# CHAPTER

# 52

# Doors

# CHAPTER 52
# DOORS



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

# 52-EFFECTIVE PAGES

## CHAPTER 52
## DOORS

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# 52-EFFECTIVE PAGES

CHAPTER 52
DOORS



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

# 52-EFFECTIVE PAGES

# CHAPTER 52
# DOORS



# 52-CONTENTS

## CHAPTER 52
## DOORS



# 52-CONTENTS

## CHAPTER 52
## DOORS



# 52-CONTENTS

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# DOORS - INTRODUCTION

## Purpose

The doors are movable units that give access to the airplane compartments.

## General Description

These are the types of doors on the airplane:

- Forward and aft entry doors
- Forward and aft galley service doors
- Emergency exit doors
- Cargo doors
- Miscellaneous access doors.

A door warning system shows the crew that pressure bearing doors are closed and properly latched before flight.

Pressure doors have silicon rubber seals. The seals do these things:

- Seal air and light leaks
- Act as acoustic and thermal barriers
- Supply aerodynamic smoothness.

See the main gear and doors section for more information on the landing gear doors. (SECTION 32-10)

## Location

The entry doors are on the left side of the airplane.

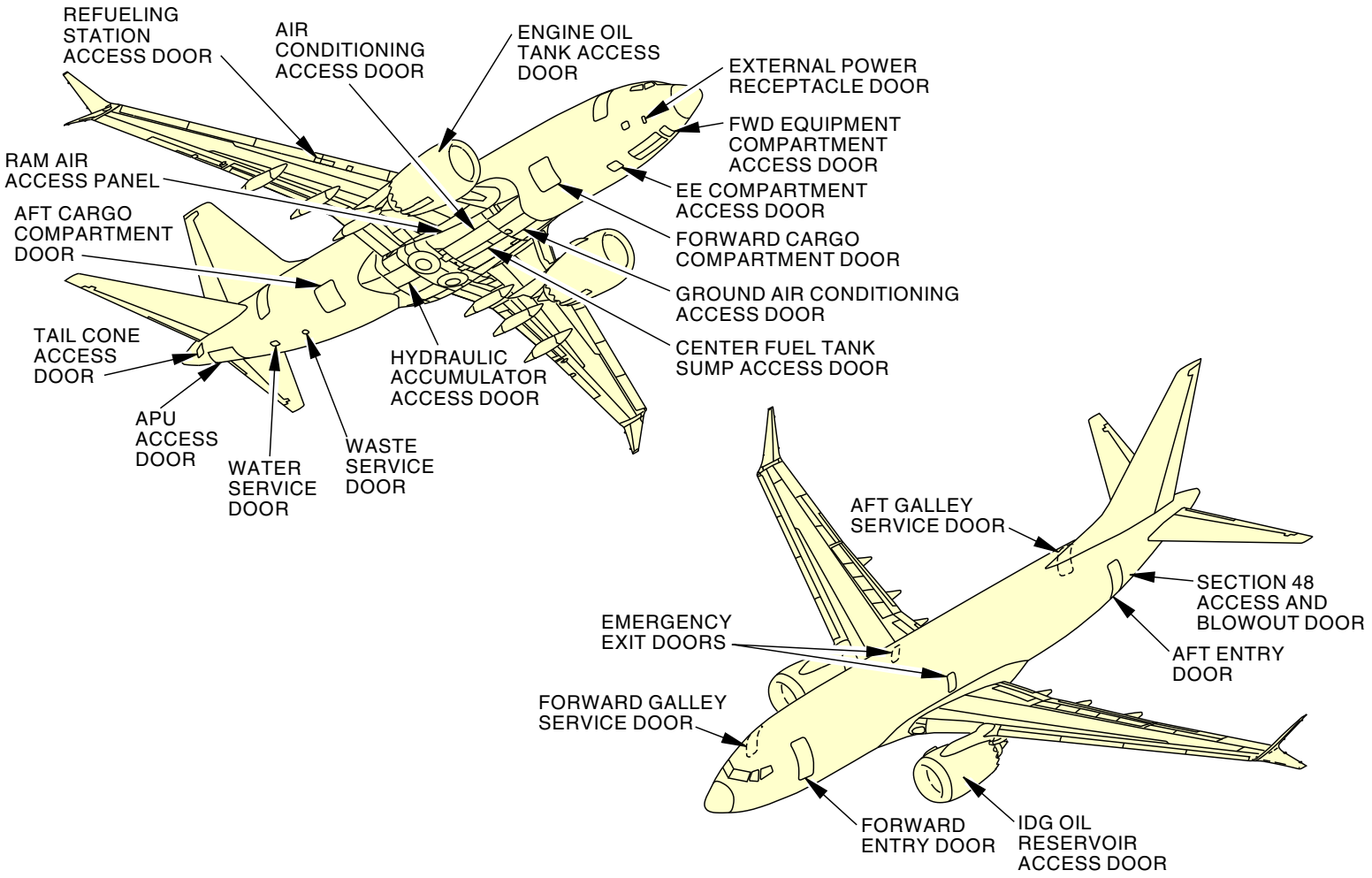
The galley service doors are on the right side of the airplane.

The emergency exit doors are above the wings on both sides of the airplane.

The cargo doors are on the right side of the airplane.

The miscellaneous access doors are near the systems they serve.

## DOORS - INTRODUCTION

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**DOORS - INTRODUCTION**

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# DOORS - STANDARD DOOR SEALS

## Purpose

The door seals do these things:

- Stop air leaks (pressure seals)
- Stop light transmission (light seals)
- Reduce noise transmission (acoustic seals)
- Reduce thermal transmission (thermal seals)
- Improve aerodynamic smoothness (aero seals).

## General Description

Door seals are flexible materials made of cloth and glass fiber reinforced silicon rubber. The seals are made in many forms to meet the requirements of their function. These are the common types of seal shapes:

- Bulb-type seals
- Diaphragm seals
- Flap-type seals (Blade seals)
- Multiform seals (combination of forms).

Door seals are held in place by one or more of these things:

- Adhesive compounds (fay surfaces and edges)
- Screws (with or without backing plates)
- Flanges and channels (plain or rod-and-socket).

## Location

Door seals are used where it is necessary to cover the spaces on or around a door or panel. These are the typical locations of door seals:

- Over door and panel hinges (diaphragm type)
- Around door and panel edges (flap, blade, and bulb types)
- Around door and panel frames (flap, blade, and bulb types).

## Functional Description

Door seals are flexible materials that fill the spaces between mechanical parts. They are resilient materials that work by elastic deformation.

## Training Information Point

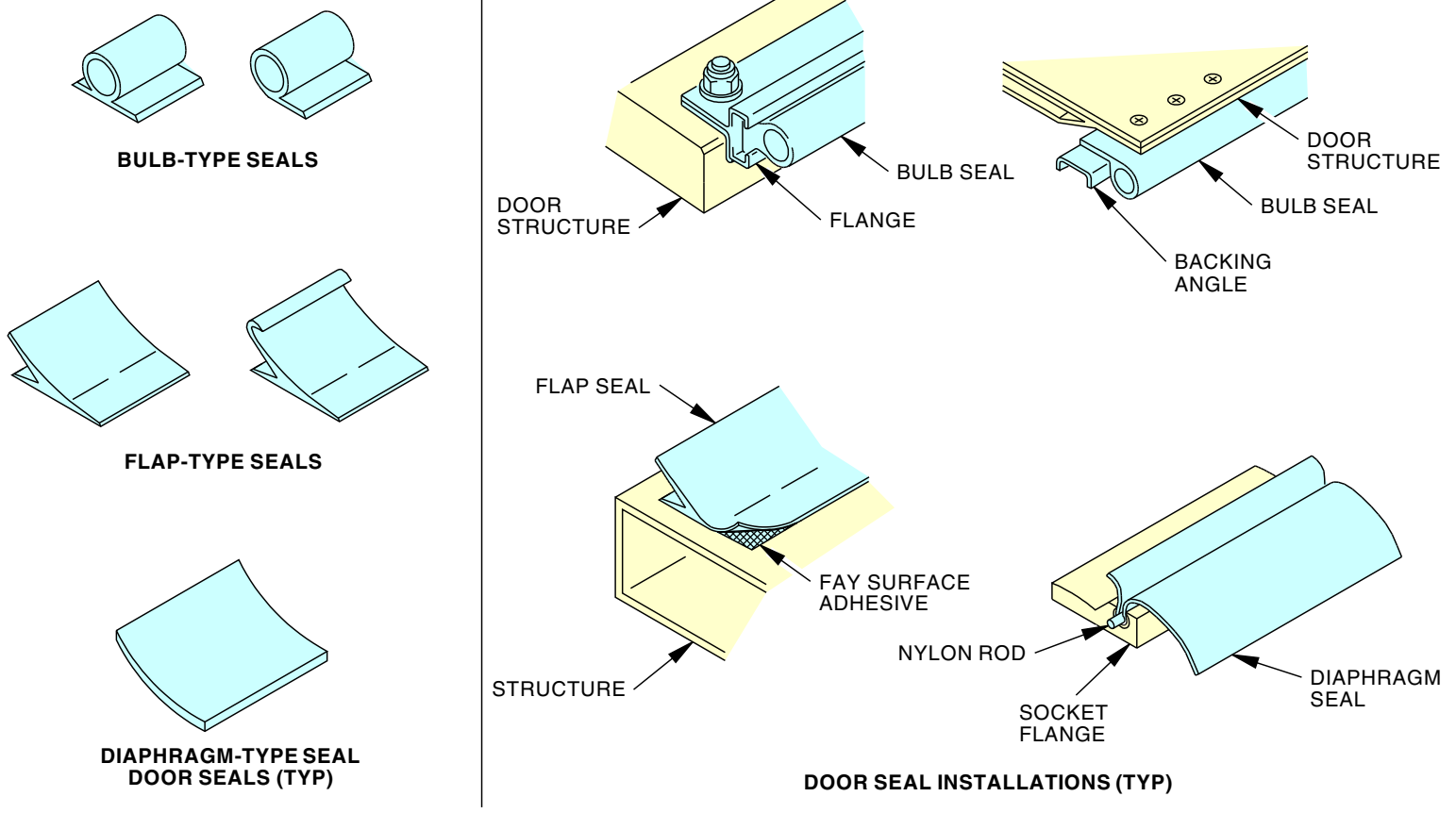
Liquid soap is a good, nonstaining lubricant for most seals. A lubricant can be useful for these reasons:

- To make installation easy
- To extend the service life of the seal.

A door that is noisy or makes a whistle sound may have a faulty seal.

You can repair a seal if there is not too much damage.

## DOORS - STANDARD DOOR SEALS

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DOORS - STANDARD DOOR SEALS

# DOORS - PASSENGER/CREW - INTRODUCTION

## Location

The forward entry door is on the left side of the upper, forward fuselage.

## General Description

The forward entry door is the largest passenger entry door on the airplane.

The door is a plug-type door. The door has these parts:

- Center door assembly
- Upper gate
- Lower gate.

A liner covers the interior surface of the door.

