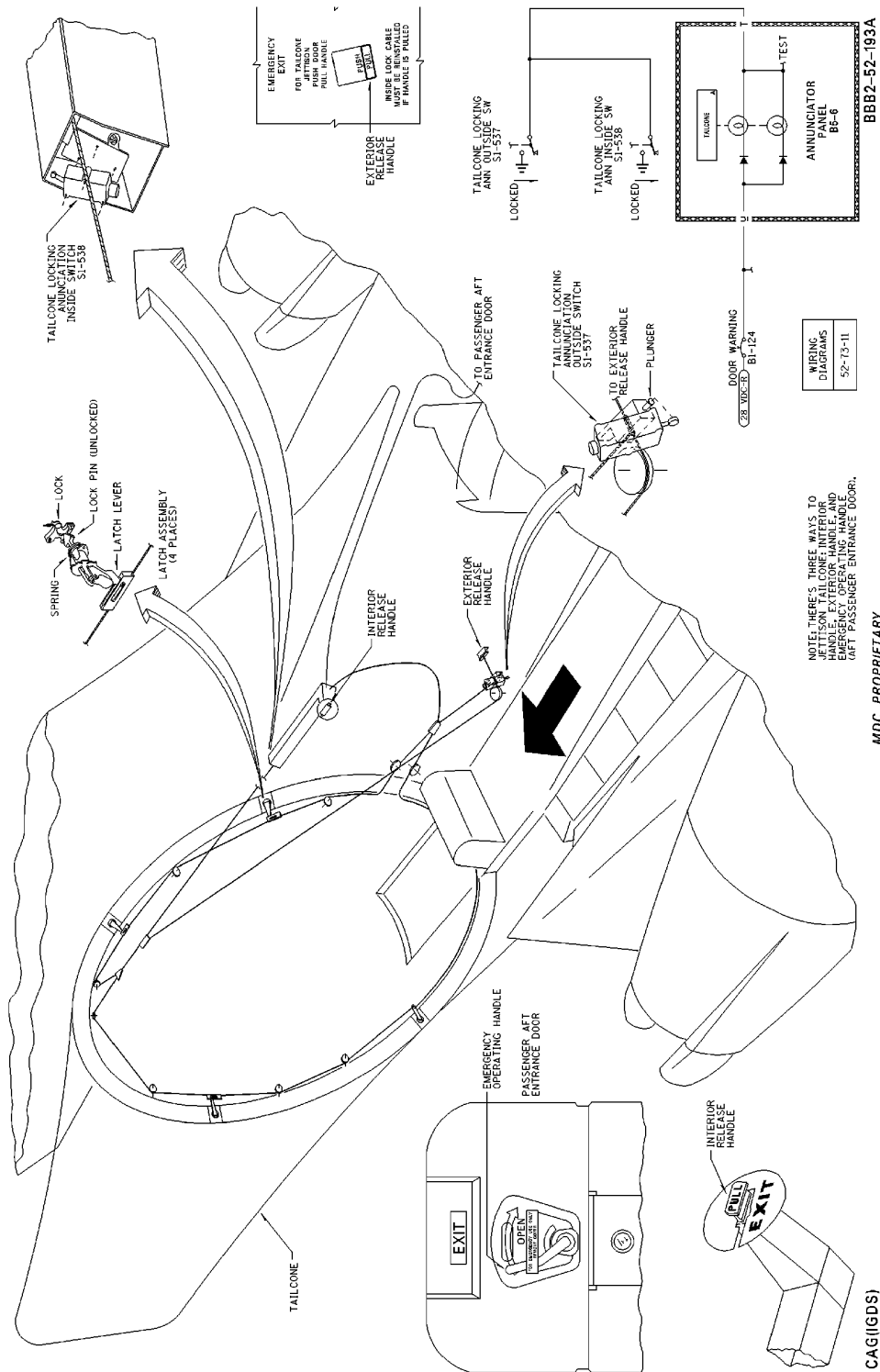
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Config 10  
Page 3  
Feb 01/2015

TP-80MM-WJE



# MD-80 AIRCRAFT MAINTENANCE MANUAL



Door Warning -- Schematic  
Figure 1/52-70-00-990-810 (Sheet 2 of 2)

EFFECTIVITY  
WJE 405

TP-80MM-WJE

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52-70-00

Config 10

Page 4

Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### DOOR WARNING - ADJUSTMENT/TEST

#### 1. General

- A. This procedure contains MSG-3 task card data.

#### **TASK 52-70-00-710-801**

#### 2. Operational Check of the Door Warning System

##### A. Operational Check of the Door Warning System

NOTE: Door indications will show on the overhead annunciator panel.

##### **SUBTASK 52-70-00-710-001**

- (1) Forward Airstair Door Warning.
  - (a) Retract airstair and lock door.
    - 1) FWD STAIRWAY DOOR Warning should be OUT.
  - (b) Open forward airstair door.
    - 1) FWD STAIRWAY DOOR Warning should be ON.
  - (c) Close forward airstair door.
- (2) Forward Entry Door Warning.
  - (a) Close and lock entry door.
    - 1) FWD CABIN DOOR Warning should be OUT.
  - (b) Open entry door.
    - 1) FWD CABIN DOOR Warning should be ON.
- (3) Forward Galley Service Door Warning.
  - (a) Close and lock service door.
    - 1) FWD GALLEY DOOR Warning should be OUT.
  - (b) Open service door.
    - 1) FWD GALLEY DOOR Warning should be ON.
- (4) Aft Galley Service Door Warning.
  - (a) Close and lock service door.
    - 1) AFT GALLEY DOOR Warning should be OUT.
  - (b) Open service door.
    - 1) AFT GALLEY DOOR Warning should be ON.
- (5) Forward Cargo Door Warning.
  - (a) Close and lock cargo door.
    - 1) FWD CARGO DOOR Warning should be OUT.
  - (b) Open cargo door.
    - 1) FWD CARGO DOOR Warning should be ON.
- (6) Mid Cargo Door Warning.
  - (a) Close and lock cargo door.
    - 1) MID CARGO DOOR Warning should be OUT.
  - (b) Open cargo door.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-70-00

Page 501  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- 1) MID CARGO DOOR Warning should be ON.
- (7) Aft Cargo Door Warning.
  - (a) Close and lock cargo door.
    - 1) AFT CARGO DOOR Warning should be OUT.
  - (b) Open cargo door.
    - 1) AFT CARGO DOOR Warning should be ON.
- (8) Electrical and Electronics Compartment Door Warning.
  - (a) Close and lock the Electrical and Electronics Compartment door.
    - 1) ELECT COMP DOOR Warning should be OUT.
  - (b) Open Electrical and Electronics Compartment door.
    - 1) ELECT COMP DOOR Warning should be ON.
- (9) Forward Accessory Compartment Door Warning.
  - (a) Close and lock accessory compartment door.
    - 1) ACCESS COMP DOOR Warning should be OUT.
  - (b) Open accessory compartment door.
    - 1) ACCESS COMP DOOR Warning should be ON.
- (10) Aft Cabin Entry Door Warning. (If applicable)
  - (a) Close and lock aft entry door.
    - 1) AFT CABIN DOOR Warning should be OUT.
  - (b) Open aft entry door.
    - 1) AFT CABIN DOOR Warning should be ON.
- (11) Aft Entry Stairway Door Warning.
  - (a) Raise and lock aft entry stairs.
    - 1) AFT STAIRWAY DOOR Warning should be OUT.
  - (b) Lower aft entry stairs.
    - 1) AFT STAIRWAY DOOR Warning should be ON.

**CAUTION:** DO NOT OPERATE INTERIOR OR EXTERIOR RELEASE HANDLES. OPERATION OF THE EXTERNAL AND INTERNAL TAILCONE HANDLES WILL DEPLOY TAILCONE.

- (12) Tailcone Unsafe Warning. (If applicable)

**NOTE:** Coordinate this operation Tailcone Release Airworthiness task.

  - (a) Manually operate external tailcone handle warning switch.
    - 1) TAILCONE Warning should be ON.
  - (b) Release switch arm.
    - 1) TAILCONE Warning should be OUT.
  - (c) Manually operate internal tailcone handle warning switch.
    - 1) TAILCONE Warning should be ON.
  - (d) Release switch arm.
    - 1) TAILCONE Warning should be OUT.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-00**

Page 502  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**B. Job Close-up**

SUBTASK 52-70-00-942-001

- (1) If necessary, close all doors.

————— **END OF TASK** —————

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-00**

Page 503  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AFT SERVICE DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the aft service door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Removal/Installation Aft Service Door Proximity Switch

- A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (2) Open aft service door.
- (3) If applicable, remove galley forward of aft service door.

**WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**  
(G3 GALLEY, SUBJECT 25-33-00, Page 201)

#### WJE ALL

- (4) If required, remove forward doorjamb trim strip.
- (5) Remove sidewall panel just forward of aft service door. (PAGEBLOCK 25-21-00/201)
- (6) Remove side ceiling panel above aft service door.
- (7) Cut switch wires at splice point S9-26 (above aft service door).
- (8) Remove switch and attached wire.

- B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

**CAUTION:** WIRE BETWEEN SENSOR AND FIRST WIRING CLAMP MUST BE INSTALLED SO WIRE DOES NOT PROJECT MORE THAN 0.25 INCH (6.35 MM) BELOW CONNECTOR.

- (2) Install switch and attached wire.
- (3) Coil and stow (do not tie) excess wire inside doorjamb so inside clipping will permit a minimum of 12 inches (30.48 cm) to be pulled through doorjamb for servicing requirements.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-70-01

Config 1  
Page 201  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (4) Splice switch wires at splice point S9-26.
- (5) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (6) Adjust proximity switch. (Paragraph 3.)
- (7) Install side ceiling panel.
- (8) Install sidewall panel. (PAGEBLOCK 25-21-00/201)
- (9) Install doorjamb trim strip (if removed).
- (10) If applicable, install galley.

**WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**  
(G3 GALLEY, SUBJECT 25-33-00, Page 201)

**WJE ALL**

- (11) Close door.

