


	FUNCTIONAL TEST	PFBFA-52-12-01-00/0	Issue	A	Pages.	18
	SPF, Aircraft System Engineering Department					
Aircraft	A330 MRTT					
Title: Cockpit Door functional test						
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1 INTRODUCTION

1.1 Object

This document establishes the functional test to carry out on the A330 MRTT RAAF Cockpit Door, in order to demonstrate that the cockpit door has been mounted correctly and that both Door and Cockpit Door Lock System work as expected.

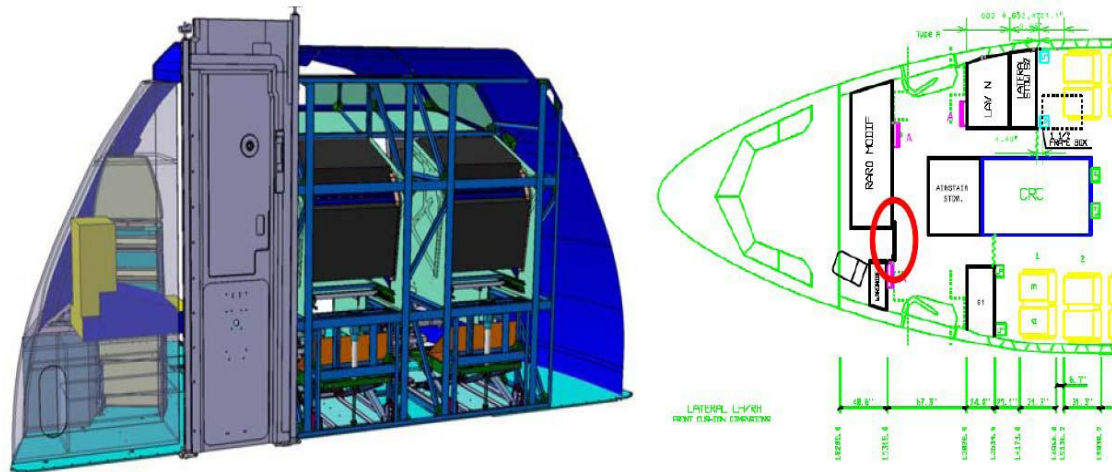


Figure 1. Cockpit Door relocation

1.2 DESCRIPTION

The Cockpit Door system is composed by two parts:

- The Cockpit Door
- The Cockpit Door Lock System

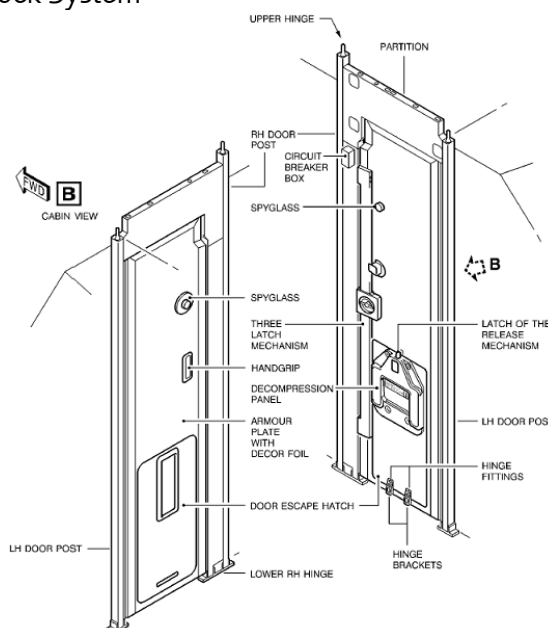


Figure 2. Main parts of the Cockpit Door

The MRTT modification in the Cockpit Door system only affects to the structural fixation to the A/C. The CDLS is not affected by MRTT conversion except for the Electrical harnesses to reach the new location.