The center door assembly has hard points at the bottom for the emergency escape slide installation.

The center door assembly has a window.

## Door Control Mechanisms

You can open and close the door from the interior or exterior of the airplane. Operate the door manually. Unlatch the door with the control handle.

When you turn the handle in the OPEN direction, internal mechanisms do these things:

- Disengage the door roller latches
- Fold the door gates inward
- Tilt the door hinge edge inward to the cocked position.

Then push the door through the door frame until it is fully open. Use the assist handles for this operation.

A lock mechanism in the upper hinge locks the door in the fully open position.

To close the door, first release the hinge lock and then do the open operations in reverse order.

A guide pin on the door and a guide pin track on the door frame align the door in the door frame as it closes.

## Door Support

When the airplane is unpressurized, the hinges support the door.

When the airplane is pressurized, cabin pressure pushes the door slightly outboard. This causes these things to occur:

- Door seals compress
- Door stop pins contact frame stop fittings. This transmits the door pressure loads to the door frame structure
- Door latches are unloaded.

## Door Seals

The door has these seals:

- Edge seals (flap and bulb type)
- Gate hinge seals (diaphragm type).

## Door Drains

The door structure has internal drain paths. The door sections drain into the door frame threshold. The door threshold drains overboard through a bladder in the lower fuselage.

## Door Warning

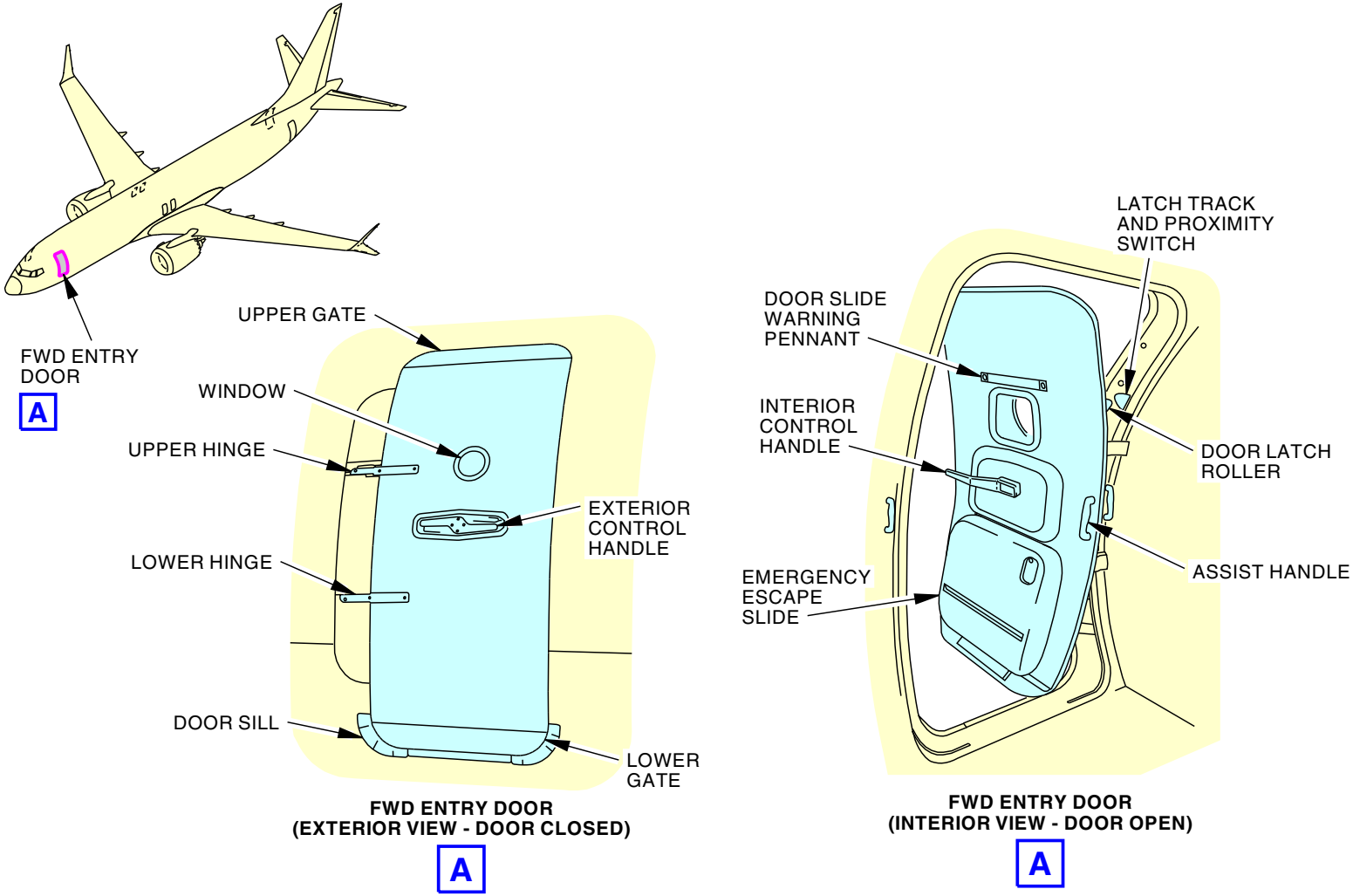
The forward entry door has an interface with the door warning system. There is a proximity switch assembly on the door frame adjacent to an upper latch track. The switch senses the position of the door latch roller. When the door is latched, it causes the warning light, on the P5 forward overhead panel, to go off.

An orange pennant is on the door liner above the window. Manually secure it across the window when the door escape slide is armed. This is a visual indication to someone outside the airplane that the door slide is armed.

## DOORS - PASSENGER/CREW - INTRODUCTION

The caution placard outside the door always calls the red color of the flag regardless of the color of the warning pennant.

## DOORS - PASSENGER/CREW - INTRODUCTION




**FWD ENTRY DOOR (EXTERIOR VIEW - DOOR CLOSED)**

A

**FWD ENTRY DOOR (INTERIOR VIEW - DOOR OPEN)**

A

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# DOORS - PASSENGER/CREW - LINING AND INSULATION

## Purpose

The forward entry door lining and insulation does these functions:

- Gives the door an attractive, easy to clean surface
- Reduces the heat transmission through the door
- Reduces the sound transmission through the door.

## General Description

The door lining and insulation is a one-piece composite panel.

The lining panel is a crush core laminate with a tedlar surface layer.

There is an insulation blanket on the outboard side of the lining panel. Hook and loop fastener tape hold the insulation to the lining panel.

These type of fasteners hold the lining and insulation panel to the door:

- Screws (panel sides)
- Nylon nuts (panel top and bottom edges).

There is a cutout and bezel in the upper area of the panel for the door window.

Cutouts in the lower area of the lining and insulation panel permit attachment of the emergency escape slide to door hard points.

## Training Information Point

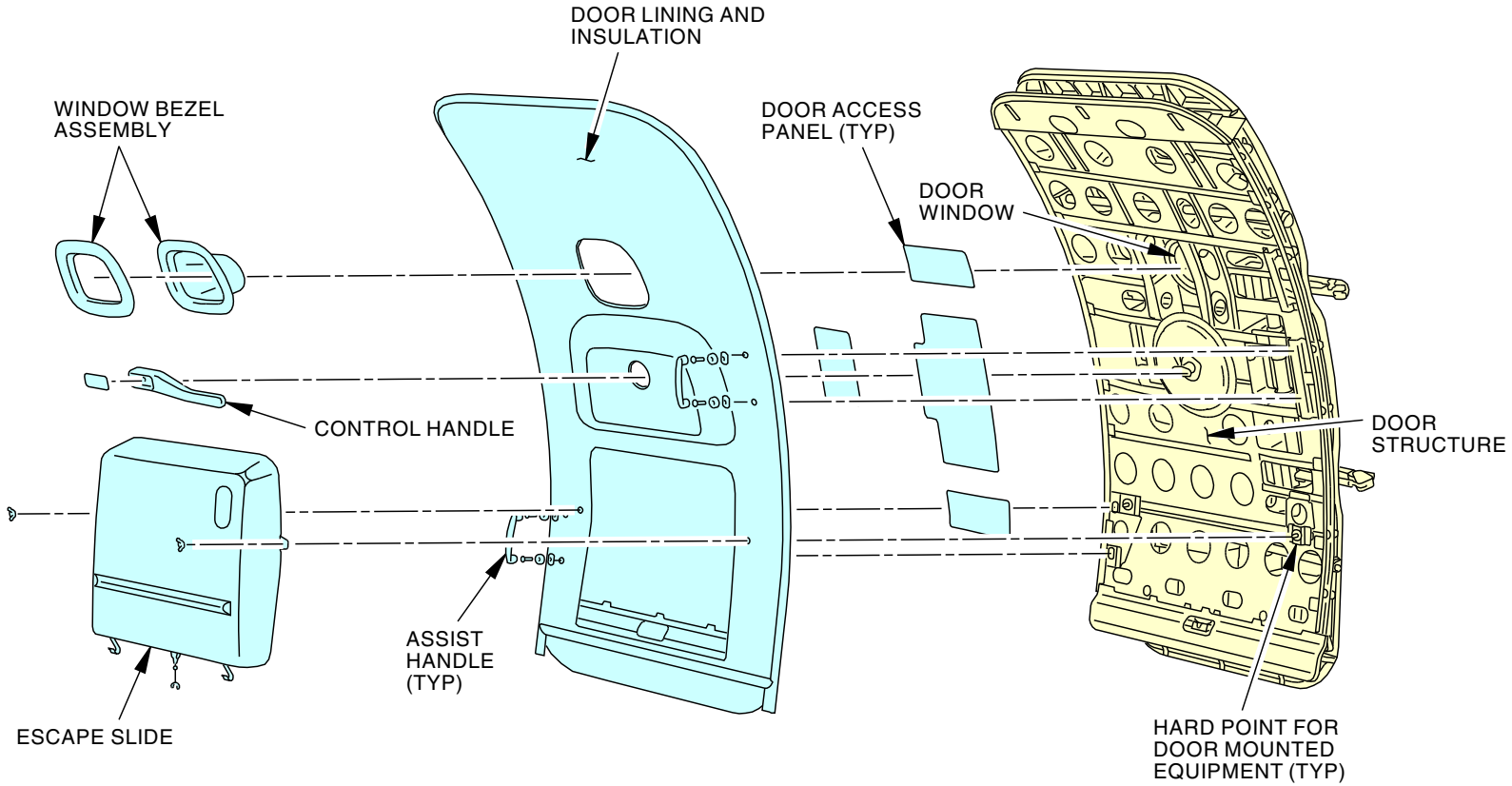
You must remove the door lining and insulation panel and the door access panels to inspect and lubricate the door interior components.

Before you can remove the lining and insulation panel, you must remove these door components:

- The emergency escape slide
- The door assist handles (2)
- The control handle.

It is not necessary to remove the lining and insulation panel to remove the door window.