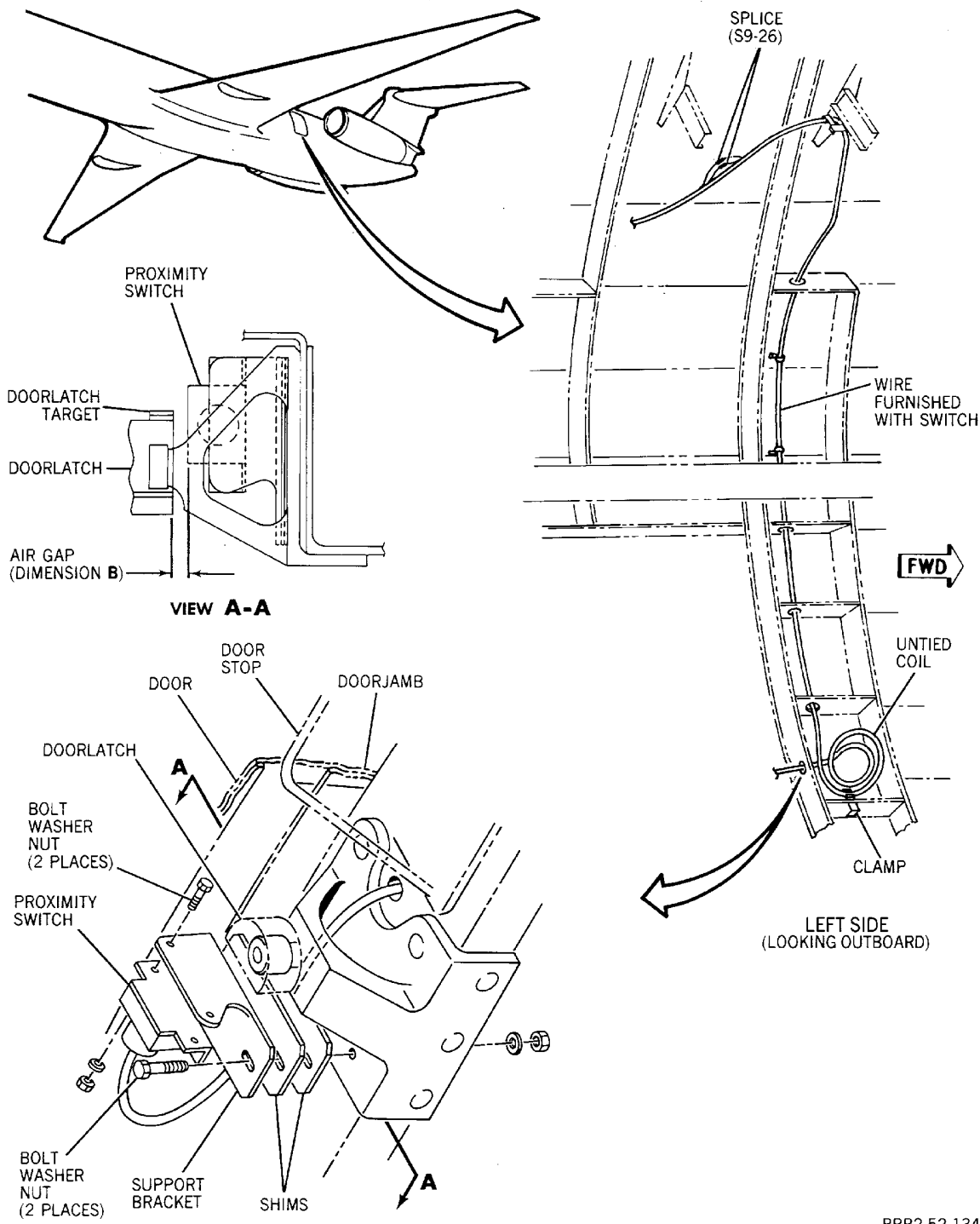
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-01**

Config 1  
Page 202  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Aft Service Door Proximity Switch - Maintenance Practices**  
**Figure 201/52-70-01-990-801**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-01**

Config 1  
Page 203  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Aft Service Door Proximity Switch

#### A. Adjust Aft Service Door Proximity Switch

NOTE: A bolt has been added to the door latch target to provide mass for proper switch operation.  
Air gap of switch is to be measured from the surface of door latch target; not the bolt.

- (1) With switch centered on door latch target, adjust shims on switch bracket to maintain air gap of 0.200 inch (5.08 mm) (Dimension B).
- (2) Adjust switch inboard or outboard so AFT GALLEY DOOR light on annunciator panel goes out when end of door handle is no more than 4.0 inches (101.6 mm) from locked position.
- (3) Check that no preload exists between wire clamp next to switch and pass-through hole in frame.

#### B. Test Aft Service Door Proximity Switch

- (1) Open aft service door. AFT GALLEY DOOR indication on annunciator panel should come on.
- (2) Close and latch aft service door. AFT GALLEY DOOR indication on annunciator panel should go out.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-01**

Config 1  
Page 204  
Feb 01/2016



# MD-80 AIRCRAFT MAINTENANCE MANUAL

## AFT SERVICE DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

### 1. General

- A. This procedure provides maintenance practices for the aft service door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

### 2. Removal/Installation Aft Service Door Proximity Switch

#### A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open aft service door.
- (3) If applicable, remove galley forward of aft service door.
- (4) If required, remove forward doorjamb trim strip.
- (5) Remove sidewall panel just forward of aft service door. (PAGEBLOCK 25-21-00/201)
- (6) Remove side ceiling panel above aft service door.
- (7) Cut switch wires at splice point S9-26 (above aft service door).
- (8) Remove switch and attached wire.

#### B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

**CAUTION:** WIRE BETWEEN SENSOR AND FIRST WIRING CLAMP MUST BE INSTALLED SO WIRE DOES NOT PROJECT MORE THAN 0.25 INCH (6.35 MM) BELOW CONNECTOR.

- (2) Install switch and attached wire.
- (3) Coil and stow (do not tie) excess wire inside doorjamb so inside clipping will permit a minimum of 12 inches (30.48 cm) to be pulled through doorjamb for servicing requirements.
- (4) Splice switch wires at splice point S9-26.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

# 52-70-01

Config 2  
Page 201  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (5) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (6) Adjust proximity switch. (Paragraph 3.)  
(7) Install side ceiling panel.  
(8) Install sidewall panel. (PAGEBLOCK 25-21-00/201)  
(9) Install doorjamb trim strip (if removed).  
(10) If applicable, install galley.  
(11) Close door.

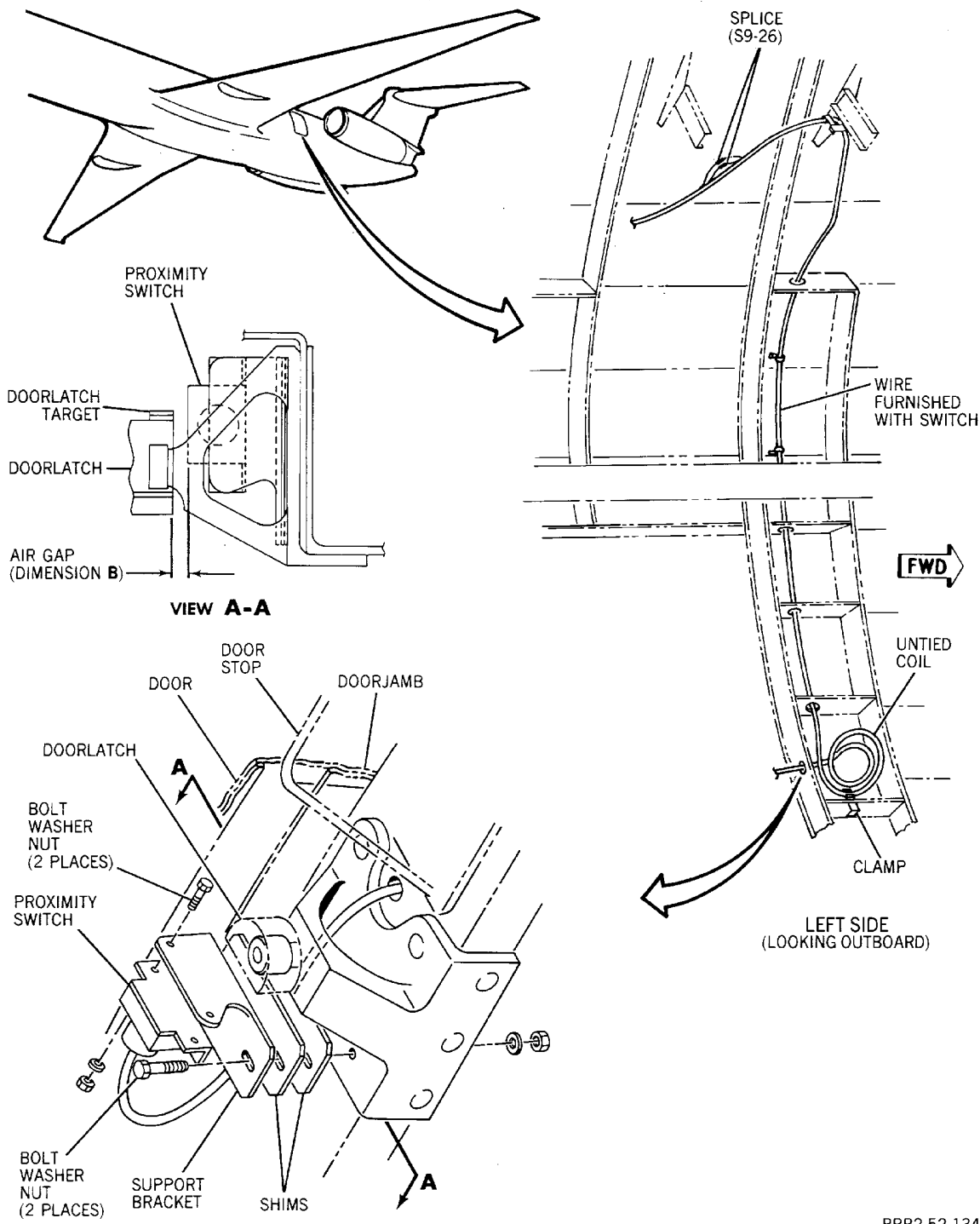
EFFECTIVITY  
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TP-80MM-WJE

**52-70-01**

Config 2  
Page 202  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-134A

**Aft Service Door Proximity Switch - Maintenance Practices**  
**Figure 201/52-70-01-990-803**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-01**

Config 2  
Page 203  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Aft Service Door Proximity Switch

#### A. Adjust Aft Service Door Proximity Switch

NOTE: A bolt has been added to the door latch target to provide mass for proper switch operation.  
Air gap of switch is to be measured from the surface of door latch target; not the bolt.

- (1) With switch centered on door latch target, adjust shims on switch bracket to maintain air gap of 0.200 inch (5.08 mm) (Dimension B).
- (2) Adjust switch inboard or outboard so AFT GALLEY DOOR light on annunciator panel goes out when end of door handle is no more than 4.0 inches (101.6 mm) from locked position.
- (3) Check that no preload exists between wire clamp next to switch and pass-through hole in frame.

#### B. Test Aft Service Door Proximity Switch

- (1) Open aft service door. AFT GALLEY DOOR indication on annunciator panel should come on.
- (2) Close and latch aft service door. AFT GALLEY DOOR indication on annunciator panel should go out.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-01**

Config 2  
Page 204  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### CARGO DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the cargo door proximity switches. (Figure 201)
- B. This procedure is typical for each of the cargo door proximity switches. Differences are specifically noted.
- C. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- D. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items:

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
PR 340, Class B-2 Sealant	Products Research and Chemical Corp.
Solvent, 1,1,1 trichloroethane (stabilized vapor degreasing)	Commercially available

#### 3. Removal/Installation Cargo Door Proximity Switch

- A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open and latch cargo door.
- (3) Open and latch cargo door shield.
- (4) For forward cargo door, remove access plate on inside of doorjamb forward of switch. Retain attaching hardware.
- (5) For mid and aft cargo doors, remove scuff plate on inside of doorjamb forward of switch. Retain attaching hardware.
- (6) Remove switch bracket/deflector attach screws. Retain deflector and shims.
- (7) Pull switch bracket and wiring through lightening hole in doorjamb.
- (8) Cut switch wires at splice point.
- (9) Remove switch and wire from bracket.