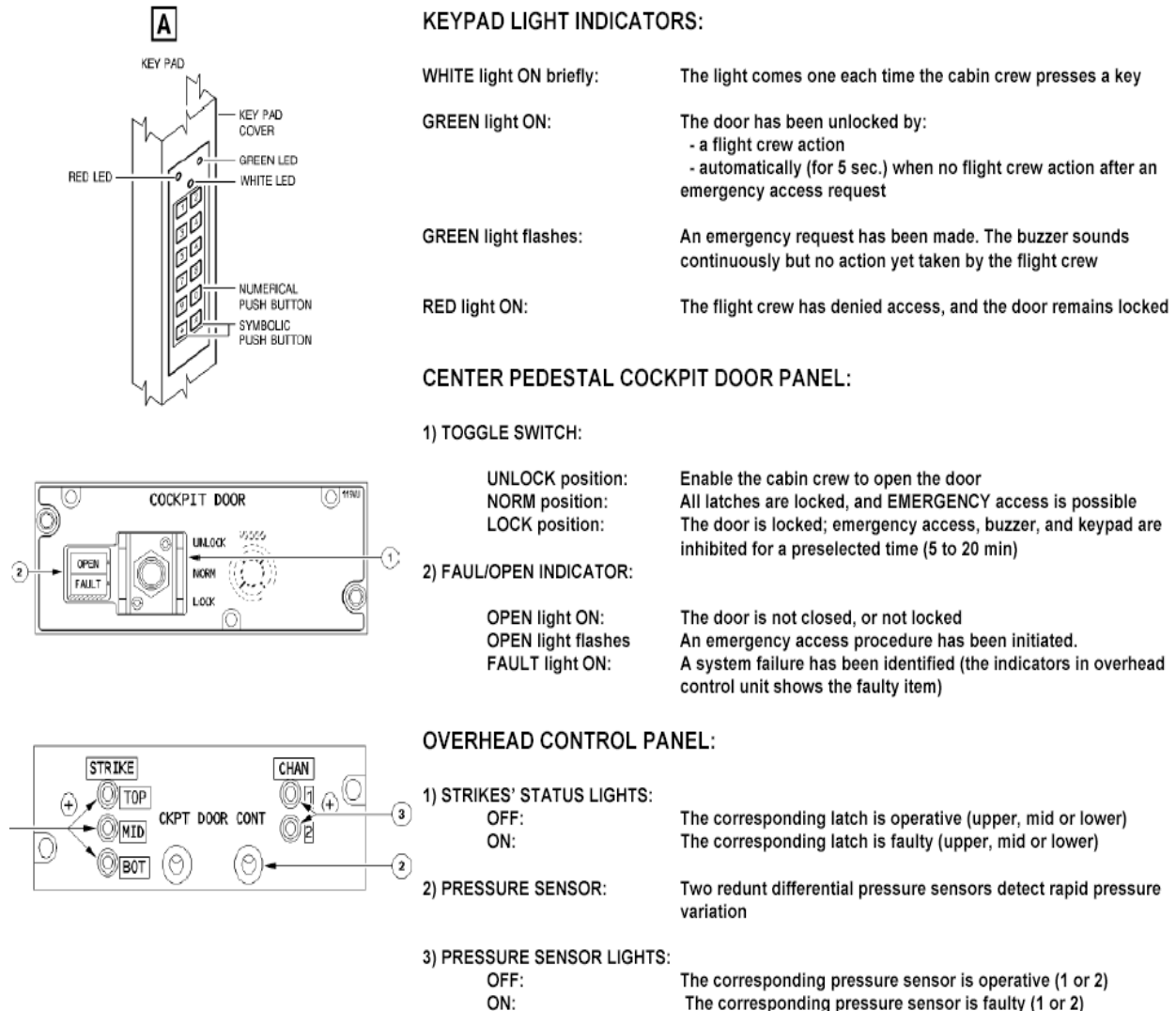


Figure 3. Summary of CDLS indications

1.3 List of acronyms and abbreviations

AMM	Aircraft Maintenance Manual
ASSY	Assembly
INST	Installation
MRTT	Multi-Role Tanker Transport
N/A	Not Applicable
RAAF	Royal Australian Air Force
A/C	Aircraft
Fwd	Forward
Aft	Afterwards
C/B	Circuit Breaker
CDLS	Cockpit Door Lock System

2 APPLICABLE DOCUMENTATION

NT-FA-AEO-07-187 ATA 52 A330 MRTT RAAF. COCKPIT DOOR INSTALLATION.
GROUND TEST REQUIREMENTS

DT-FA-AEO06-212 A330-200 MRTT ATA 25 EQUIPMENT/FURNISHING
MODIFICATION DESCRIPTION. MILITARY CONFIGURATION

JAR 25 Change 13 effective on October 5, 1989

DT-FA-AEO-06-165 ATA 25 A330-22 CIVIL CERTIFICATION PROGRAM PLAN

AMM Aircraft Maintenance Manual

ASM Aircraft Schematic Manual

AWM Aircraft Wiring Manual

3 AIRCRAFT CONFIGURATION

The next assemblies must be installed before test execution:

ITEM	DRAWING
COCKPIT DOOR MODIFICATION	F251A0003000
COCKPIT DOOR INSTALATION	F251A0110000
MAGNETIC LATCH INSTALATION	F251A0130000

Table 1. Airstairs test A/C configuration

The next tasks must be performed before Cockpit door test:

- Electrical power on of the A/C, according with TASK 24-41-00-861-801 of AMM: Energize the Aircraft Electrical Circuits from the External Power A.
- Bonding and grounding test of the A/C must be performed.
- Detailed Inspection of Mechanical Parts of Door Locking System, according with TASK 52-51-00-200-801.
- Adjustment of the Cockpit Door and Door Latch Mechanism, according with TASK 52-51-11-820-801.
- Cockpit door must be programmed. If it is not, see Annex 1 for further details.

3.1 Test equipment

No special tooling is required.

3.2 Personnel required for the test

Two (2) operators:

- One operator (acting as flight crew member) from the cockpit side (OP-1)
- One operator (acting as cabin crew member) from the cabin side (OP-2).

One (1) observer

4 DEFINITIONS

N/A.

5 PRELIMINARY INSTRUCTIONS

5.1 Safety Instructions

- All relevant Work Standing Orders concerning safety must be complied with.
- Trained personal must be used perform the CDLS functional test.
- Make certain that personnel or any obstructions are in the way Cockpit Door opening way. For this purpose Cockpit must be clear:

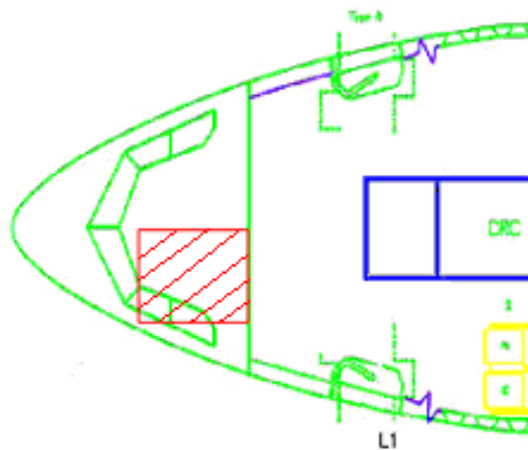


Figure 4. Area to be clear when performing the functional test

5.2 Preliminary actions

- Check the Cockpit Door condition, chafing and cracks.
- Check for the keypad panel condition.
- Check for continuity in 1MQ breaker.
- The following circuit breaker must be closed: 1MQ (Cockpit Door Latch) at 722VU.
- All the engines and the APU shall be shut down.

6 TEST EXECUTION

6.1 Test conditions

The following **test conditions** will apply unless otherwise stated:

Ambient conditions:	Temperature: -15°C to 40°C
Aircraft attitude:	Pitch: 0° approximately
	Roll: 0° approximately
	The aircraft must rest in a flat surface over its landing gear

6.2 CDLS functional test

NOTE: See Annex 8.1 to see figures explaining location of the different control panels and components

1. Cockpit Door Locking System (CDLS) Test

- 1.1 On the center pedestal cockpit door panel, set and hold the toggle switch on the UNLOCK position.
 - The cockpit door will be unlocked
- 1.2 Move the cockpit door in the open direction.
 - The OPEN indication on the center pedestal comes on.
- 1.3 On the center pedestal cockpit door panel, release the toggle switch. It returns to the NORM position automatically.
 - The door latches are blocked
- 1.4 With the door in open position, set and hold the toggle switch on the LOCK position. Touch the three latches on the doorframe: they must maintain locked.
- 1.5 On the center pedestal cockpit door panel, release the toggle switch. It returns to the NORM position automatically.
 - The door latches are blocked
- 1.6 Move the door in the close direction. It is automatically locked.
 - The OPEN indication on the center pedestal goes off
- 1.7 Turn the D-ring of the door latch mechanism and move the door in the open direction.
 - The OPEN indication comes on center pedestal
- 1.8 Close the cockpit door.
 - The OPEN indication on the center pedestal goes off
 - The door latch mechanism locks the door automatically