## DOORS - PASSENGER/CREW - LINING AND INSULATION




**NOTE:**

FORWARD ENTRY DOOR SHOWN, OTHER DOORS THE SAME

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DOORS - PASSENGER/CREW - LINING AND INSULATION

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## DOORS - PASSENGER/CREW - HANDLE MECHANISM

### Purpose

The handle mechanism does these functions:

- Moves a closed and latched door to the cocked open position
- Moves a door in the cocked open position to the closed and latched position.

### Location

The handle mechanism is between the interior and exterior control handles.

### Physical Description

The handle mechanism has these major parts:

- Interior and exterior control handles
- Cam plate
- Door latching crank and cam roller rocker
- Door cocking crank and cam roller rocker
- Door latching crank and pushrods
- Door cocking crank and pushrod
- Door hinges and torque tube
- Upper and lower door gates, pushrods, and stoprods
- Associated shafts, bearings, retainers, springs, and fasteners.

### Functional Description

You operate the door handle mechanism manually.

The interior handle turns the cam plate.

The exterior handle fairs in a recess in the outer skin of the door. It is spring-loaded to this position. When faired, the door handle disengages the cam plate. When you pull the handle from the faired position, it engages the cam plate by a spline drive. When the handle spline drive is engaged, the handle can turn the cam plate.

The cam plate has two cam tracks. One track drives the door latching roller rocker. The other track drives the door cocking roller rocker.

When the cam plate turns in the open direction, it causes these things to occur:

- Door unlatches and its gates fold
- Door moves to the cocked open position.

The initial movement of the cam plate in the open direction causes the latching roller rocker to rise steeply to the high cam. This turns the roller rocker and the latching crank to which it is splined. The latching crank transmits this motion to the door latching mechanisms and door gates with pushrods. This unlatches the door and folds the door gates. As the cam continues to turn, it does not turn the latching roller rocker. This is because the latching roller rocker stays on the high cam.

The initial turn of the cam plate in the open direction does not turn the cocking roller rocker because it stays on the low cam. As the cam continues to turn, it causes the cocking roller rocker to rise to the high cam. This turns the roller rocker and the cocking crank to which it is splined. A cocking crank pushrod transmits this motion to the door torque tube. This causes the door to move to the cocked open position.

When the door is in the cocked open position, the cam is at the end of its travel. More force on the handle produces no more motion. From this point, you push the door manually through the door frame with the assist handles.

When the cam turns in the door closed direction, the linkages work the same, but in reverse sequence:

- Door moves from the cocked open position to the closed position
- Door gates unfold and the door latches engage.

The stop rods on the door gates are not part of the door gate drive mechanism. The stop rods support the gates against their pressure loads.

## Operational Displays

A proximity sensor for the door warning system is on an upper door latch track. When the door is not secure (not latched), the sensor causes the P5 FWD ENTRY door warning light to come on.

## Training Information Point

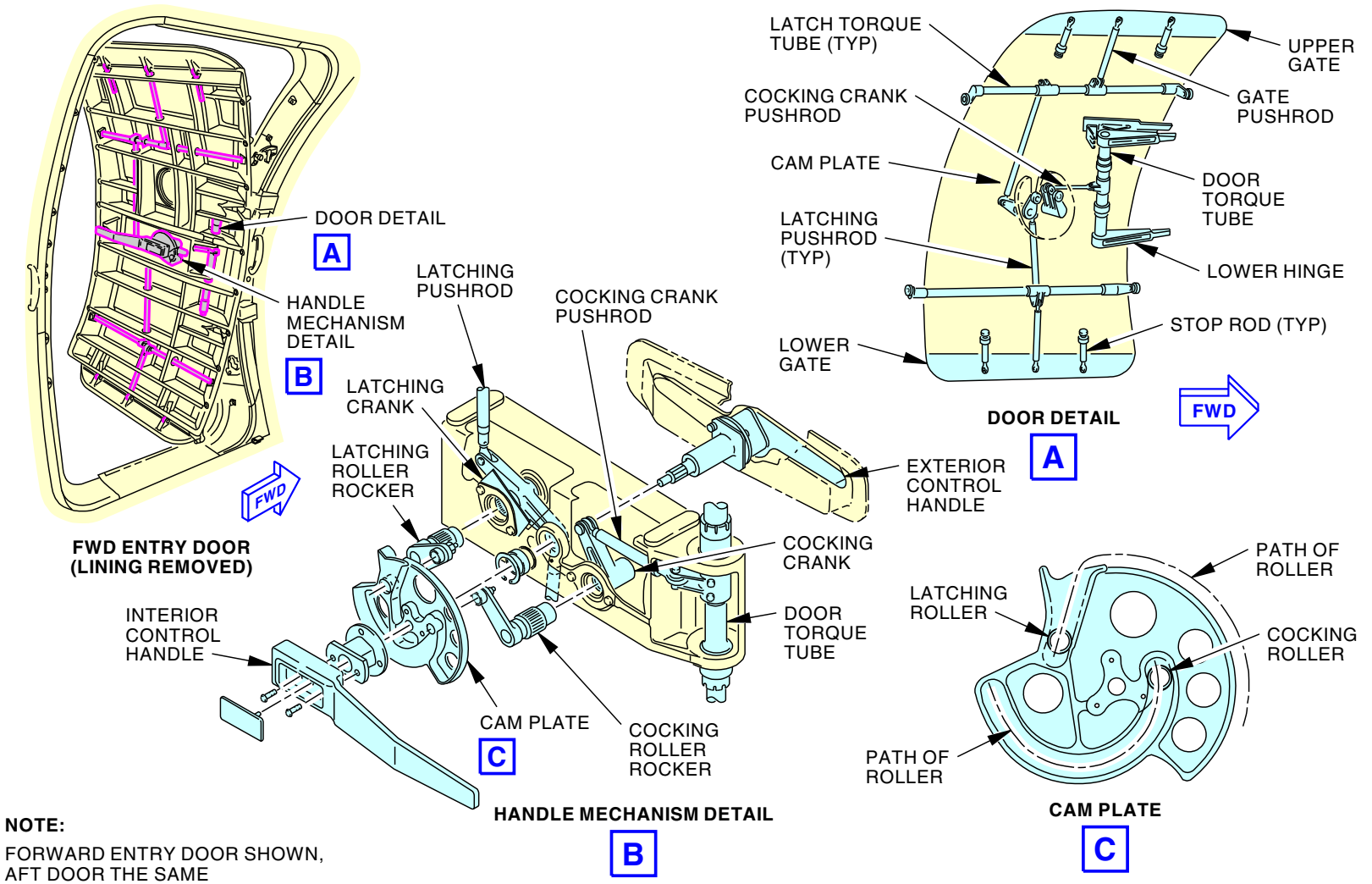
The force on the control handle to open and close the door is not large. If a large force is necessary, there is a fault with the door or the procedure.

If the door does not close and latch easily, there may be a clearance problem. Make sure the door-to-frame area is clear. An incorrectly stowed escape slide girt strap may be caught between the door and the frame.

If the airplane is pressurized, a properly rigged door will not unlatch. This is because the door gates must open against cabin pressure during door unlatch. Pressure on the door gates has a mechanical advantage and prevents this.

From the cocked position, push the door through the door frame with the assist handles. Do not use the control handle to push or pull the door through the door frame. This puts too much stress on the door hub.

## DOORS - PASSENGER/CREW - HANDLE MECHANISM




**NOTE:**

FORWARD ENTRY DOOR SHOWN, AFT DOOR THE SAME

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DOORS - PASSENGER/CREW - HANDLE MECHANISM

## DOORS - PASSENGER/CREW - GUIDE, LATCH, AND STOP FITTINGS

### Purpose

The door guide aligns the aft edge of the door when it swings closed.

When the airplane is unpressurized, the door latches hold the door closed.

When the airplane is pressurized, the door stop fittings transmit the pressure loads from the door to the door frame.

### Location

The door guide, latch, and stop fittings are on the door edges and the door frame.

### Door Guide - General Description

The door guide mechanism has these two parts:

- A guide pin on the aft door edge
- A guide track on the door aft frame

The guide track is a fairlead for the guide pin. It indexes the aft edge of the door when it closes. This aligns the door latches and stop pins with their door frame fittings.

### Door Latches - General Description

There are four door latch mechanisms. Each door latch mechanism has these two parts:

- A roller latch on the door
- A latch track on the door frame.

When you turn the door handle, the door roller latches turn by the latch torque tubes. When the door is closed and latched, the door latches mate with latch track fittings in the door frame.

The door latches are overcenter devices. They do these things:

- Compress the door seals
- Hold the door closed (on an unpressurized airplane)
- One latch operates the door warning sensor.

On a pressurized airplane, the pressure load causes the door to move outboard slightly. This movement does these things:

- Compresses the door seals
- Unloads the door latch fittings
- Seats the door stop fittings and puts the door pressure loads on them.

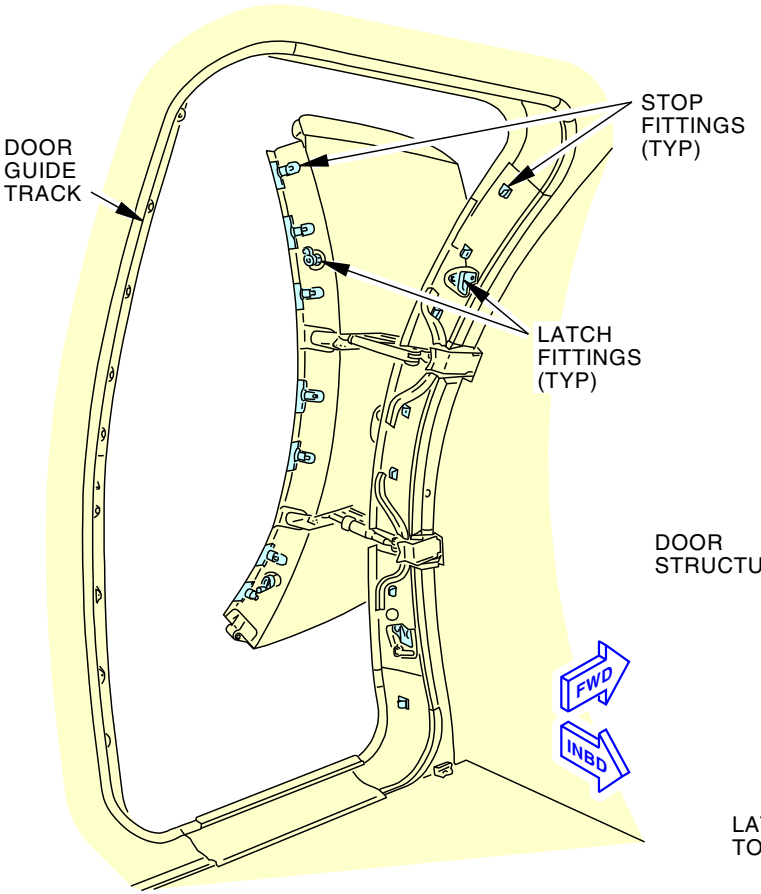
### Door Stops - General Description

Each door stop fitting has these parts:

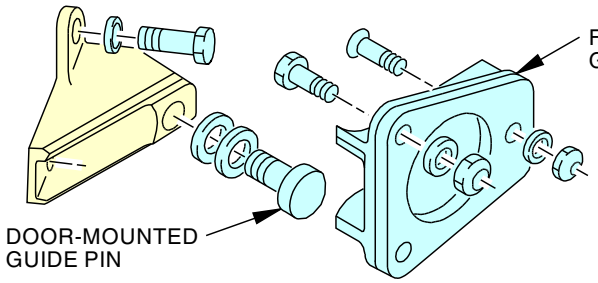
- An adjustable door-mounted pin with lockwire
- A buttressed frame-mounted pressure pad.