- B. Install Proximity Switch

EFFECTIVITY  
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**52-70-02**

TP-80MM-WJE

Page 201  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Install switch on bracket.
- (3) Install switch bracket and deflector. Adjust deflector, using shims until face of switch is 0.015 (+0.015, -0.005) inch (0.381 (+0.381, -0.127) mm) (Dimension C) below surface of deflector.
- (4) Splice switch wires at splice point, and push wiring inside lightening hole.
- (5) Install access plate or scuff plate.
- (6) Using nonmetallic tool, remove old sealant from surfaces to be sealed.
- (7) Using cloth dampened with 1,1,1-trichloroethane, wipe surfaces to be sealed.

**WARNING:** WHEN USING TRICHLOROETHANE, MAKE CERTAIN THAT WORK AREA IS WELL VENTILATED, VAPORS CAN BE HARMFUL IF INHALED BY PERSONNEL.

- (8) Apply fillet of sealant around edges of access plate or scuff plate.
- (9) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (10) Check target on cargo door for adjustment. Paragraph 4.
- (11) Close door shield and cargo door.

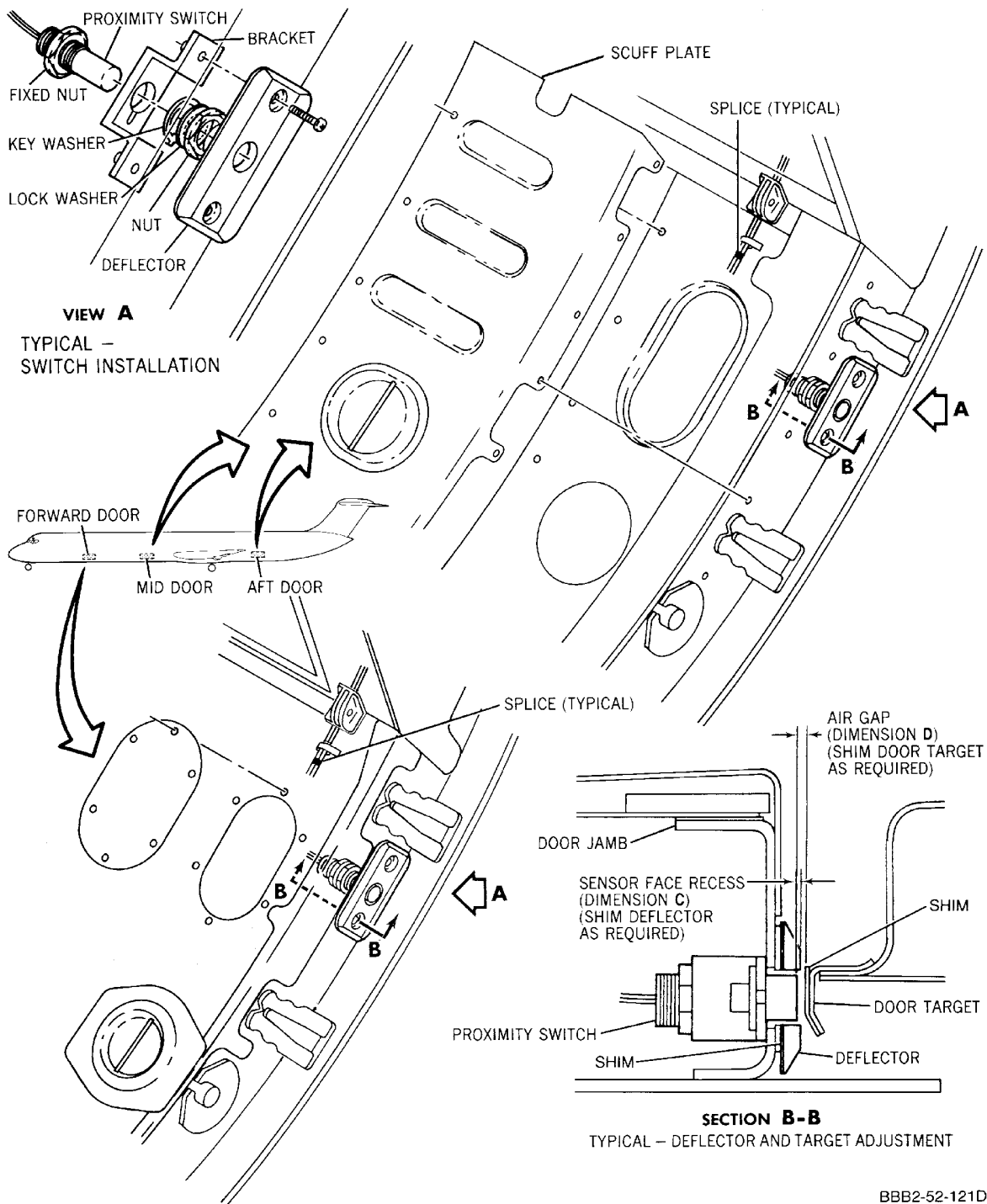
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**52-70-02**

Page 202  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-121D

**Cargo Door Proximity Switches - Maintenance Practices**  
**Figure 201/52-70-02-990-801**

EFFECTIVITY  
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**52-70-02**

TP-80MM-WJE

Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 4. Adjustment/Test Cargo Door Proximity Switch

#### A. Adjust Cargo Door Proximity Switch

- (1) Check that door target face is parallel to sensing face of switch.

NOTE: Prior to adjustment, ensure the face of the sensor target is parallel to the sensor deflector. Slight bending of the sensor target may be required.

- (2) Adjust shims on door target to maintain gap of 0.060( $\pm$ 0.015) inch (1.524( $\pm$ 0.381) mm) (Dimension D) when switch is actuated.
- (3) Check adjustment. (Paragraph 4.B.)

#### B. Test Cargo Door Proximity Switch

- (1) Open aft, mid, or forward cargo door. AFT, MID, or FWD CARGO DOOR indication on annunciator panel should come on.
- (2) Close cargo door. Indication on annunciator panel should go out.

EFFECTIVITY  
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TP-80MM-WJE

**52-70-02**

Page 204  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the forward passenger door proximity switch. (Figure 201).
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Removal/Installation Forward Passenger Door Proximity Switch

##### A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open door.
- (3) If required, remove forward doorjamb trim strip.
- (4) Remove sidewall panel just forward of door. (PAGEBLOCK 25-21-00/201)
- (5) Cut switch wires at splice point S9-30 (above switch inside doorjamb).
- (6) Remove switch and attached wire.

##### B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Install switch and attached wire. Check that:
  - (a) Sleeving extends from switch past second wiring clamp.
  - (b) Slack wire is pulled inside doorjamb without preloading wire at switch.
  - (c) Wire is under wire guard guide.
- (3) Splice switch wires at splice point S9-30.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Install sidewall panel. (PAGEBLOCK 25-21-00/201)

EFFECTIVITY  
WJE ALL

**52-70-03**

TP-80MM-WJE

Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (7) Install doorjamb trim strip (if removed).
- (8) Close door.

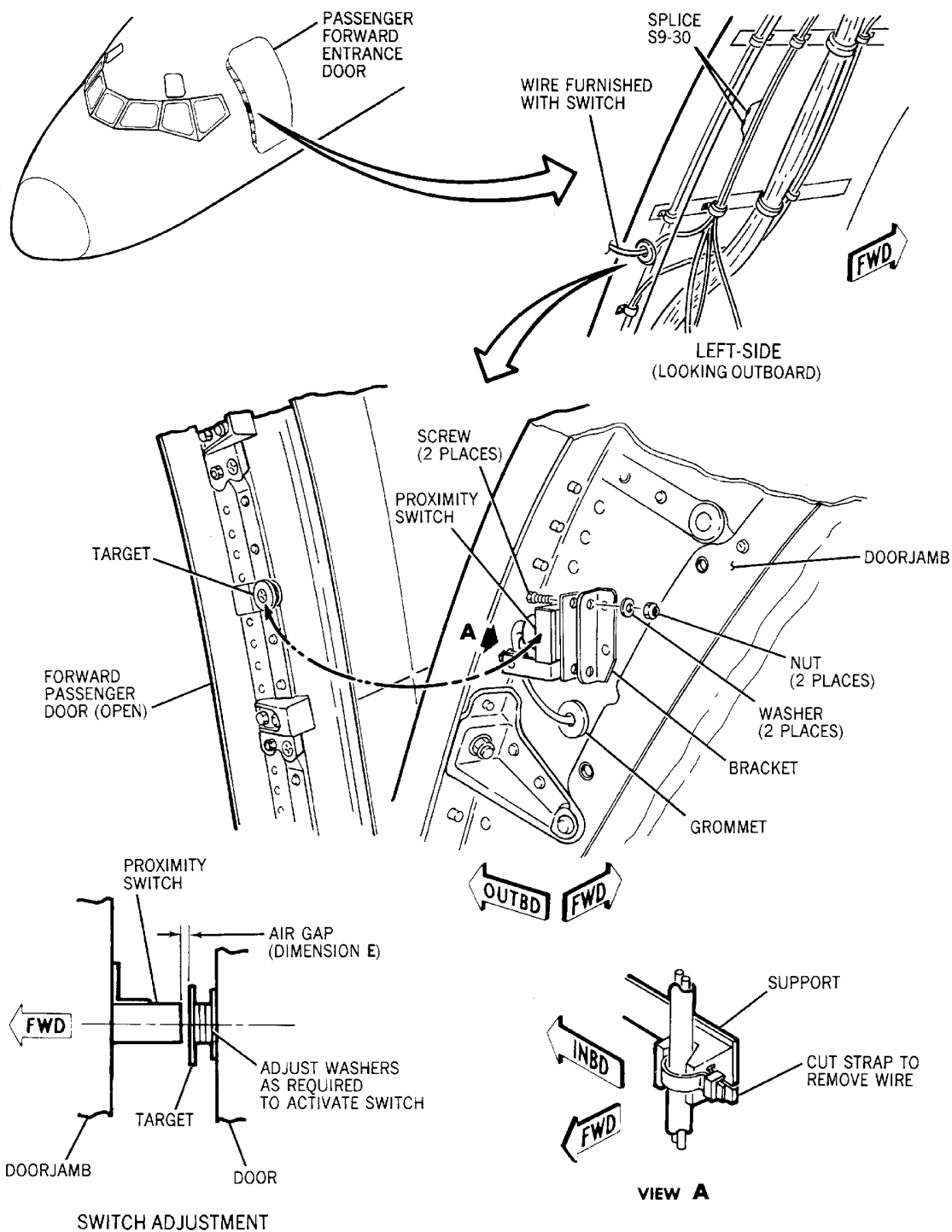
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TP-80MM-WJE

**52-70-03**

Page 202  
Feb 01/2015

MD-80  
AIRCRAFT MAINTENANCE MANUAL



BBB2-52-122A

Forward Passenger Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-03-990-801

EFFECTIVITY  
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52-70-03

TP-80MM-WJE

Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Forward Passenger Door Proximity Switch

#### A. Adjust Forward Passenger Door Proximity Switch

- (1) Adjust washers under door target for air gap of approximately 0.125 inch (3.175 mm) (Dimension E).
- (2) Adjust washers so FWD CABIN DOOR light on annunciator panel goes out when end of door handle is no more than 4.0 inches (101.6 mm) from locked position.