2. Cockpit Door Routine Access Test

- 2.1 Push the "#" pushbutton or "defined number N" + "#" on the keypad.
 - The buzzer comes on
- 2.2 On the center pedestal door panel, put and hold the toggle switch in the UNLOCK position.
 - The green LED on the keypad comes on
 - The cockpit door is unlocked
- 2.3 Push or pull the cockpit door in the open direction.
 - The OPEN indication in the center pedestal light comes on
- 2.4 On the center pedestal door panel, release the toggle switch. It returns to the NORM position automatically.
 - The door latches are blocked
 - The green LED on center pedestal VU comes on
- 2.5 Push or pull the cockpit door in the close direction.
 - The door is automatically locked. It will not open
 - The OPEN indicator on the center pedestal goes off.
- 2.6 Push the "#" pushbutton or "defined number N" + "#" on the keypad. The buzzer comes on.
- 2.7 On the center pedestal panel, put and hold the toggle switch in the LOCK position.
 - The red LED on the keypad comes on.
 - The door stays in locked condition (during a period of 5 to 15 min the functions of the keypad and the buzzed will be off, unless the toggle switch comes back to unlock position).
- 2.8 Release the toggle switch. It returns to the NORM position automatically.

3. Cockpit Door Emergency Access Test

- 3.1 Enter the "emergency entry code **0763**" + "#" on the keypad.
 - The buzzer comes on
 - The OPEN indicator light in center pedestal flashes
 - The green LED on the keypad flashes
- 3.2 Wait for the defined period of time (adjustable between 15 sec. and 2 min.) to simulate no "flight crew reaction".
 - The cockpit door is unlocked for 5 sec
 - The OPEN and FAULT indications in center pedestal flashes
 - The green LED comes on for 5 sec.
- 3.3 Open the cockpit door and close it again. It moves to the open direction and back in its locked position.

3.4 Enter the "emergency entry code" + "#" on the keypad.

- The buzzer comes on
- The OPEN indicator light in center pedestal flashes
- The green LED on keypad flashes

3.5 In the center pedestal door panel, set and hold the toggle switch to the UNLOCK position, within a defined period of time (between 15 sec. and 2 min.)

- The door is unlocked
- The green LED on the keypad comes on
- The buzzer goes off

3.6 Open the cockpit door and close it again. It moves to the open direction and back in its locked position.

3.7 Enter the "emergency entry code" + "#" on the keypad.

- The buzzer comes on.
- The open indicator in center pedestal flashes
- The green LED on the keypad flashes

3.8 In the center pedestal door panel, set and hold the toggle switch to the LOCK position, within a defined period of time (between 15 sec. And 2 min).

- The door remains locked
- The buzzer goes off
- The green LED on the key pad goes off
- The red LED comes on

(during this period of time the functions of the key pad and the buzzer are isolated. You can reactivate these when you set the toggle in the UNLOCK position).

7 TEST RESULTS

The test equipment used has to be logged on the next table.

Equipment	Manufacturer	Model	Tool identification	Calibration date	Next calibration date

Table 2. List of test equipment used

IMPORTANT NOTE: Any comments or remarks arisen during test execution shall be written down here and send to Engineering Department. Non-conformities shall be processed according to CASA-1023.

NOTE: In Case of NCS, write down its number on Table 3.

N.C.S. Number	Date

Table 3

NOTE: After this functional test execution, stamp the correspondent operation on the Production Order.

NOTE: Every result sheet must be stamped and attached to Production Order.

STAMP:	
DATE:	