When the airplane is unpressurized, there is a small clearance between the door pins and frame pads. When the airplane is pressurized, the door moves outboard slightly. This causes the door pins to contact the frame pads. The pins transmit the pressure loads from the door to the door frame.

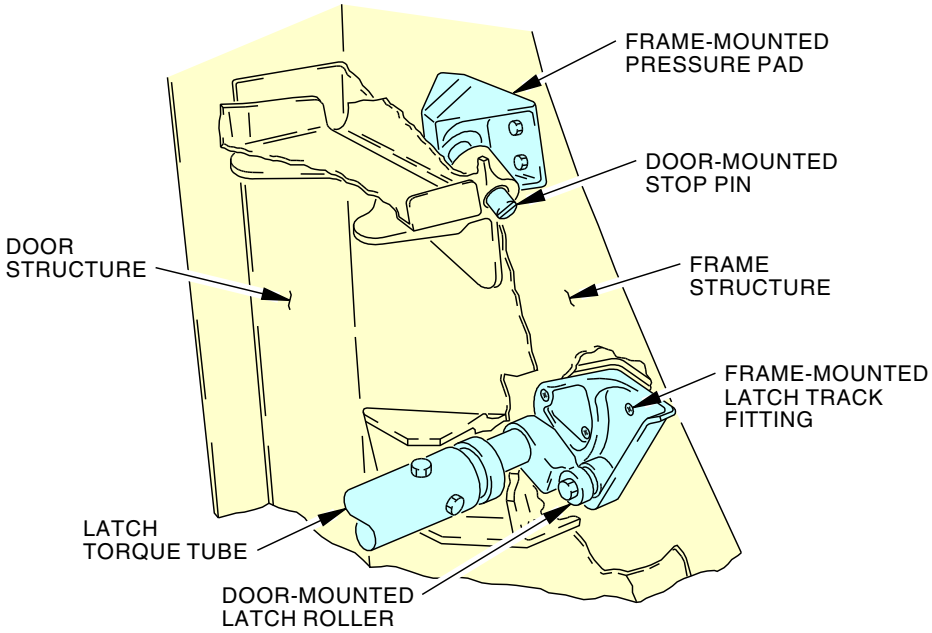
## DOORS - PASSENGER/CREW - GUIDE, LATCH, AND STOP FITTINGS




FWD ENTRY DOOR




GUIDE ASSEMBLY (TYP)




LATCH AND STOP ASSEMBLY DETAIL (TYP)

**NOTE:**

FORWARD ENTRY DOOR SHOWN, AFT ENTRY DOOR THE SAME

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DOORS - PASSENGER/CREW - GUIDE, LATCH, AND STOP FITTINGS

## DOORS - PASSENGER/CREW - FORWARD ENTRY DOOR TORQUE TUBES

### Purpose

The door torque tubes do these things:

- Give structural support to the door and hinges
- Give the door and hinges a pivotal axis
- Give the door cocking crank pushrod a structural reaction member (door torque tube only)
- Give the assist springs a structural reaction member (frame torque tube only).

### Location

The door system has these two torque tubes:

- Door torque tube in the door
- Frame torque tube in the door frame.

To get access to the door torque tube, remove the door liner and access panel.

To get access to the frame torque tube, remove the access panel on the interior of the airplane between the upper and lower hinges.

### Door Torque Tube - General Description

The door torque tube has several short sections held together by cross-bolt sleeves. The center section is held in the central door casting bearings by two castle nuts. The ends of the torque tube are cross-bolted to hinge pins. Hinge arm bearings hold the hinge pins.

### Frame Torque Tube - General Description

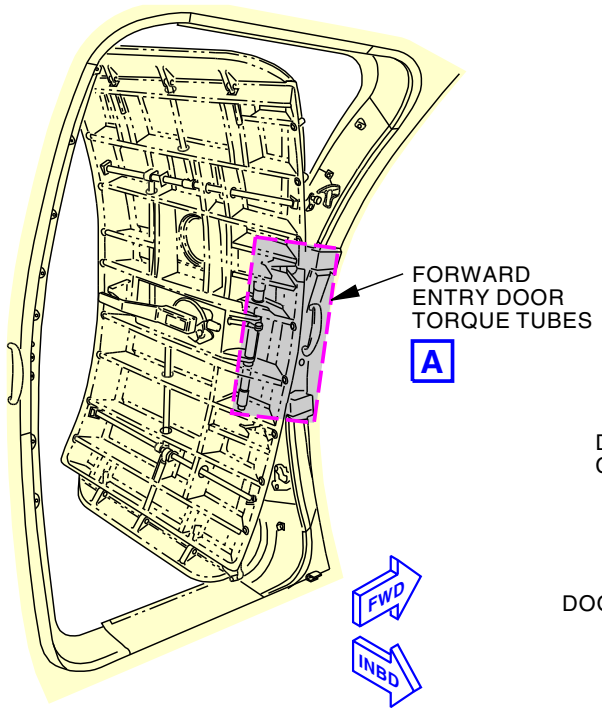
The frame torque tube has several short sections held together by cross-bolt sleeves. The center section of the tube is held in monoball frame bearings. The ends of the torque tube are bolted to oval spigots. The spigot ovals mate with the hinge arms.

Coil springs on the torque tubes wind up when the door moves to the fully open or closed position. This does two things:

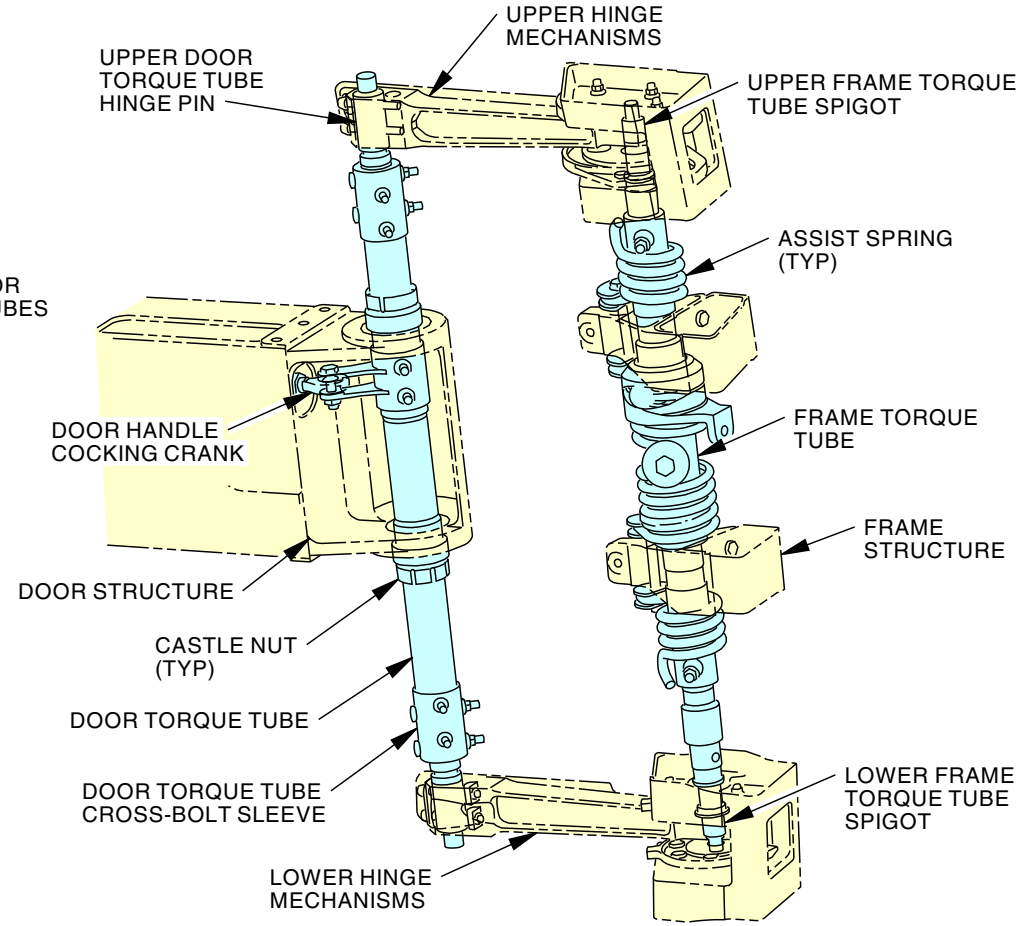
- Helps the operator begin to open or close the door
- Helps snub the door at the end of travel.

The spring load is neutral at an intermediate door position.

## DOORS - PASSENGER/CREW - FORWARD ENTRY DOOR TORQUE TUBES




**FORWARD ENTRY DOOR (LINING REMOVED)**




**FORWARD ENTRY DOOR TORQUE TUBES**

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DOORS - PASSENGER/CREW - FORWARD ENTRY DOOR TORQUE TUBES

## DOORS - PASSENGER/CREW - AFT ENTRY DOOR TORQUE TUBES

### Purpose

The door torque tubes provide these functions:

- Structural support to the door and hinges
- Pivital axis for door and hinges
- Structural reaction member for the door cocking crank pushrod (door torque tube only)

### Location

The door system has these two torque tubes:

- Door torque tube in the door
- Frame torque tube in the door frame.

To get access to the door torque tube, remove the door liner and access panel.

To get access to the frame torque tube, remove the access panel on the exterior of the airplane between the upper and lower hinges.

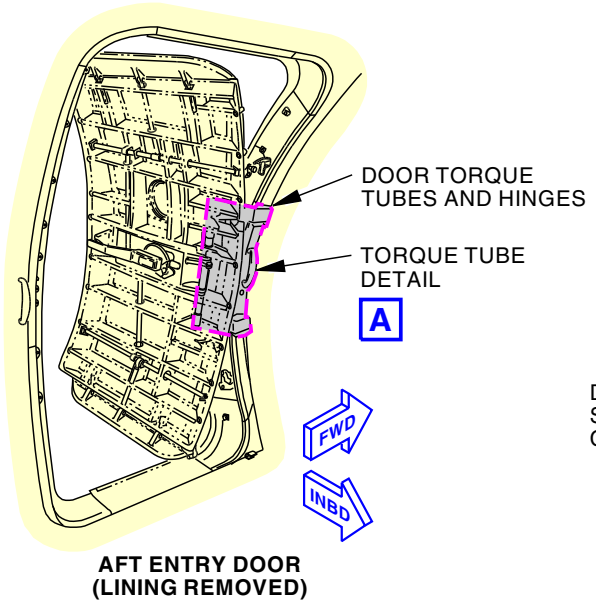
### Door Torque Tube - General Description

The door torque tube has several short sections held together by cross-bolt sleeves. The center section is held in the central door casting bearings by two castle nuts. The ends of the torque tube cross-bolt to hinge pins. Hinge arm bearings hold the hinge pins.