#### B. Test Forward Passenger Door Proximity Switch

- (1) Open forward passenger door. FWD CABIN DOOR indication on annunciator panel should come on.
- (2) Close and latch forward passenger door. FWD CABIN DOOR indication on annunciator panel should go out.

EFFECTIVITY  
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TP-80MM-WJE

**52-70-03**

Page 204  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AFT PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the aft passenger door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Removal/Installation Aft Passenger Door Proximity Switch

##### A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open door.
- (3) Remove trash container from aft left lavatory.
- (4) Remove upper and lower access panels from lavatory aft wall as necessary to get access to the proximity switch.
- (5) Cut switch wires at splice point S9-25 (near switch).
- (6) Remove switch and attached wire.

##### B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Install switch and attached wire.
- (3) Splice switch wires at splice point S9-25.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Install upper and lower access panels.
- (7) Install trash container in aft left lavatory.
- (8) Close door.

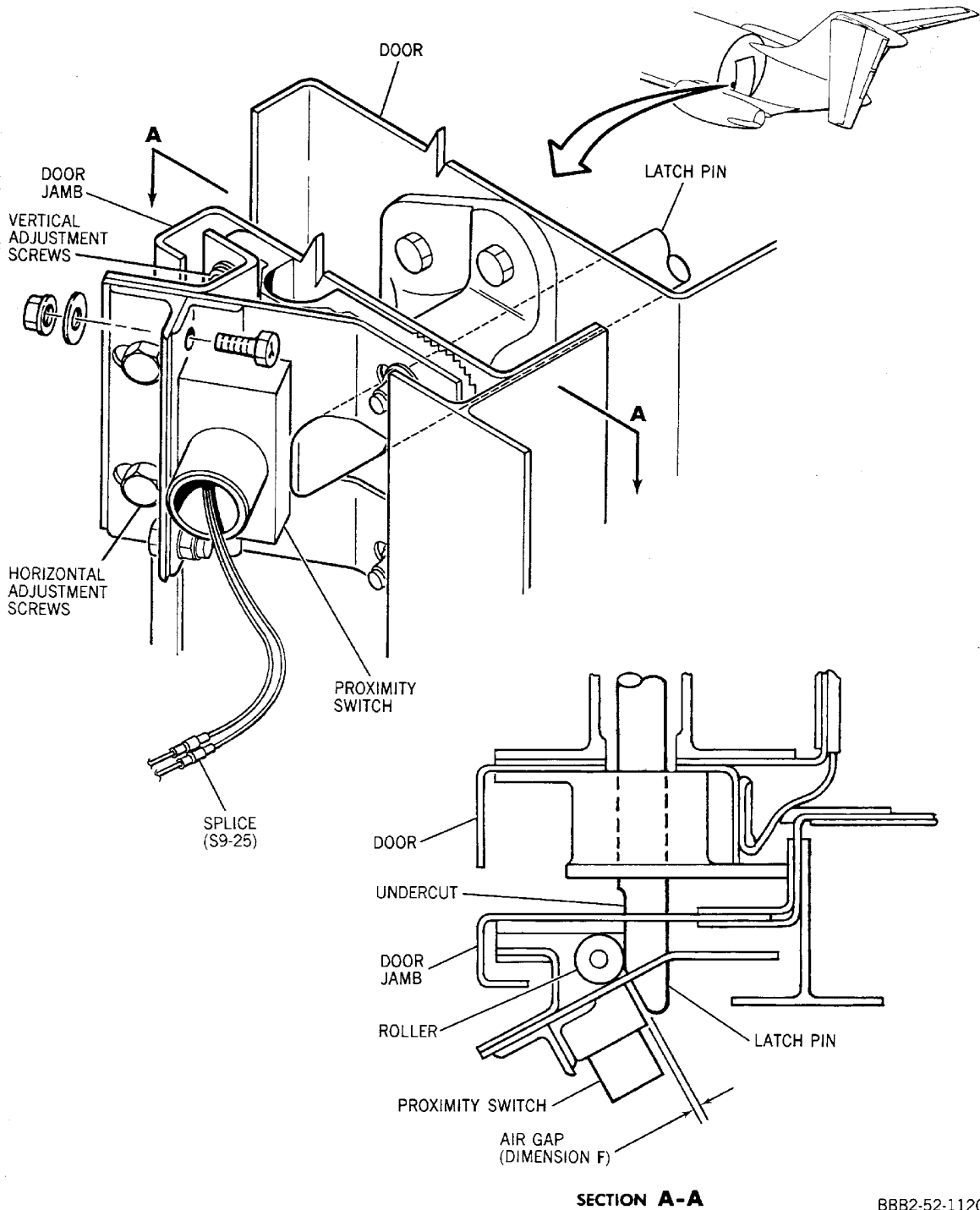
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**52-70-04**

Config 1  
Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-112C

**Aft Passenger Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-04-990-801**

EFFECTIVITY  
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TP-80MM-WJE

**52-70-04**

Config 1  
Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Aft Passenger Door Proximity Switch

- A. Adjust Aft Passenger Door Proximity Switch
  - (1) Make certain that door is closed and latched.
  - (2) With beveled end of latch pin just past roller, and roller contacting flat, undercut area of latch pin, adjust proximity switch to actuate, maintaining air gap of 0.060 (+0.00, -0.020) inch (1.524 (+0.00, -0.508) mm) (Dimension F).
- B. Test Aft Passenger Door Proximity Switch
  - (1) Open aft passenger door. AFT CABIN DOOR indication on annunciator panel should come on.
  - (2) Close and latch aft passenger door. AFT CABIN DOOR indication on annunciator panel should go out.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**52-70-04**

Config 1  
Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AFT PASSENGER DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the aft passenger door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Removal/Installation Aft Passenger Door Proximity Switch

##### A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open door.
- (3) Remove aft left lavatory tras container.
- (4) Remove upper and lower access panels as necessary from aft wall of lavatory for access to proximity switch.
- (5) Cut switch wires at splice point S9-25 (near switch).
- (6) Remove switch and attached wire.

##### B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Install switch and attached wire.
- (3) Splice switch wires at splice point S9-25.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Install upper and lower access panels to aft wall of lavatory.
- (7) Install aft attendant's panel.
- (8) Close door.

EFFECTIVITY  
WJE ALL

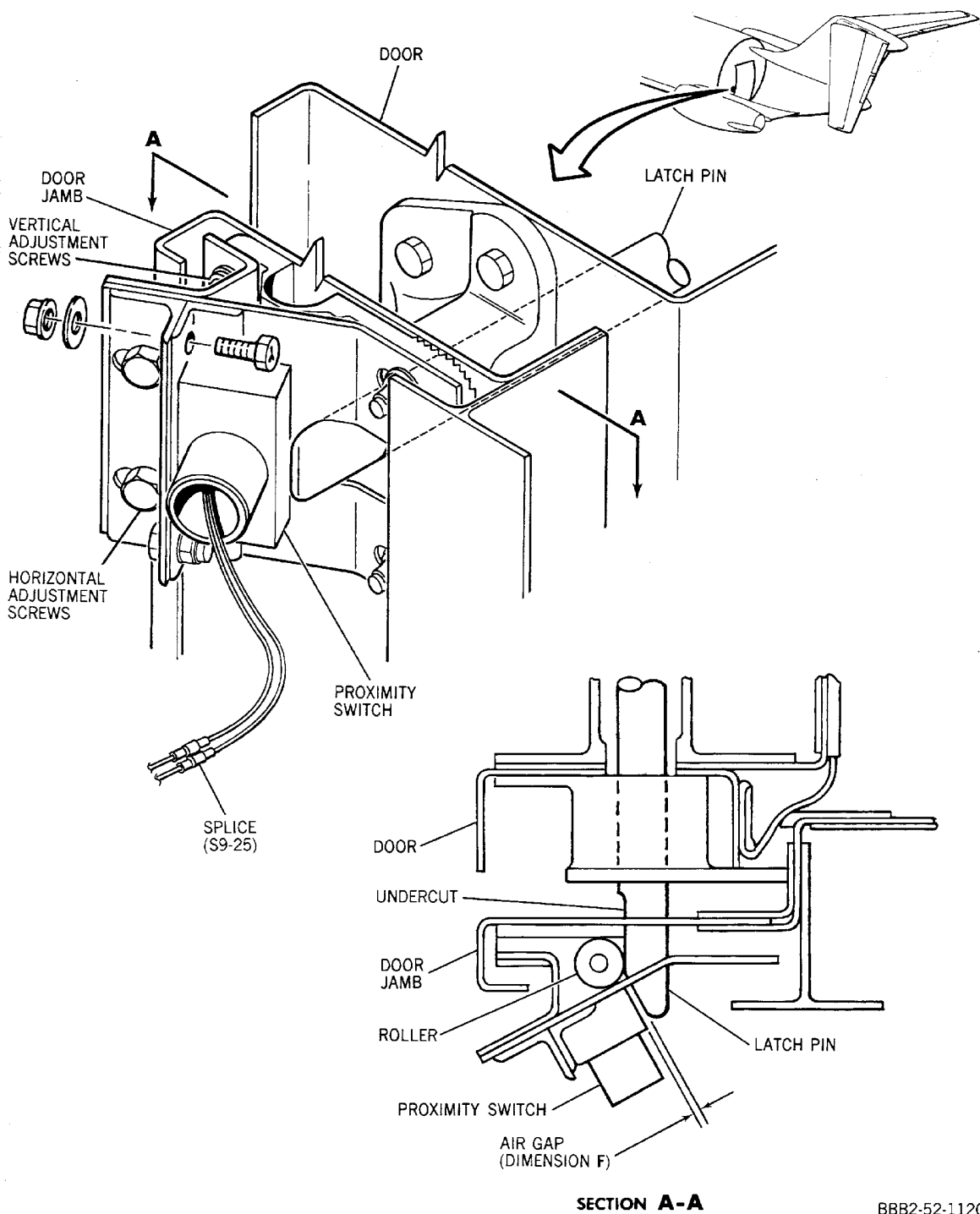
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**52-70-04**

Config 3  
Page 201  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-112C

**Aft Passenger Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-04-990-803**

EFFECTIVITY  
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TP-80MM-WJE

**52-70-04**

Config 3  
Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Aft Passenger Door Proximity Switch

#### A. Adjust Aft Passenger Door Proximity Switch

- (1) Make certain that door is closed and latched.
- (2) With beveled end of latch pin just past roller, and roller contacting flat, undercut area of latch pin, adjust proximity switch to actuate, maintaining air gap of 0.060 (+0.00, -0.020) inch (1.524 (+0.00, -0.508) mm) (Dimension F).