8 ANNEX

8.1 FIGURES

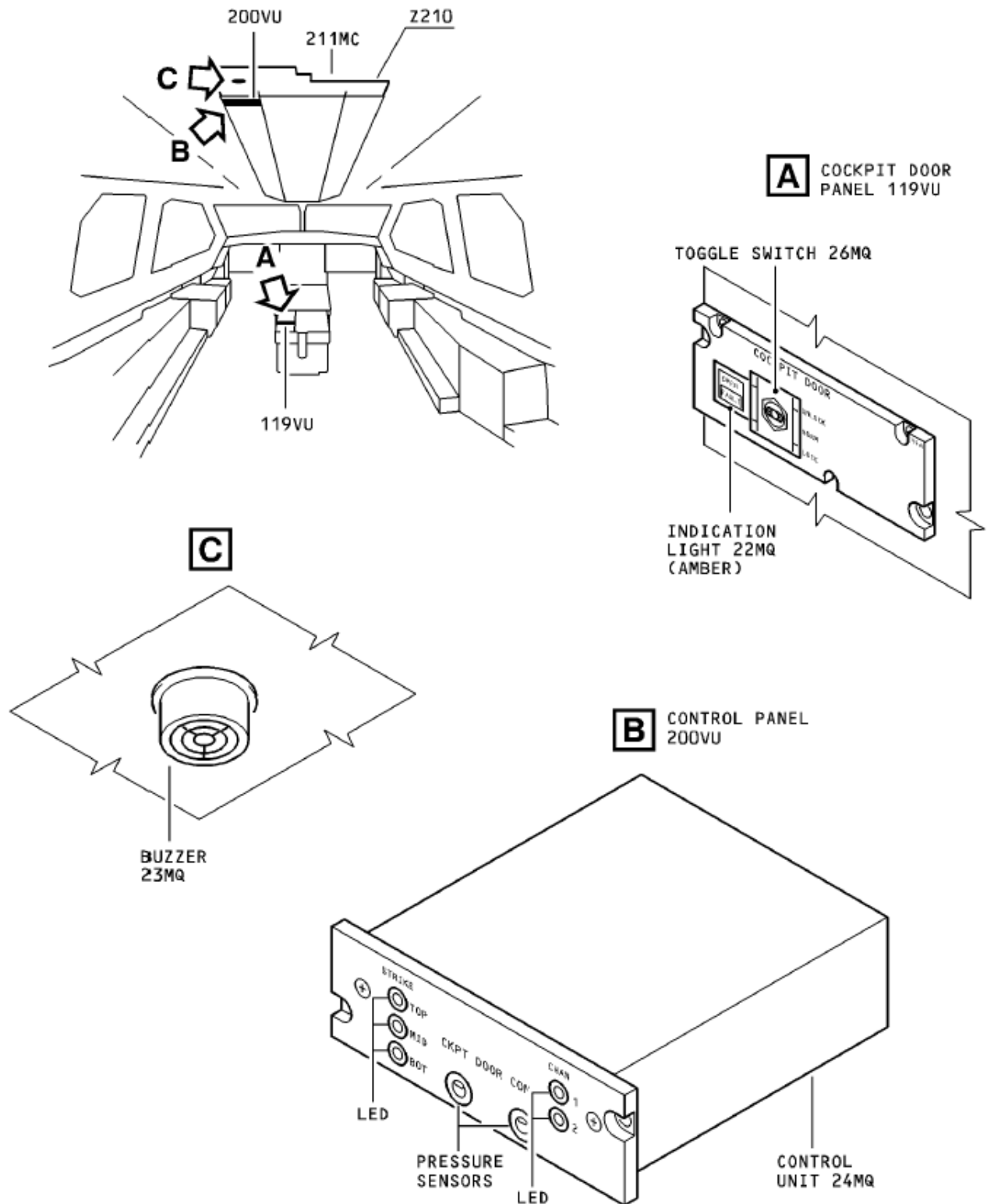


Figure 5. Location of the control panels in the cockpit

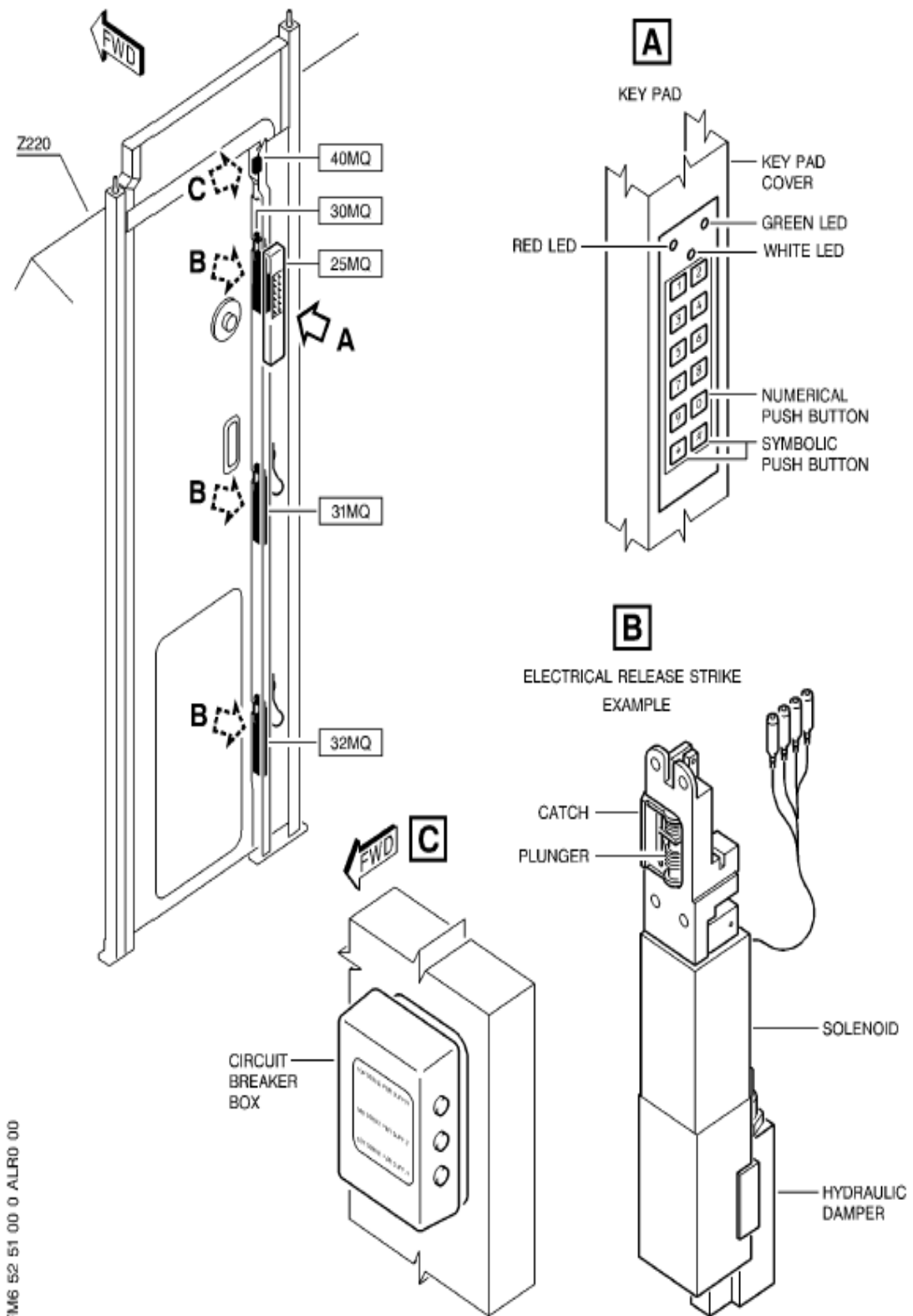


Figure 6. Location of main components of the Cockpit Door

8.2 FLIGHT DECK DOOR PROGRAMMING

1. Ensure both red and green led's on the keypad are off (if not cycle dr lock c/b).
2. Enter code 98765*# (to enter to pgm code). Both RED and GREEN keypad LED's should flash.
3. Operate Flight Deck switch to unlock momentarily within 10 secs. GREEN keypad should illuminate steadily.
4. Enter code 0129*# within 10 sec. RED keypad LED should illuminate steady (both LED's now on steady).
5. Enter 08***2543**# unlock code (RED LED flashes then steady).
6. Enter 07*1# (1# is doorbell code).
7. Enter 10*# (to exit pgm mode). Both keypad LED's will now extinguish. This step completes the programming.

8.3 TEST DATA SHEET

Fill the following tables with test results:

1. Operational Test of the Cockpit-Door Lock System (CDLS):

STEP	STEP RESULT (TICK BOX)	COMMENT (IF FAIL)
1.1	"OPEN" and "FAULT" lamps come on after setting the ANN LT switch to "TEST" position	
	PASS	FAIL
	"TOP", "MID" and "BOT STRIKE" LED's come on after setting the ANN LT switch to "TEST" position	
	PASS	FAIL
	"CHAN 1" and "CHAN 2" LED's come on after setting the ANN LT switch to "TEST" position	
	PASS	FAIL
	"TOP", "MID" and "BOT STRIKE" LED's go off after setting the ANN LT switch to "BRT" position	
	PASS	FAIL
	"CHAN 1" and "CHAN 2" LED's go off after setting the ANN LT switch to "BRT" position	
	PASS	FAIL
1.2	Catches get free when setting the toggle switch to "UNLOCK" position (on 119 VU panel)	
	PASS	FAIL
	"OPEN" indication on center pedestal comes on when opening door	
	PASS	FAIL
	Toggle switch returns to "NORM" position automatically when releasing it	
	PASS	FAIL