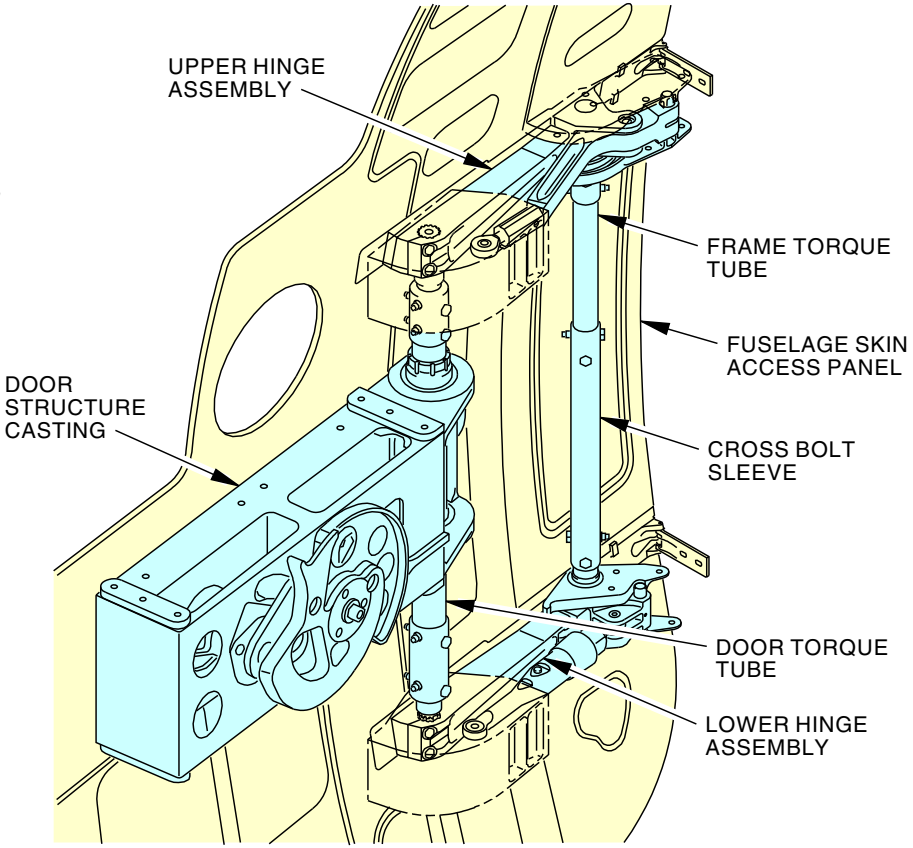
### Frame Torque Tube - General Description

The frame torque tube has several short sections held together by cross-bolt sleeves. The center section of the tube is held in monoball frame bearings. The ends of the torque tube bolt to oval spigots. The spigot ovals mate with the hinge arms.

## DOORS - PASSENGER/CREW - AFT ENTRY DOOR TORQUE TUBES




**AFT ENTRY DOOR (LINING REMOVED)**




**TORQUE TUBE DETAIL**

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DOORS - PASSENGER/CREW - AFT ENTRY DOOR TORQUE TUBES

## DOORS - PASSENGER/CREW - FORWARD ENTRY DOOR UPPER HINGE ASSEMBLY

### Purpose

The upper hinge assembly does these functions:

- Supports the weight of the door
- Controls the motion (swing and rotation) of the door as it opens and closes.

### Location

The upper hinge assembly is on the forward edge of the door.

### General Description

The upper hinge assembly has these parts:

- Hinge arm
- Guide arm assembly
- Hinge lock mechanism.

The upper hinge arm is a beam that holds and supports the door structure.

One end of the hinge arm mates with the door torque tube hinge. The other end of the hinge arm attaches to the frame torque tube spigot with an oval section and pinch bolt. The hinge arm turns with the door torque tube. The frame torque tube turns with the hinge arm.

The door rotates as it swings open or closed. A guide arm mechanism programs the door rotation. This is a pantagraph mechanism. A pin holds the spherical bearing of the guide arm to door structure. The other end is held by these devices:

- Roller that follows S-tracks in upper and lower guide plates
- Radius link that is connects the guide arm to the frame torque tube spigot.

Door motion toward open stops when the guide arm roller bottoms out in the guide plate S-tracks.

A latch mechanism in the guide arm locks the upper door hinge in the wide open position. When the door is fully open, a spring loaded pin goes into a detent in the upper guide plate. The pin is concentric to the roller.

To close the door, you must release the hinge from lock. Use one of these to release the hinge from lock:

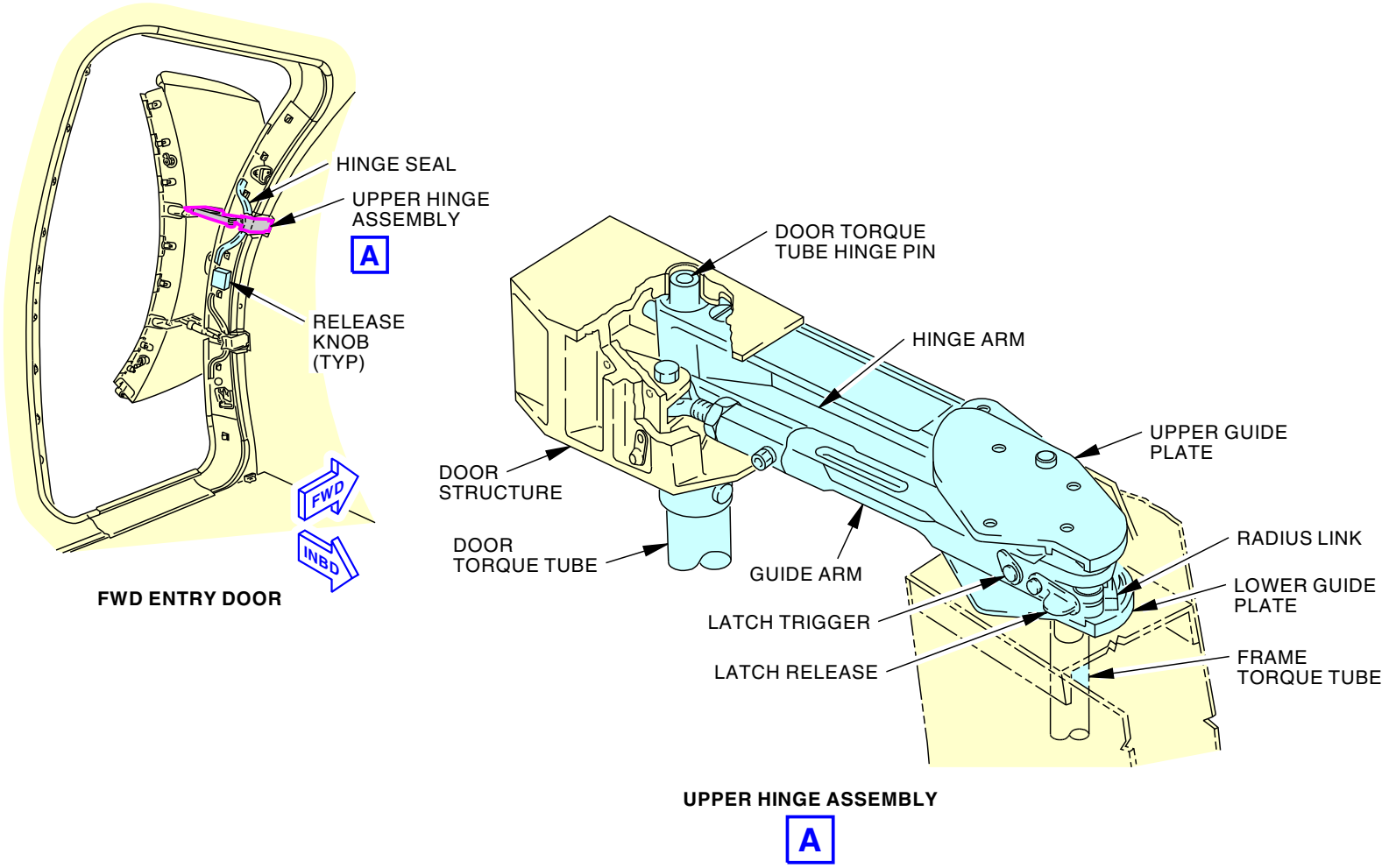
- Yellow lever on the upper hinge guide arm
- Yellow pushbutton on the upper hinge guide arm
- Yellow release knob on the door frame between the upper and lower hinges.

Push the lever or pushbutton, or lift on the release knob to release the hinge from lock. A latch trigger on the guide arm resets the lock mechanism.

Spring-loaded retainers support pressure seals around the hinge assembly.

A cover plate on the outside of the upper hinge assembly covers the gap around the hinge cutouts. This cover is an aerodynamic seal. It decreases noise and drag.

## DOORS - PASSENGER/CREW - FORWARD ENTRY DOOR UPPER HINGE ASSEMBLY

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DOORS - PASSENGER/CREW - FORWARD ENTRY DOOR UPPER HINGE ASSEMBLY

## DOORS - PASSENGER/CREW - AFT ENTRY DOOR UPPER HINGE ASSEMBLY

### Purpose

The upper hinge assembly does these functions:

- Supports the weight of the door
- Controls the motion (swing and rotation) of the door as it opens and closes.

### Location

The upper hinge assembly is on the forward edge of the door.

### General Description

The upper hinge assembly has these parts:

- Hinge arm
- Guide arm assembly
- Hinge lock mechanism.

The upper hinge arm is a beam that holds the weight of the door structure. One end of the hinge arm is splined to the door torque tube hinge pin. The other end is pinned to the hinge link. The hinge link is splined to the frame torque tube. The door torque tube turns with the hinge arm. The frame torque tube turns with the hinge link.

A guide arm mechanism programs the movement of the door as it swings open or closed. A pin holds the rod end bearing of the guide arm to an attach fitting in the door hinge support structure. The other end of the guide arm is held by dual roller bushings that follow tracks in upper and lower guide plates. The guide arm pivots around a pin that connects the guide arm to the hinge link on the frame torque tube.

Door motion toward open stops when the guide arm roller bottoms out in the guide plate S-tracks.

A latch mechanism in the guide arm locks the upper door hinge in the wide open position. When the door is fully open, a spring loaded pin rises into a detent in the upper guide plate. The pin is concentric to the roller.