#### B. Test Aft Passenger Door Proximity Switch

- (1) Open aft passenger door. AFT CABIN DOOR indication on annunciator panel should come on.
- (2) Close and latch aft passenger door. AFT CABIN DOOR indication on annunciator panel should go out.

EFFECTIVITY  
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TP-80MM-WJE

**52-70-04**

Config 3  
Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD SERVICE DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the forward service door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)
- D. Two methods of replacement are given:
  - (1) Regular method using splice point S9-32 above and forward of door.
  - (2) Quick method splicing wires near switch.

#### 2. Removal/Installation Forward Service Door Proximity Switch

- A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open door.
- (3) Regular Method:
  - (a) Remove galley forward of service door. (G1 GALLEY - MAINTENANCE PRACTICES, PAGEBLOCK 25-31-00/201, Page 201)
  - (b) If required, remove forward doorjamb trim strip.
  - (c) Remove sidewall panel just forward of door. (PAGEBLOCK 25-21-00/201)
  - (d) Remove side ceiling panel above door. (REMOVABLE PARTITIONS - MAINTENANCE PRACTICES, PAGEBLOCK 25-24-00/201 Config 2)
  - (e) Cut switch wires at splice point S9-32 (above and forward of door).
  - (f) Remove switch and attached wire.
- (4) Quick Method:
  - (a) Remove handhold in forward inside doorjamb.
  - (b) Remove switch and pull out of structure.
  - (c) Cut wire near switch.

- B. Install Proximity Switch

EFFECTIVITY  
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TP-80MM-WJE

**52-70-05**

Page 201  
Feb 01/2016

## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Regular Method:

- (a) Install switch and attached wire.
- (b) Splice switch wires at splice point S9-32.

- (3) Quick Method:

- (a) Cut off excess wire from switch.
- (b) Splice switch wires.
- (c) Install switch.
- (d) Install handhold in doorjamb.

- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Install side ceiling panel (if removed). (REMOVABLE PARTITIONS - MAINTENANCE PRACTICES, PAGEBLOCK 25-24-00/201 Config 2)
- (7) Install sidewall panel (if removed). (PAGEBLOCK 25-21-00/201)
- (8) Install doorjamb trim strip (if removed).
- (9) Install galley (if removed (G1 GALLEY - MAINTENANCE PRACTICES, PAGEBLOCK 25-31-00/201, Page 201).
- (10) Close door.

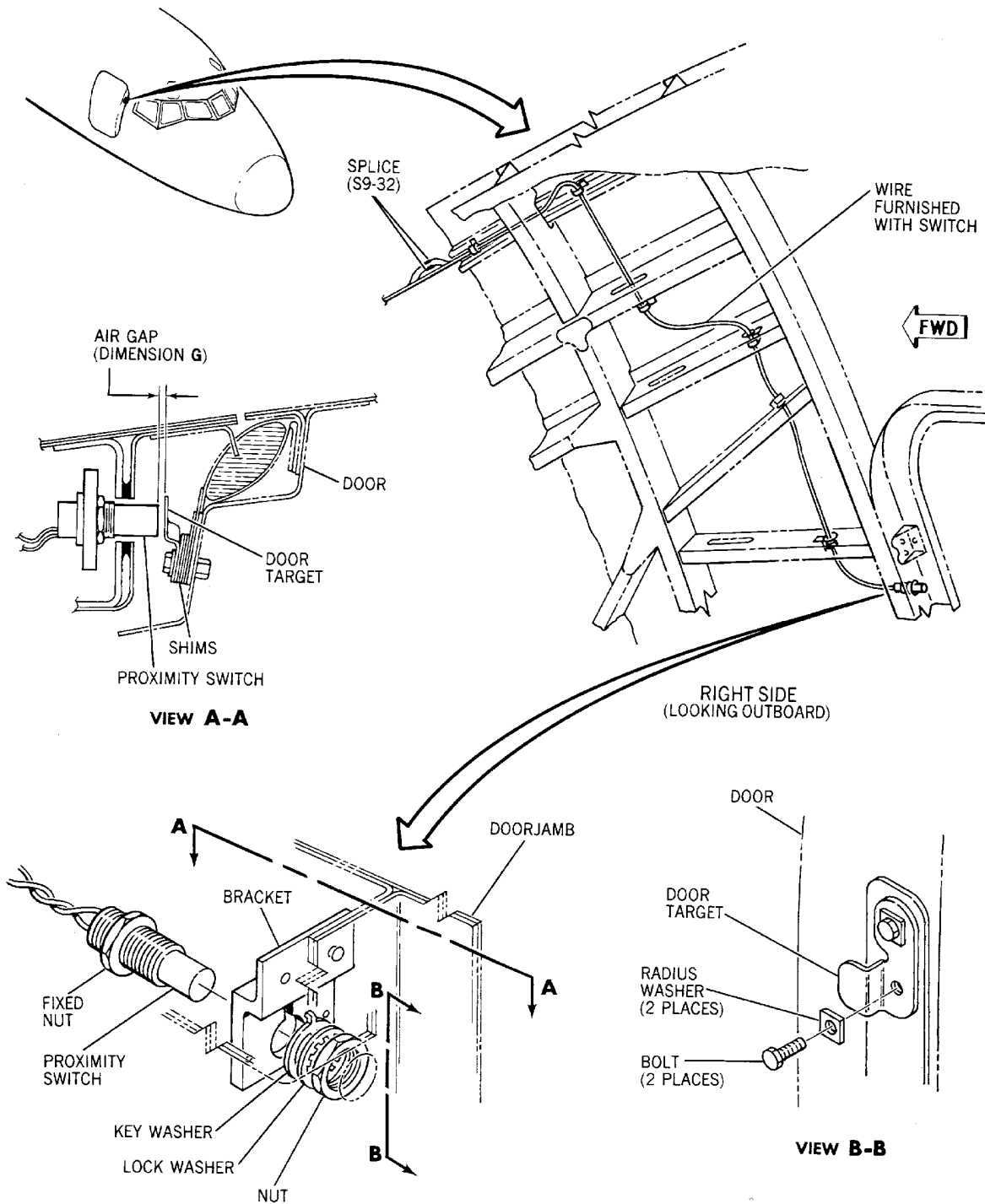
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TP-80MM-WJE

# 52-70-05

Page 202  
Feb 01/2016

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-123B

**Forward Service Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-05-990-801**

EFFECTIVITY  
WJE ALL

**52-70-05**

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Forward Service Door Proximity Switch

#### A. Adjust Forward Service Door Proximity Switch

- (1) Adjust shims on door target for air gap of approximately 0.060 inch (1.524 mm) (Dimension G).
- (2) Adjust shims on door target so FWD GALLEY DOOR light on annunciator panel goes out when end of door handle is no more than 4.0 inches (101.6 mm) from locked position.

#### B. Test Forward Service Door Proximity Switch

- (1) Open forward service door. FWD GALLEY DOOR indication on annunciator panel should come on.
- (2) Close and latch forward service door. FWD GALLEY DOOR indication on annunciator panel should go out.

EFFECTIVITY  
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TP-80MM-WJE

**52-70-05**

Page 204  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD ACCESSORY COMPARTMENT DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the forward accessory compartment door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Removal/Installation Forward Accessory Compartment Door Proximity Switch

##### A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open door latch next to switch.
- (3) Cut switch wires at splice point S9-34 (in right side of wheelwell).
- (4) Remove switch and attached wire.

##### B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Install switch and attached wire. Make certain that switch wires are sleeved past clipping prior to splice point.
- (3) Splice switch wires at splice point S9-34.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Close and lock door latch.

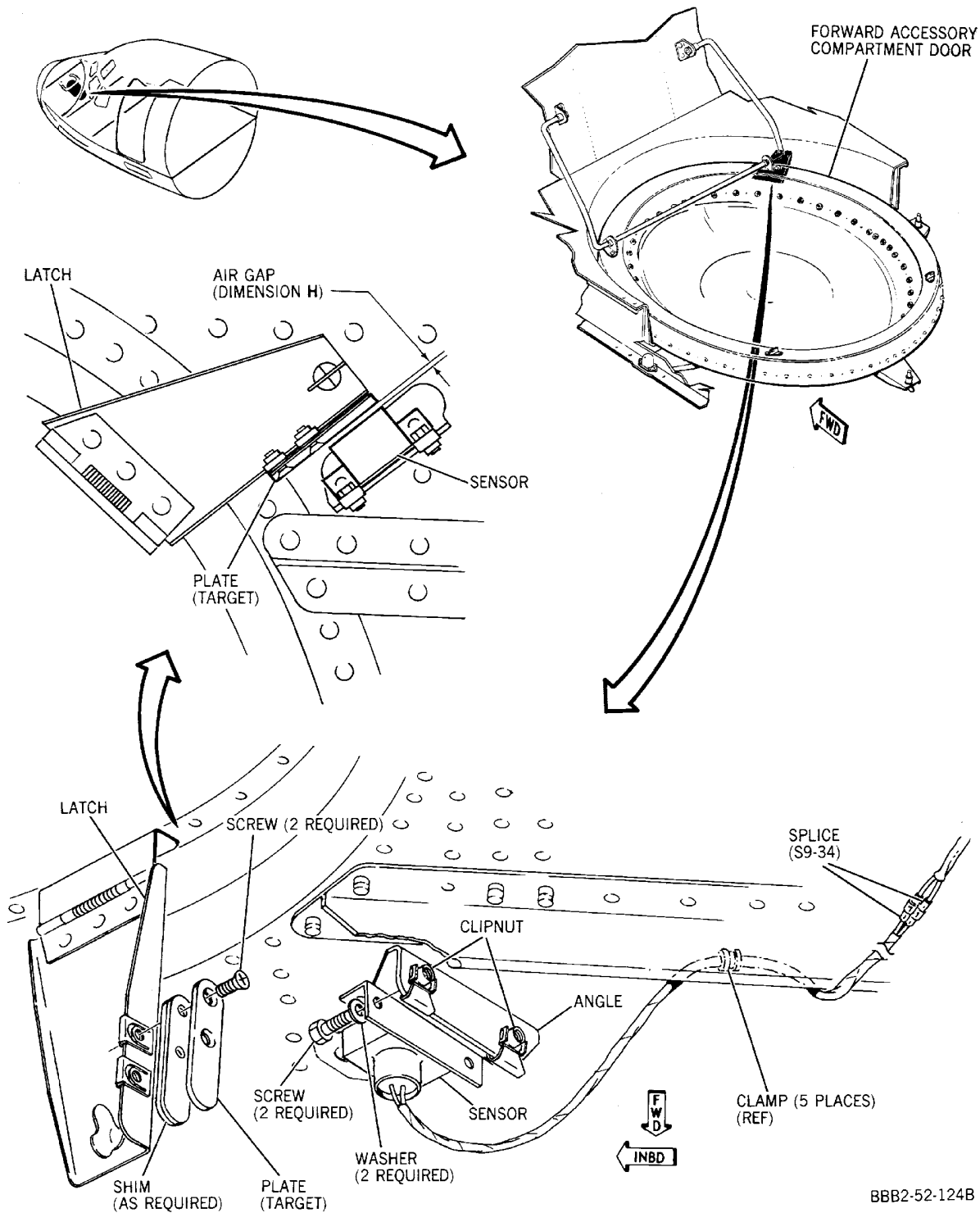
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**52-70-06**

Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-124B

**Forward Accessory Compartment Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-06-990-801**

EFFECTIVITY  
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**52-70-06**

TP-80MM-WJE

Page 202  
Feb 01/2015



**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**

**3. Adjustment/Test Forward Accessory Compartment Proximity Switch**

**A. Adjust Forward Accessory Compartment Door Proximity Switch**

- (1) Make certain that all door latches are locked.
- (2) Adjust shims on door latch target to maintain air gap of 0.120( $\pm$ 0.015) inch (3.048( $\pm$ 0.381) mm) (Dimension H).