	Catches get blocked when releasing toggle switch			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
	"OPEN" indication on center pedestal goes off when closing the door			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
	Door is automatically locked after closing it			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
1.3	"OPEN" indication on center pedestal comes on when turning D-ring and opening the door from the cockpit			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
	The two parts of the magnetic latch engage correctly and the door is secured			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
	The magnetic latch can be released with the expected man load			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
	"OPEN" indication on center pedestal comes off when closing the door from the cockpit			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
OVERALL TEST RESULTS (TICK BOX)		COMMENTS		
PASS				
FAIL				

2. Checking the routine access:

STEP	STEP RESULT (TICK BOX)	COMMENT (IF FAIL)
AUTHORIZED ENTRY		
2.1	The buzzer comes on when pushing the "#" on the keypad	
	PASS	<input type="checkbox"/>
2.2	Green LED on the key pad comes on when setting the toggle switch to "UNLOCK" (on center pedestal)	
	PASS	<input type="checkbox"/>
	Cockpit door is unlocked	
	PASS	<input type="checkbox"/>
	"OPEN" indication on center pedestal comes on when opening door	
	PASS	<input type="checkbox"/>
	Toggle switch returns to "NORM" position automatically when releasing it	
	PASS	<input type="checkbox"/>
	Catches get blocked when releasing toggle switch	
	PASS	<input type="checkbox"/>
	"OPEN" indication on center pedestal goes off when closing the door	
	PASS	<input type="checkbox"/>
	Door is automatically locked after closing it	
	PASS	<input type="checkbox"/>
	Door does not open after trying to open it	
	PASS	<input type="checkbox"/>
REJECTED ENTRY		
2.3	The buzzer comes on when pushing the "#" on the keypad	
	PASS	<input type="checkbox"/>
2.4	Red LED on the key pad comes on when setting the toggle switch to "LOCK" (on center pedestal)	
	PASS	<input type="checkbox"/>

	Cockpit door stays locked (during a period of 5 to 15 min, unless the toggle switch comes back to "UNLOCK" position)			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
	Toggle switch returns to "NORM" position automatically when releasing it			
	PASS	<input type="checkbox"/>	FAIL	<input type="checkbox"/>
OVERALL TEST RESULTS (TICK BOX)			COMMENTS	
PASS	<input type="checkbox"/>			
FAIL	<input type="checkbox"/>			

3. Checking the Emergency Access

STEP	STEP RESULT (TICK BOX)	COMMENT (IF FAIL)
NO REACTION		
3.1	The buzzer comes on when pushing the "0763" + "#" on the keypad	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	"OPEN" indicator light in center pedestal flashes	
	PASS	<input type="checkbox"/>
3.2	Green LED on the keypad flashes	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	The cockpit door is unlocked for 5 sec after waiting for a defined period of time (15 sec to 2 min)	
	PASS	<input type="checkbox"/>
3.2	"OPEN" and "FAULT" indications in center pedestal comes on for 5 sec	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	The door can be opened	
	PASS	<input type="checkbox"/>
AUTHORIZED ENTRY		
3.3	The buzzer comes on when pushing the "0763" + "#" on the keypad	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	"OPEN" indicator light in center pedestal flashes	
	PASS	<input type="checkbox"/>
3.4	Green LED on the keypad flashes	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	The door is unlocked after setting and holding the toggle switch on the center pedestal to UNLOCK	
	PASS	<input type="checkbox"/>
3.4	Green LED on the keypad comes on	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	The buzzer goes off	
	PASS	<input type="checkbox"/>
3.5	The door can be opened	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	REJECTED ENTRY	
	The buzzer comes on when pushing the "0763" + "#" on the keypad	
3.5	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
	"OPEN" indicator light in center pedestal flashes	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>
3.5	Green LED on the keypad flashes	
	PASS	<input type="checkbox"/>
	FAIL	<input type="checkbox"/>

	PASS		FAIL		
3.6	The door remains locked when setting and holding the toggle switch to "LOCK" position on center pedestal				
	PASS		FAIL		
	Red LED on the keypad comes on				
	PASS		FAIL		
	The buzzer goes off				
	PASS		FAIL		
3.7	Green LED on the keypad goes off				
	PASS		FAIL		
OVERALL TEST RESULTS (TICK BOX)			COMMENTS		
PASS					
FAIL					

Table 4. Test result table