To close the door, you must release the hinge from lock. One of these devices is used to release the hinge from lock:

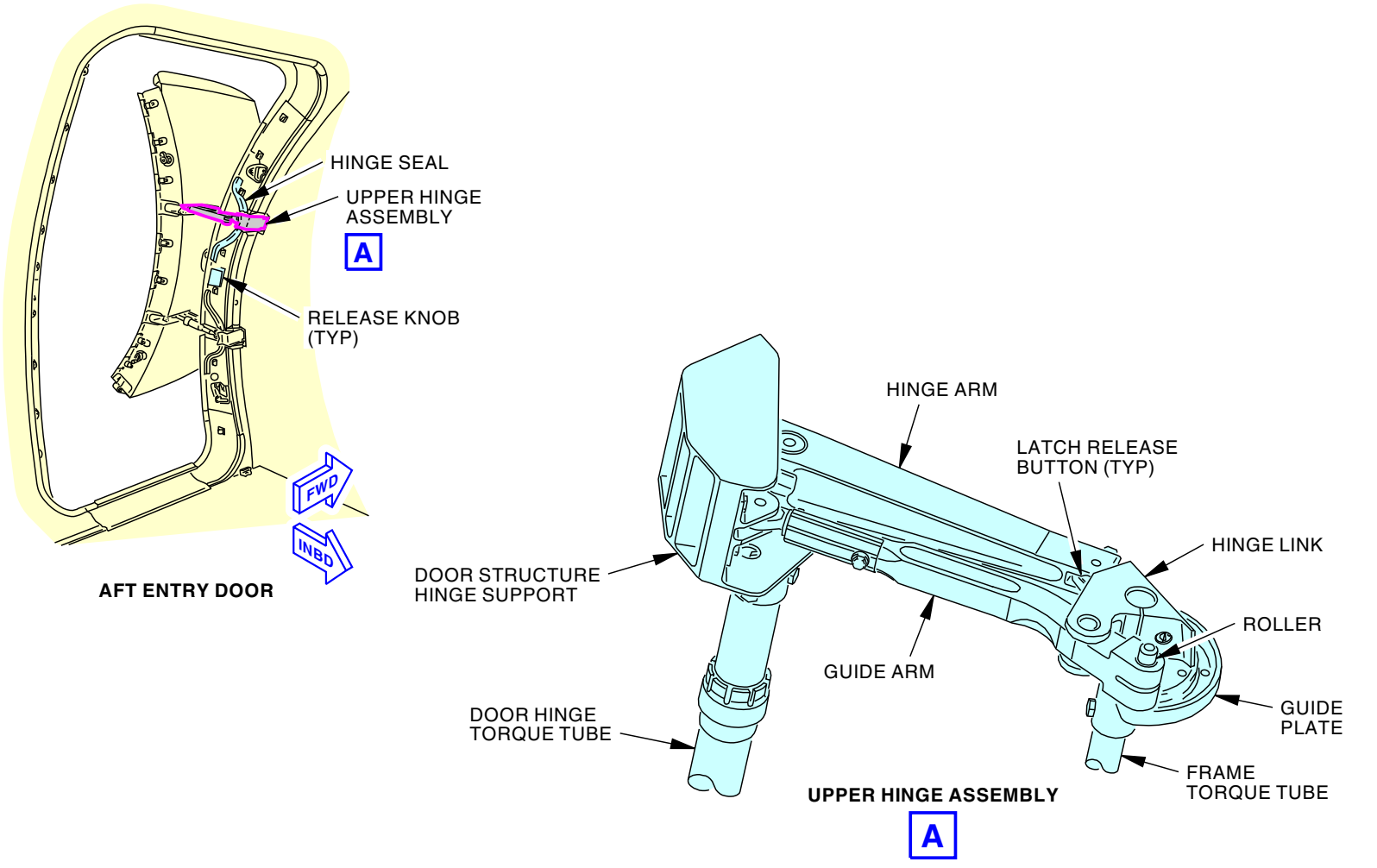
- A yellow lever on the upper hinge guide arm
- A yellow pushbutton on the upper hinge guide arm
- A yellow release knob on the door frame between the upper and lower hinges.

Push the lever or pushbutton, or lift on the release knob to release the hinge from lock. A latch trigger on the guide arm resets the lock mechanism.

Spring-loaded retainers support pressure seals around the hinge assembly.

A flap on the outside of the upper hinge assembly covers the gap around the hinge cutouts. This flap is an aerodynamic seal. It reduces noise and drag. A spring-loaded hinge attaches the flap to a body frame.

## DOORS - PASSENGER/CREW - AFT ENTRY DOOR UPPER HINGE ASSEMBLY




DOORS - PASSENGER/CREW - AFT ENTRY DOOR UPPER HINGE ASSEMBLY

## DOORS - PASSENGER/CREW - LOWER HINGE ASSEMBLY

### Purpose

The lower door hinge assembly does these functions:

- Slows (snubs) and stops the door at the ends of the swing
- Structurally holds the door.

### Location

The lower hinge assembly is on the forward edge of the door.

### General Description

The lower hinge assembly has these parts:

- Hinge arm
- Door snubber and stop assembly.

The lower hinge arm is a beam that holds the door structure. One end of the hinge arm mates with the door torque tube hinge pin in a bearing. The other end of the hinge arm attaches to the frame torque tube spigot with an oval section and pinch bolt. The door torque tube turns freely about the hinge arm. The frame torque tube turns with the hinge arm.

A door snubber hydraulically slows (snubs) the door at the ends of the swing.

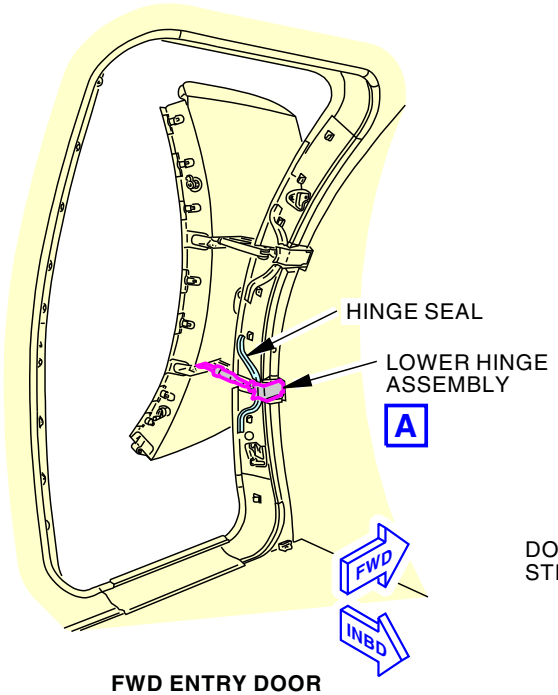
The snubber is an oil filled, telescopic, orifice-type metering device. It limits the rate of motion at the full extend and full retract positions. As the door opens, it goes from fully retracted to fully extended. The snubber is held by pins in its spherical bearings. One pin holds the snubber to door structure. A second pin holds the other snubber bearing to the frame torque tube radius link.

The bottom frame torque tube spigot pins the radius link to the frame torque tube. The radius link has a stop pin. Stop plates limit the range of motion of the stop pin. At the door or fully open positions, the stop pins contact the stop plates. This moves the snubber, and damps door motion.

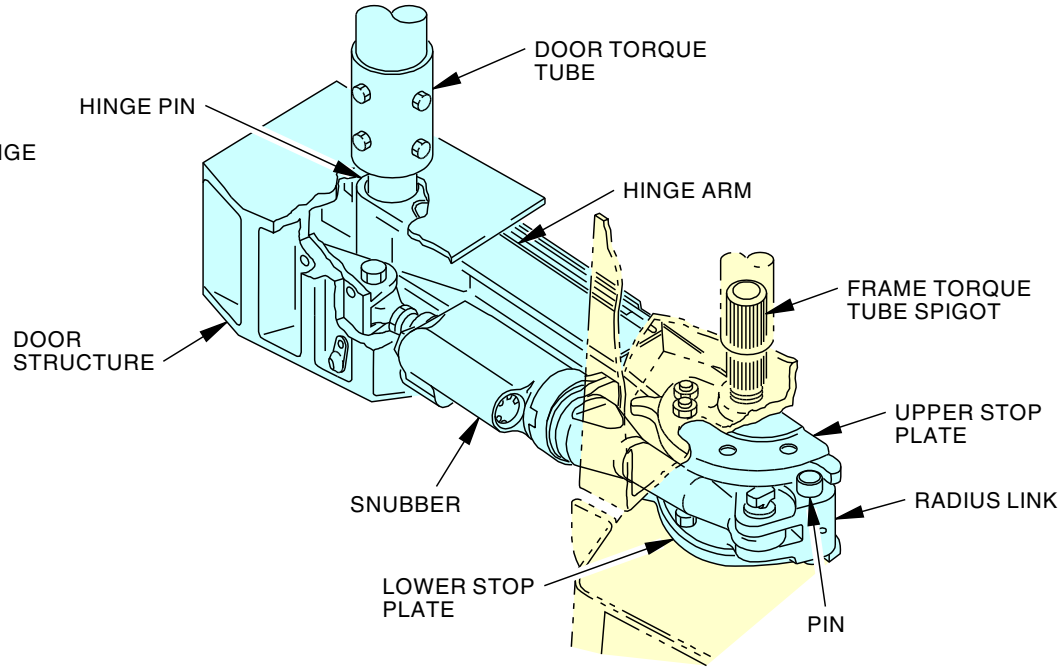
Spring-loaded retainers on the door frame support pressure seals around the hinge assembly.

A cover plate on the outside of the hinge assembly covers the gap around the hinge cutouts. This cover is an aerodynamic seal. It reduces noise and drag. A spring-loaded hinge attaches the cover to the hinge arm.

## DOORS - PASSENGER/CREW - LOWER HINGE ASSEMBLY




**FWD ENTRY DOOR**




**LOWER HINGE ASSEMBLY**

A

**NOTE:**

FORWARD ENTRY DOOR SHOWN,
AFT ENTRY DOOR THE SAME

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DOORS - PASSENGER/CREW - LOWER HINGE ASSEMBLY

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## DOORS - PASSENGER/CREW - INTERIOR OPERATION

### General

You open and close the door manually. Use these steps to open the door from the airplane interior:

- Move the door to the cocked open position with the control handle
- Push the door to the fully open position with the door assist handles.

Use these steps to close the door:

- Release the upper hinge lock latch
- Pull the door to the closed position with the door assist handles
- Fully close and latch the door with the control handle.

### Open the Door

An escape slide is on the inside lower door. If the slide girt bar is in the armed position, the slide will deploy automatically as the door opens. Make sure the slide girt bar is in the stowed position if you do not want the slide to deploy.

The door swings out of the door frame when it opens. Make sure the area outside of the door is clear.

Turn the interior control handle counterclockwise. Initial movement of the handle causes the door interior mechanisms to do these things:

- Door latch roller mechanisms disengage from their door frame latch track fittings
- Door warning sensor target moves away from the sensor. This causes the FWD ENTRY or AFT ENTRY door warning light
- Dpper and lower door gates fold inward. This makes the door smaller, breaks the door seal, and vents any cabin differential pressure.