**B. Test Forward Accessory Compartment Door Proximity Switch**

- (1) Make certain that all door latches are locked.
- (2) Open door latch. ACCESS COMPT DOOR indication on annunciator panel should come on.
- (3) Close and lock door latch. ACCESS COMPT DOOR indication on annunciator panel should go out.

EFFECTIVITY  
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TP-80MM-WJE

**52-70-06**

Page 203  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ELECTRICAL/ELECTRONICS DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

### 1. General

- A. This procedure provides maintenance practices for the electrical/electronics door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

### 2. Removal/Installation Electrical/Electronics Door Proximity Switch

#### A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Open electrical/electronics door.
- (3) Cut switch wires at splice point S9-33 (inside right hand doorjamb).
- (4) Remove switch and attached wire.

#### B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Install switch and attached wire.
- (3) Splice switch wires at splice point S9-33.
- (4) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Close door.

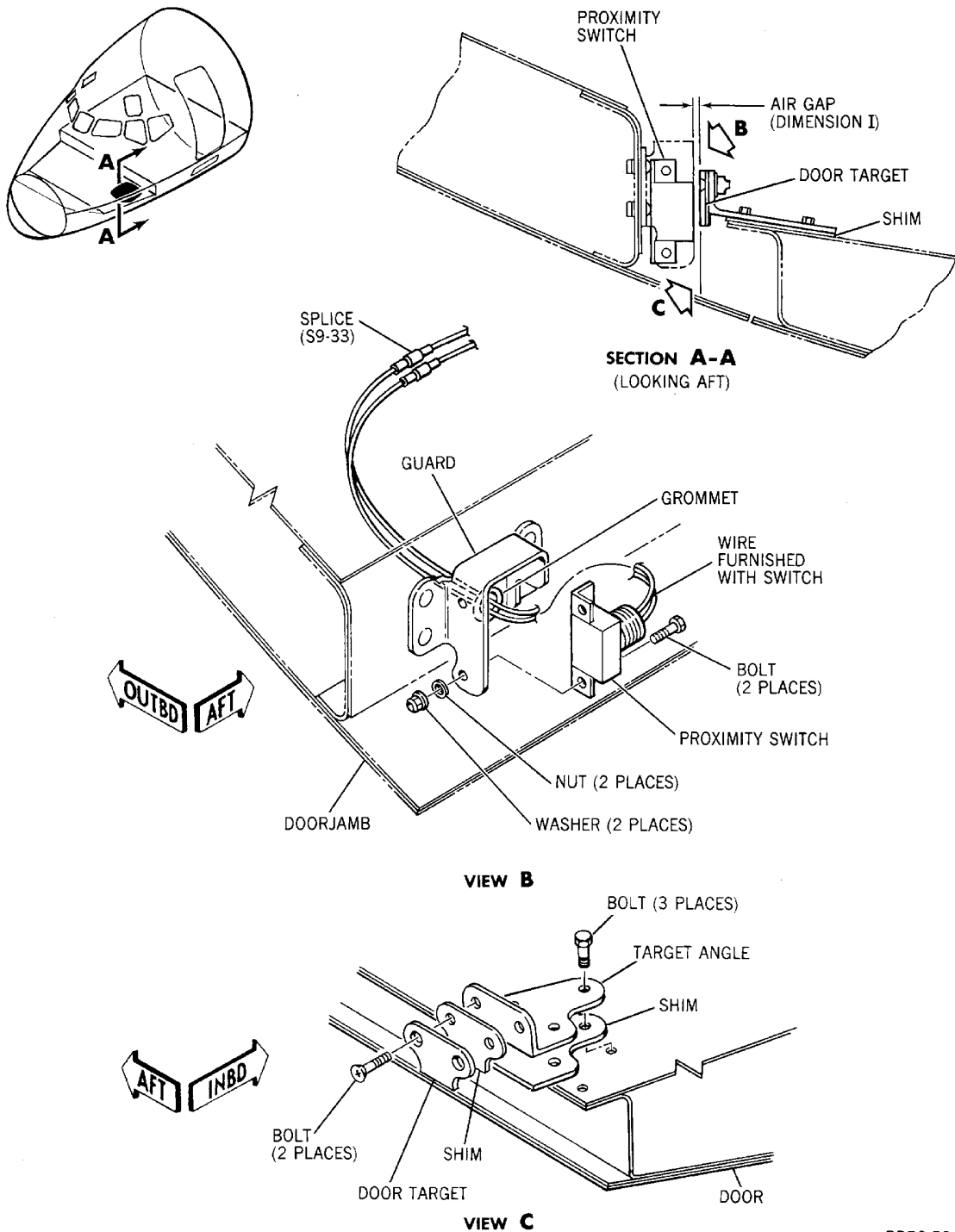
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Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-52-125B

**Electrical/Electronics Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-07-990-801**

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**52-70-07**

TP-80MM-WJE

Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Electrical/Electronic Door Proximity Switch

#### A. Adjust Electrical/Electronic Door Proximity Switch

- (1) Make certain that door is adjusted. (PAGEBLOCK 52-43-00/501)
- (2) If required, adjust shims under target angle to center target on sensor face.
- (3) Adjust shims on door target to maintain air gap of 0.125( $\pm$ 0.015) inch (3.175( $\pm$ 0.381) mm) (Dimension I).

#### B. Test Electrical/Electronic Door Proximity Switch

- (1) Open electrical/electronic compartment door. ELECT COMPT DOOR indication on annunciator panel should come on.
- (2) Close and latch electrical/electronic compartment door. ELECT COMPT DOOR indication on annunciator panel should go out.

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TP-80MM-WJE

**52-70-07**

Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the forward airstair door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Removal/Installation Forward Airstair Door Proximity Switch

##### A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (2) Open door.
- (3) Cut switch wires at splice point S9-31 (inboard and forward of switch).
- (4) Remove switch and attached wire.

##### B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (2) Install switch and attached wire.
- (3) Splice switch wires at splice point S9-31.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Close door.

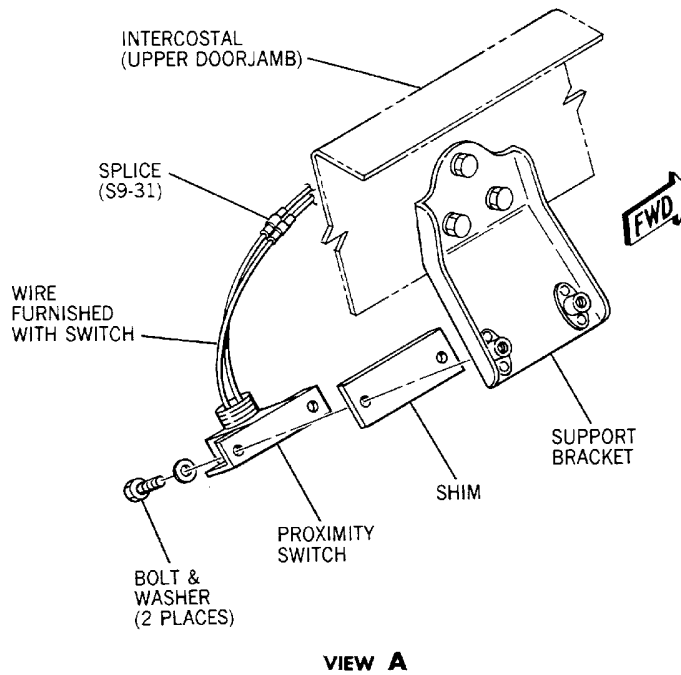
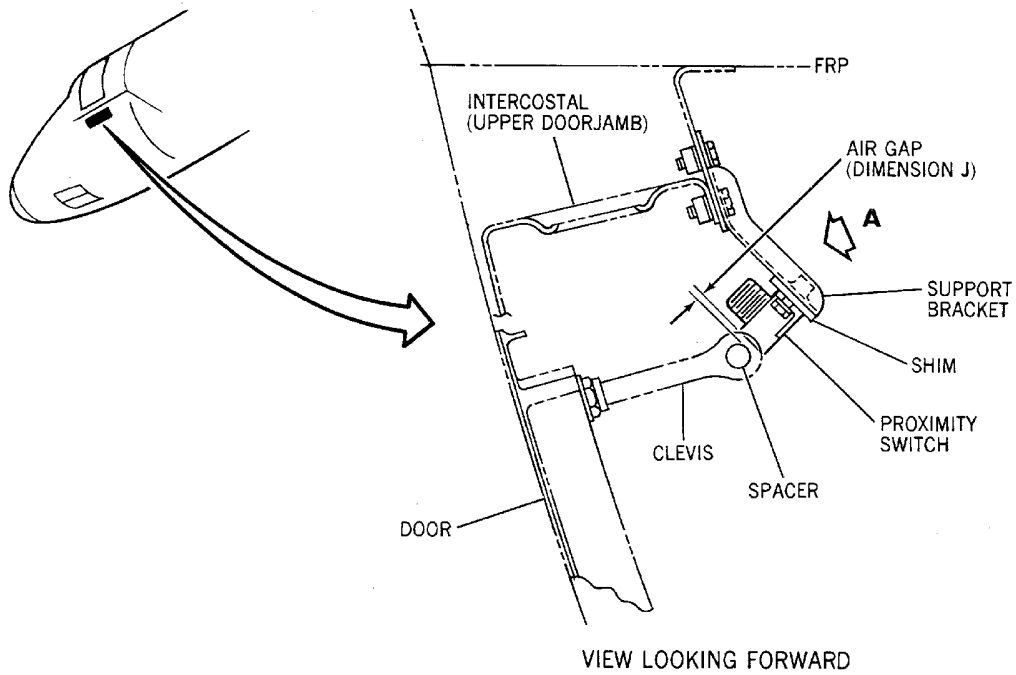
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**52-70-08**

Config 1  
 Page 201  
 Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



8BB2-52-126B

**Forward Airstair Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-08-990-802**

EFFECTIVITY  
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TP-80MM-WJE

**52-70-08**

Config 1  
Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Forward Airstair Door Proximity Switch

#### A. Adjust Forward Airstair Door Proximity Switch

- (1) Place clay or soft putty on face of sensor.

NOTE: On aircraft with flat target area on spacer, make certain that face of target is parallel with face of sensor with 0.03 inch (0.762 mm).

- (2) Close and latch door.
- (3) Check that depth of clay on sensor face where spacer (target) makes contact is 0.015 to 0.040 inch (0.38 to 1.02 mm)(dimension J).
- (4) With new clay or putty on sensor face, slowly close door until faired with fuselage (do not latch).
- (5) Check that depth of clay on sensor face is less than 0.160 inch (4.66 mm).
- (6) If requirements of Paragraph 3.A.(3) and Paragraph 3.A.(5) are not met, drill out rivet (if installed), and adjust shims under sensor as required.
- (7) Install new rivet.

#### B. Test Forward Airstair Door Proximity Switch

- (1) Open forward airstair door. FWD STAIR DOOR indication on annunciator panel should come on.
- (2) Close and latch forward airstair door. FWD STAIR DOOR indication on annunciator panel should go out.

EFFECTIVITY  
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TP-80MM-WJE

**52-70-08**

Config 1  
Page 203  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### FORWARD AIRSTAIR DOOR PROXIMITY SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the forward airstair door proximity switch. (Figure 201)
- B. Adjustment is necessary only when installing a new door or switch, or if the air gap setting has been altered.
- C. A BITE check of the proximity sensor system can be performed at any time to determine if the PSEU and proximity sensors are functioning properly. (PAGEBLOCK 32-60-00/101)

#### 2. Removal/Installation Forward Airstair Door Proximity Switch

- A. Remove Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (2) Open door.
- (3) Cut switch wires at splice point S9-31 (inboard and forward of switch).
- (4) Remove switch and attached wire.

- B. Install Proximity Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (2) Install switch and attached wire.
- (3) Splice switch wires at splice point S9-31.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (5) Adjust proximity switch. (Paragraph 3.)
- (6) Close door.

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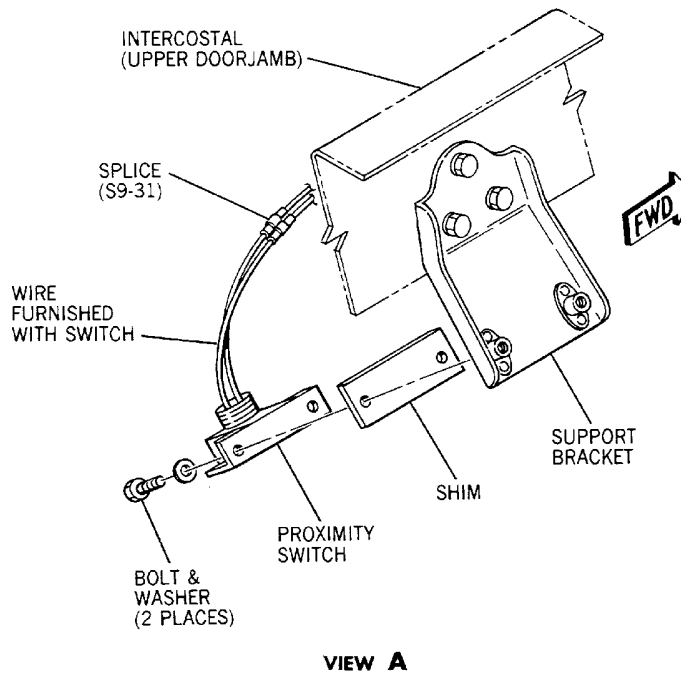
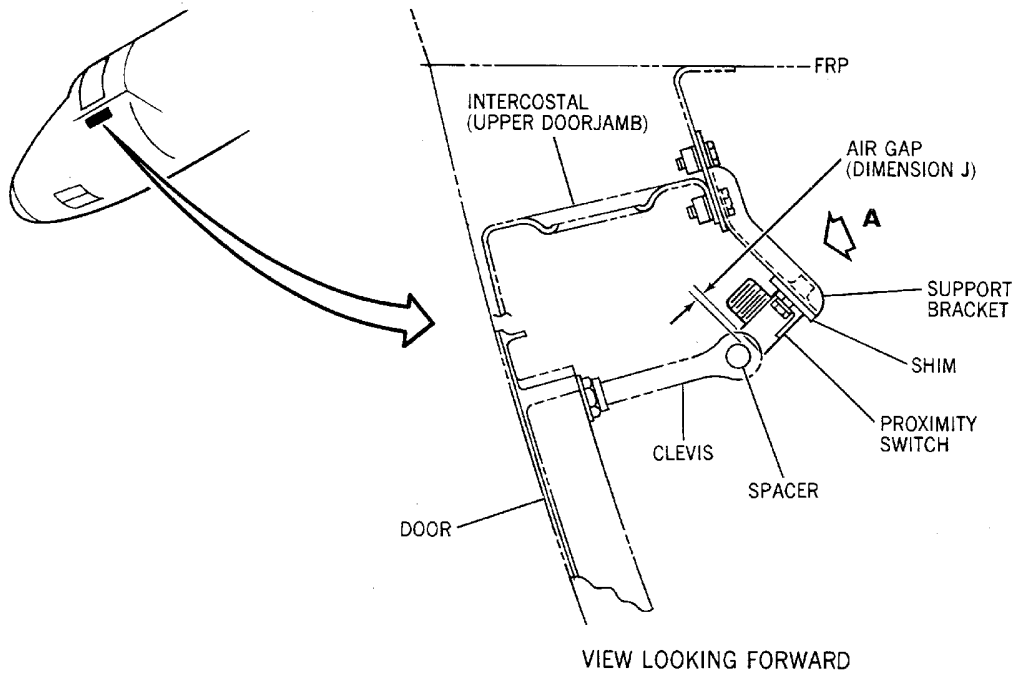
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**52-70-08**

Config 2  
Page 201  
Feb 01/2015



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



8BB2-52-126B

**Forward Airstair Door Proximity Switch - Maintenance Practices  
Figure 201/52-70-08-990-804**

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TP-80MM-WJE

**52-70-08**

Config 2  
Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Forward Airstair Door Proximity Switch

#### A. Adjust Forward Airstair Door Proximity Switch

- (1) Place clay or soft putty on face of sensor.

NOTE: On aircraft with flat target area on spacer, make certain that face of target is parallel with face of sensor with 0.03 inch (0.762 mm).

- (2) Close and latch door.
- (3) Check that depth of clay on sensor face where spacer (target) makes contact is 0.015 to 0.040 inch (0.38 to 1.02 mm)(dimension J).
- (4) With new clay or putty on sensor face, slowly close door until faired with fuselage (do not latch).
- (5) Check that depth of clay on sensor face is less than 0.160 inch (4.66 mm).
- (6) If requirements of Paragraph 3.A.(3) and Paragraph 3.A.(5) are not met, drill out rivet (if installed), and adjust shims under sensor as required.
- (7) Install new rivet.

#### B. Test Forward Airstair Door Proximity Switch

- (1) Open forward airstair door. FWD STAIR DOOR indication on annunciator panel should come on.
- (2) Close and latch forward airstair door. FWD STAIR DOOR indication on annunciator panel should go out.

EFFECTIVITY  
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TP-80MM-WJE

**52-70-08**

Config 2  
Page 203  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## VENTRAL STAIR DOWNLATCH SWITCH - MAINTENANCE PRACTICES

### 1. General

- A. This procedure provides maintenance practices for the ventral stair downlatch switch. The procedure applies for both left and right switches.
- B. This switch and its cover have been factory positioned, and should require no further adjustment.

### 2. Removal/Installation Ventral Stair Downlatch Switch

#### A. Remove Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Make certain that ventral stairs are down and locked.
- (3) Remove switch cover.
- (4) Remove switch from structure.
- (5) Disconnect electrical connector.

#### B. Install Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Attach switch to electrical connector.
- (3) Install switch on structure.
- (4) Install switch cover.
- (5) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (6) Test switch operation.

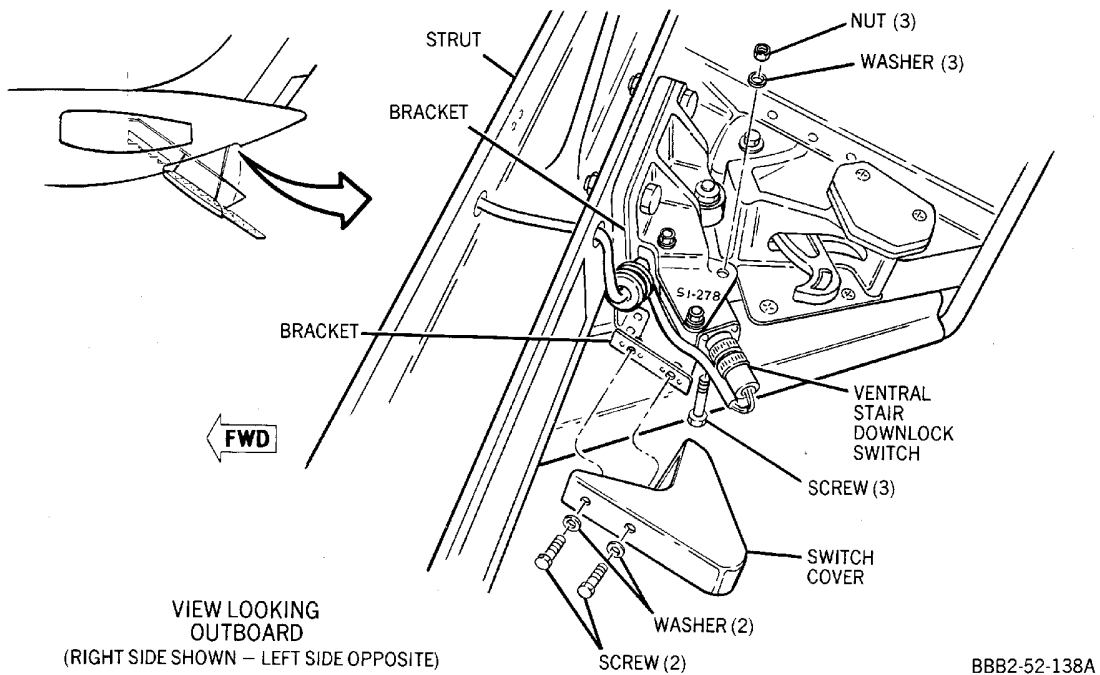
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**52-70-09**

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Page 201  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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**Ventral Stair Downlatch Switch - Maintenance Practices  
Figure 201/52-70-09-990-801**

**3. Test Ventral Stairway Downlatch Switch**

**A. Test Switch**

- (1) Open and lock ventral stairs. AFT STAIRWAY DOOR indication on annunciator panel, and the stair down light on the ventral stair caution indicator should come on.
- (2) Close and latch ventral stairs. AFT STAIRWAY DOOR indication on annunciator panel should go out and the stair down light on the ventral stair caution indicator should go off.

EFFECTIVITY  
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**52-70-09**

Page 202  
Feb 01/2015

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**VENTRAL STAIR UPLATCH SWITCH - MAINTENANCE PRACTICES**

**1. General**

A. This procedure provides maintenance practices for the ventral stair uplatch switch. This procedure applies for both left and right switches.