As you continue to turn the handle to the end of the stroke, (170 deg) the door mechanisms to do these things:

- Cocking mechanism swings the door hinge arms (and the door) inward
- Upper hinge guide arm controls the door rotation as it swings
- Door goes to the cocked open position.

More force on the door control handle does not cause any more door motion. The control handle has gone through the full movement. To complete the door opening operation, push the door through the door frame with the door assist handles.

As the door opens, wind may push the door. This can pull the operator through the door frame. To prevent this, keep one hand on an interior assist handle.

As you push the door through the door frame, the door turns. At the fully open position, the door is parallel to the airplane fuselage. The control handle turns 45 degrees.

At the fully open position, these things happen:

- Snubber and stop mechanisms gently stop the door at the fully open position.
- Latch mechanism in the upper hinge engages. This locks the hinge (and the door) in the fully open position.

### Close the Door

To close the door, first release the hinge lock. The release mechanism is yellow. Operate the latch release mechanism to unlock the hinge. This lets the door swing back into the door frame.

Hold an internal assist handle to keep your balance. Pull on the door assist handle to bring the door into the frame until it is in the cocked position.

Turn the control handle clockwise. Initial movement of the handle causes the internal door mechanisms to seat the door into the door frame.

Further movement of the control handle does these things:

- Door latch roller mechanisms engage the door latch track fittings
- Door latches push the door warning sensor target toward the sensor. This causes the P5 panel FWD ENTRY or AFT ENTRY door warning light go off
- Door seals compress between the door and the door frame

- Upper and lower door gates unfold outward. This compresses the gate seals, and returns the door to a structural plug configuration.

**Training Information Point**

You can operate the forward entry door in winds up to 40 knots. You can let the door stay latched open in winds up to 65 knots.

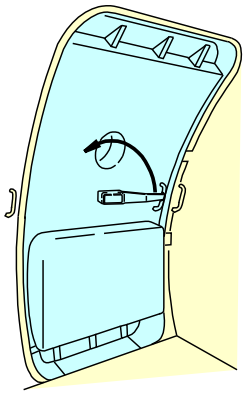
**WARNING** DO NOT OPERATE THE DOOR IN JET BLAST OR HIGH WINDS. DAMAGE TO EQUIPMENT OR INJURY TO PERSONS CAN RESULT.

The force on the control handle to open and close the door is not large. If a large force is necessary, there is a fault with the door or the procedure.

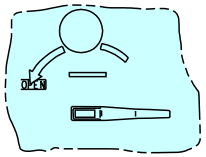
If the door does not close and latch easily, there may be a clearance problem. Make sure the door-to-frame area is clear. An incorrectly stowed escape slide girt strap may be caught between the door and the frame.

If the airplane is pressurized, a properly rigged door will not unlatch. This is because the door gates must open against cabin pressure during door unlatch. Pressure on the door gates has a mechanical advantage and prevents this.

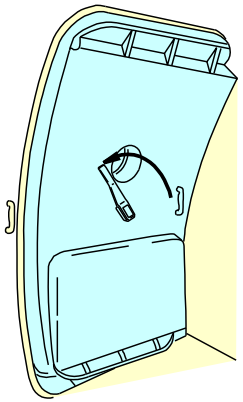
## DOORS - PASSENGER/CREW - INTERIOR OPERATION



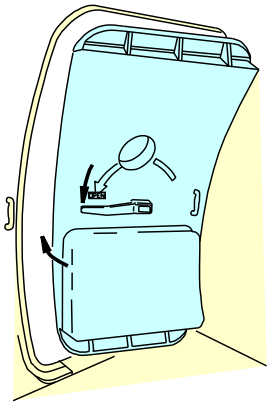
STOW GIRT BAR AND MAKE SURE OUTSIDE IS CLEAR



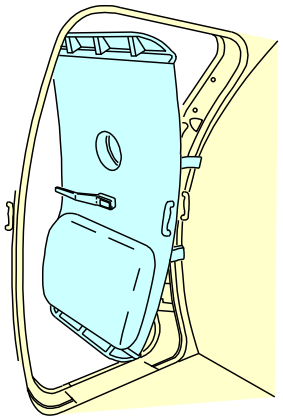
OPERATION PLACARD (TYP)



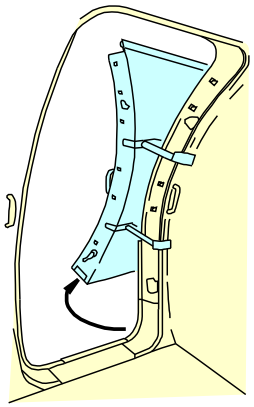
TURN CONTROL HANDLE



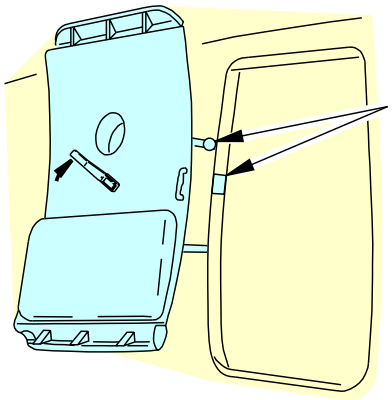
DOOR IN COCKED POSITION



PUSH DOOR OPEN (USE ASSIST HANDLES)



PUSH DOOR TO FULLY OPEN POSITION




DOOR IN OPEN POSITION

**NOTE:**

FORWARD DOOR SHOWN, AFT DOOR THE SAME

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DOORS - PASSENGER/CREW - INTERIOR OPERATION

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## DOORS - PASSENGER/CREW - EXTERIOR OPERATION

### General

Open and close the door manually. Use these steps to open the door from the airplane exterior:

- Move the door to the cocked open position with the control handle
- Pull the door to the fully open position.

Use these steps to close the door:

- Release the upper hinge lock latch
- Pull the door to the cocked position
- Fully close and latch the door with the control handle.

### Opening the Door - Exterior Operation

An escape slide is on the inside lower door. If the slide girt bar is in the armed position, the slide will deploy automatically as the door opens. Look to see if there is a door slide warning pennant (orange) in the door window. The pennant is across the window when the slide is armed.

The caution placard outside the door always calls the red color of the flag regardless of the color of the warning pennant.

The door swings out of the door frame when it opens. Make sure that the area outside of the door is clear.

Pull the exterior door control handle from the recess position to engage the door drive mechanisms. Turn the handle 180 degrees in the clockwise direction.

Initial movement of the handle causes the door interior mechanisms to do these things:

- Door latch roller mechanisms disengage from their door frame latch track fittings
- Door warning sensor target moves away from the sensor. This causes the FWD ENTRY or AFT ENTRY door warning light, on the P5 forward overhead panel, to come on
- Upper and lower door gates fold inward. This makes the door smaller, breaks the door seal, and vents any cabin differential pressure.

As the handle moves through the full motion (180 degrees), the door mechanisms do these things:

- Cocking mechanism moves the door hinge arms (and the door) inward
- Upper hinge guide arm controls the door rotation as it swings
- Door goes to the cocked open position.

Any more effort on the door control handle does not cause more door motion. The door control handle has gone through the full motion. Release the control handle and manually put the exterior handle in the fully stowed position into its recess in the door.

To complete the door open operation, hold the aft edge of the door, and pull it open.

As the door opens, winds may push it. This can push the operator off balance. Keep a strong, secure stance to prevent this.

As you pull the door open, the door turns. This puts the door parallel to the airplane fuselage when the door is fully open.

At the fully open position, these things happen:

- Snubber and stop mechanisms gently stop the door at the fully open position.
- Latch mechanism in the upper hinge engages. This locks the hinge (and the door) in the fully open position.

### Closing the Door

Before you close the door, examine the escape slide. The escape slide girt strap and bar must be properly stowed. An incorrectly folded strap or improperly stowed bar interferes with the door to threshold clearance. This can prevent door sealing and latching and can damage components.

To close the door, first release the hinge lock. The release mechanism is yellow. Operate the latch release mechanism to unlock the hinge. This lets the door swing back into the door frame.

Pull the door to the cocked position.

Pull the exterior control handle out of the recess, and turn it slightly until it engages the door drive mechanisms. Then turn the door control handle counterclockwise 180 degrees.

Initial movement of the handle causes internal door mechanisms to seat the door into the door frame.

As the handle continues to turn, the door mechanisms do these things:

- Door latch roller mechanisms engage the door latch track fittings
- Door latches push the door warning sensor target toward the sensor. This causes the FWD ENTRY or AFT ENTRY door warning light, on the P5 forward overhead panel, go off
- Door seals compress between the door and the door frame
- Upper and lower door gates unfold outward. This compresses the gate seals, and returns the door to a structural plug configuration.

When the control handle has gone through its full motion, manually release it and allow it to return to the recess by spring force.

**Training Information Point**

You can operate the forward entry door in winds up to 40 knots. You can let the door stay latched open in winds up to 65 knots.

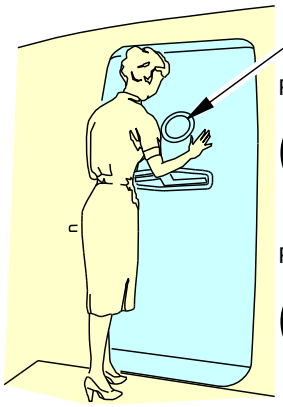
**WARNING** DO NOT OPERATE THE DOOR IN THE JET BLAST OR HIGH WINDS. DAMAGE TO EQUIPMENT OR INJURY TO PERSONS CAN OCCUR.

The force on the control handle to open and close the door is not large. If a large force is necessary, there is a fault with the door or the procedure.

If the door does not close and latch easily, there may be a clearance problem. Make sure that the door-to-frame area is clear. An incorrectly stowed escape slide girt strap may be caught between the door and the frame.

If the airplane is pressurized, a properly rigged door will not unlatch. This is because the door gates must open against cabin pressure during door unlatch. Pressure on the door gates has a mechanical advantage and prevents this.