B. This switch and its cover have been factory positioned, and should require no further adjustment.

**NOTE:** Switch may not actuate if latch hook is not bottomed on roller. Latch hook and/or left lower strut may require adjustment. (PAGEBLOCK 52-63-00/501)

**2. Removal/Installation Ventral Stair Uplatch Switch**

A. Remove Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

(2) Make certain that hydraulic power is available. (HYDRAULIC POWER, CHAPTER 29)

**WARNING:** STAIR MUST BE SUPPORTED TO PREVENT MOVEMENT DUE TO HYDRAULIC BLEEDDOWN WHEN STAIR IS NOT FULLY EXTENDED. INADVERTENT MOVEMENT OF STAIR COULD BE HAZARDOUS TO PERSONNEL.

(3) Using control handle, position stair so four step folding segment is at approximately right angle to main stair.

(4) Place control handle in neutral position, and attach caution tag to handle.

(5) Place suitable padded support under lower end of stair main segment to prevent movement of stair.

(6) Remove switch cover.

(7) Remove switch from structure.

(8) Disconnect electrical connector.

B. Install Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

(2) Attach switch to electrical connector.

(3) Install switch on structure.

(4) Install switch cover.

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**52-70-10**

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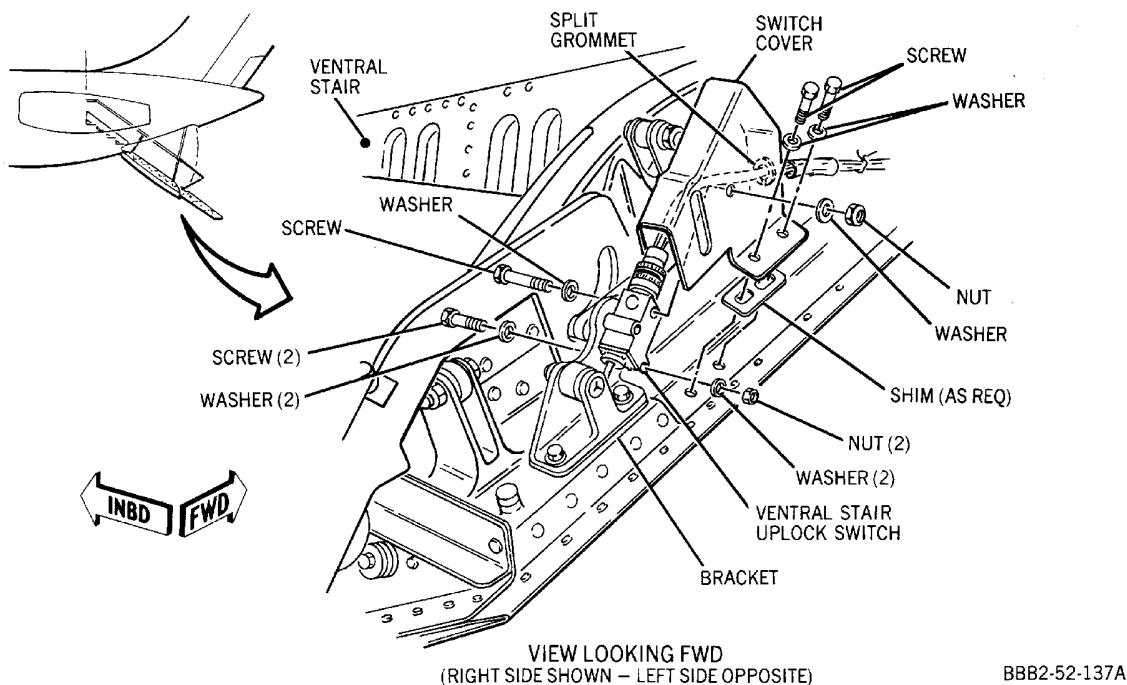
## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (5) Remove the safety tag and close this circuit breaker:

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row	Col	Number	Name
R	24	B1-124	DOOR WARNING

- (6) Remove support from lower end of stairs.  
 (7) Test switch operation.



**Ventral Stair Uplatch Switch - Maintenance Practices**  
**Figure 201/52-70-10-990-801**

### 3. Test Ventral Stairway Uplatch Switch

#### A. Test Switch

- (1) Open and lock ventral stairs. AFT STAIRWAY DOOR indication on annunciator panel should come on.
- (2) Close and latch ventral stairs. AFT STAIRWAY DOOR indication on annunciator panel should go out.

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# 52-70-10

Page 202  
Feb 01/2015

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### TAILCONE EXTERNAL WARNING SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the tailcone external warning switch.
- B. This switch has been factory positioned, and should require no further adjustment.
- C. This switch is tested during adjustment/test of the tailcone. (TAILCONE, SUBJECT 53-53-00, Page 501)

#### 2. Removal/Installation Tailcone External Warning Switch

##### A. Remove Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Remove switch from structure.
- (3) Disconnect electrical connector.

##### B. Install Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Attach switch to electrical connector.
- (3) Install switch on structure.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

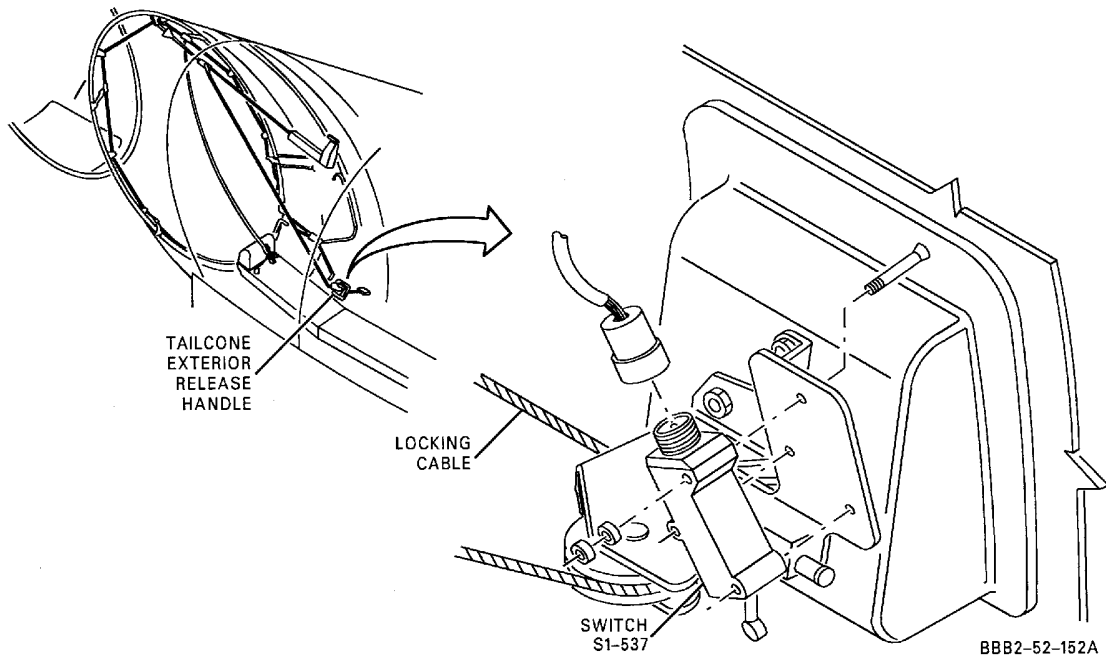
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TP-80MM-WJE

**52-70-11**

Page 201  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



**Tailcone External Warning Switch - Maintenance Practices**  
**Figure 201/52-70-11-990-801**

EFFECTIVITY  
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TP-80MM-WJE

## 52-70-11

Page 202  
Feb 01/2015



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### TAILCONE INTERNAL WARNING SWITCH - MAINTENANCE PRACTICES

#### 1. General

- A. This procedure provides maintenance practices for the tailcone internal warning switch.
- B. This switch has been factory positioned, and should require no further adjustment.
- C. This switch is testing during adjustment/test of the tailcone. (TAILCONE, SUBJECT 53-53-00, Page 501)

#### 2. Removal/Installation Tailcone Internal Warning Switch

- A. Remove Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Open this circuit breaker and install safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Remove switch from structure.
- (3) Disconnect electrical connector.

- B. Install Switch

**WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Make sure that this circuit breaker is open and has safety tag:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- (2) Attach switch to electrical connector.
- (3) Install switch on structure.
- (4) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

- C. Do the TAILCONE ADJUSTMENT/TEST (TAILCONE, SUBJECT 53-53-00, page 501)

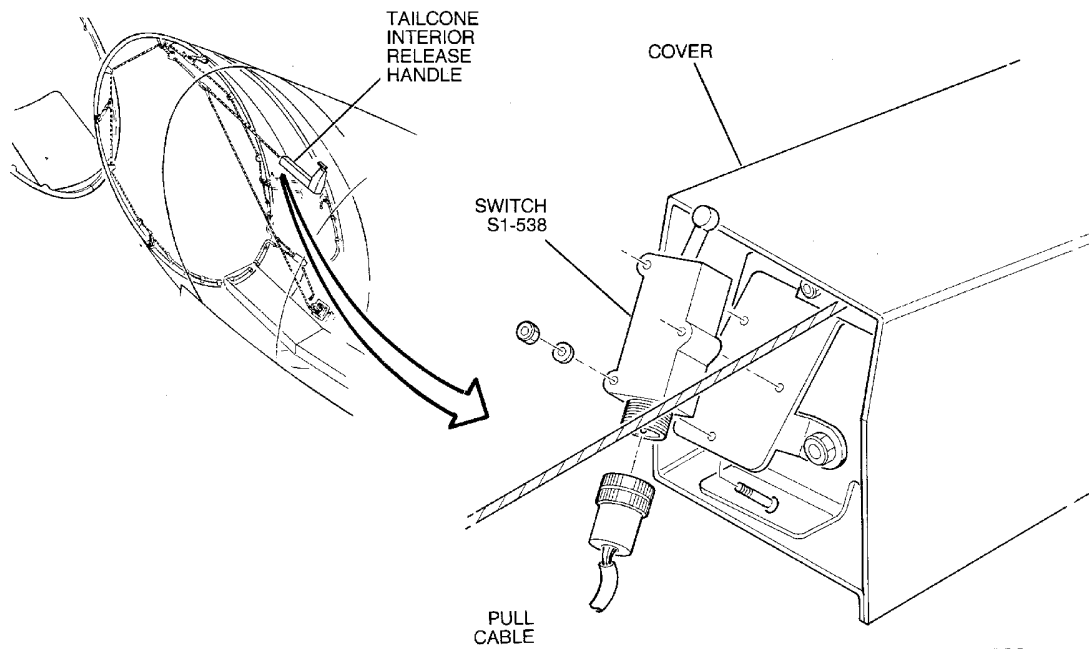
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**52-70-12**

Page 201  
Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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**Tailcone Internal Warning Switch - Maintenance Practices**  
**Figure 201/52-70-12-990-801**

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Page 202  
Feb 01/2015