## DOORS - PASSENGER/CREW - EXTERIOR OPERATION



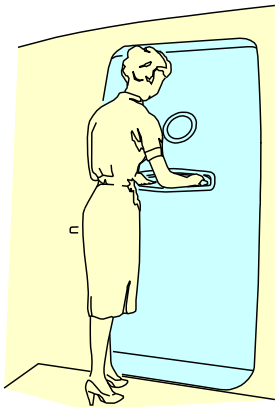

PENNANT NOT ACROSS WINDOW:

- SLIDE IS NOT ARMED
- IT IS SAFE TO OPEN THE DOOR

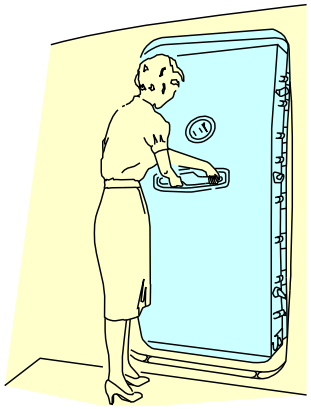
PENNANT ACROSS WINDOW:

- SLIDE IS ARMED
- IF YOU OPEN THE DOOR, THE SLIDE WILL DEPLOY

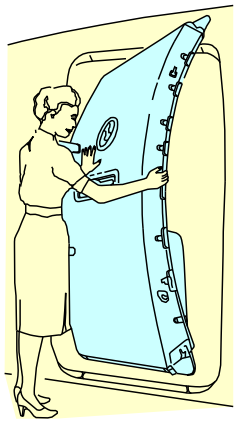
**LOOK FOR DOOR SLIDE WARNING PENNANT**



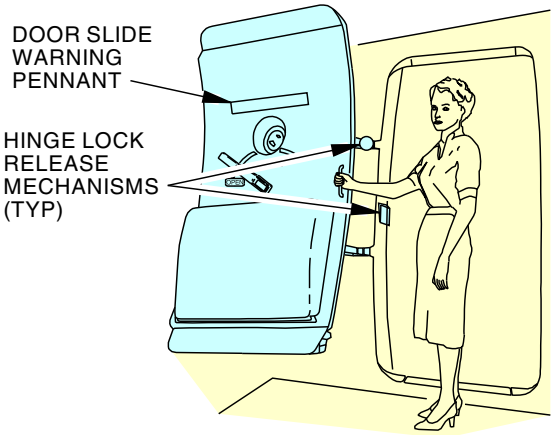
**PULL DOOR HANDLE FROM ITS RECESS**



**TURN HANDLE**



**PULL DOOR OPEN**




**DOOR FULLY OPEN AND UPPER HINGE LOCKED**

**NOTE:**

FORWARD ENTRY DOOR SHOWN, AFT DOOR THE SAME

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## DOORS - EMERGENCY EXIT DOOR - INTRODUCTION

### Purpose

Emergency exit doors supply additional exits for the passengers if there is an emergency.

### Location

The emergency exit doors are above the wings.

### General Description

There are four emergency exit doors.

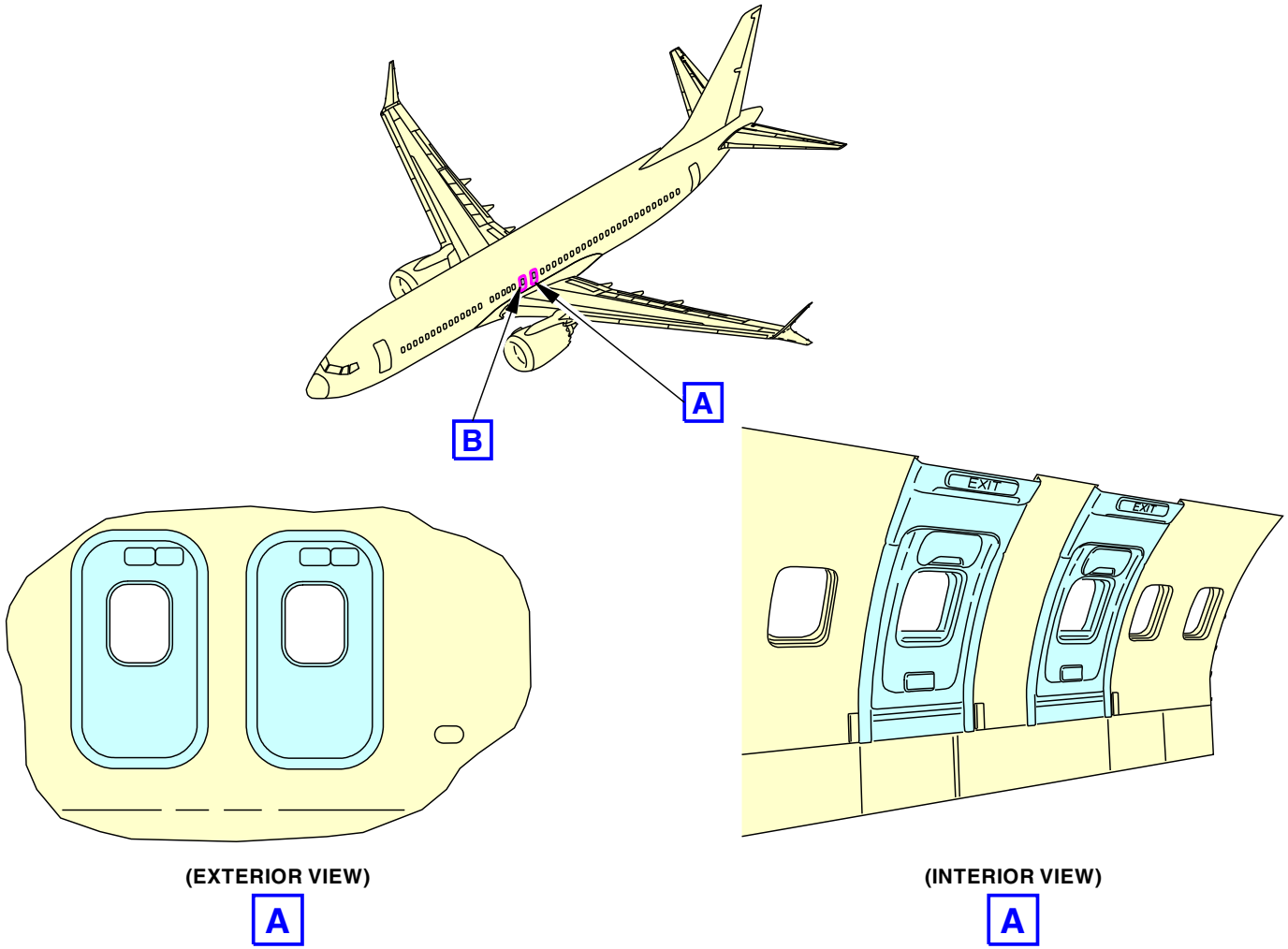
They have the same construction features, but are adjusted separately to fit their fuselage frames. The doors have a window with an internal shade.

An EXIT light attaches to the door cutout lining above each door. A wash light fixture below the sign illuminates the hatch area.

You can open the emergency exit door from inside or outside the airplane. The emergency exit doors operate with a spring loaded vent panel at the top of the hatch.

The emergency exit doors connect with the door warning system. Each hatch frame has a switch on two of its latch tracks. A latch roller operates the switch. When the hatch is locked, the P5 panel OVERWING EXIT warning light goes off.

## DOORS - EMERGENCY EXIT DOOR - INTRODUCTION




(EXTERIOR VIEW)

A

(INTERIOR VIEW)

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DOORS - EMERGENCY EXIT DOOR - INTRODUCTION

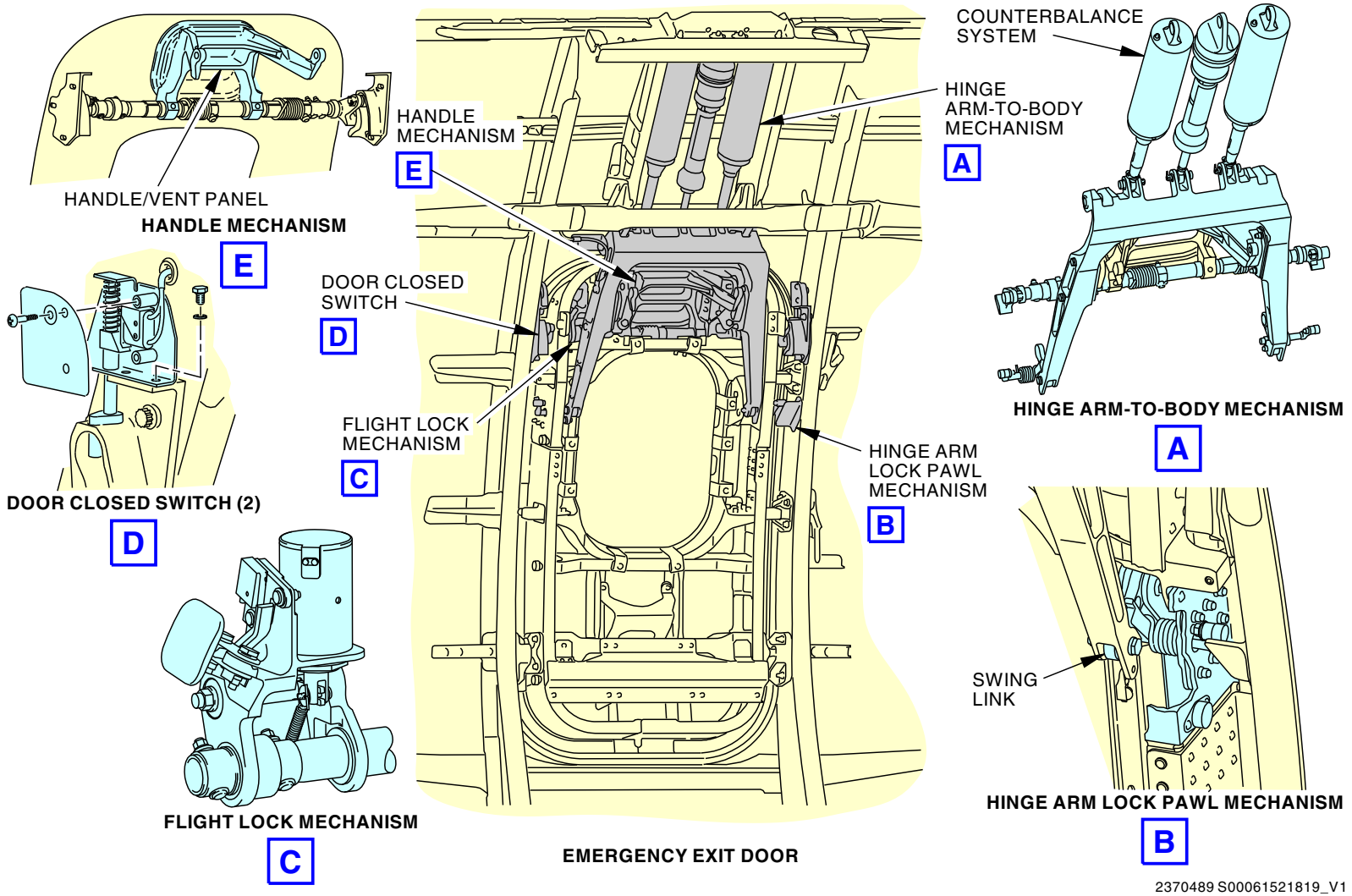
## DOORS - EMERGENCY EXIT DOOR - COMPONENT LOCATION

### General

These are the emergency exit door components:

- Handle mechanism
- Hinge arm lock pawl mechanism
- Hinge arm-to-body mechanism
- Counterbalance mechanism
- Flight lock mechanism
- Two door closed switches.

## DOORS - EMERGENCY EXIT DOOR - COMPONENT LOCATION

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## DOORS - EMERGENCY EXIT DOOR - COMPONENT LOCATION

## DOORS - EMERGENCY EXIT DOOR - HANDLE MECHANISM

### Purpose

The handle mechanism holds the door closed when the airplane is not pressurized and opens the door when necessary.

### General Description

The handle mechanism consist of these components:

- Pressure vent panel
- A handle
- Locking mechanism.

### Pressure Vent Panel/Handle

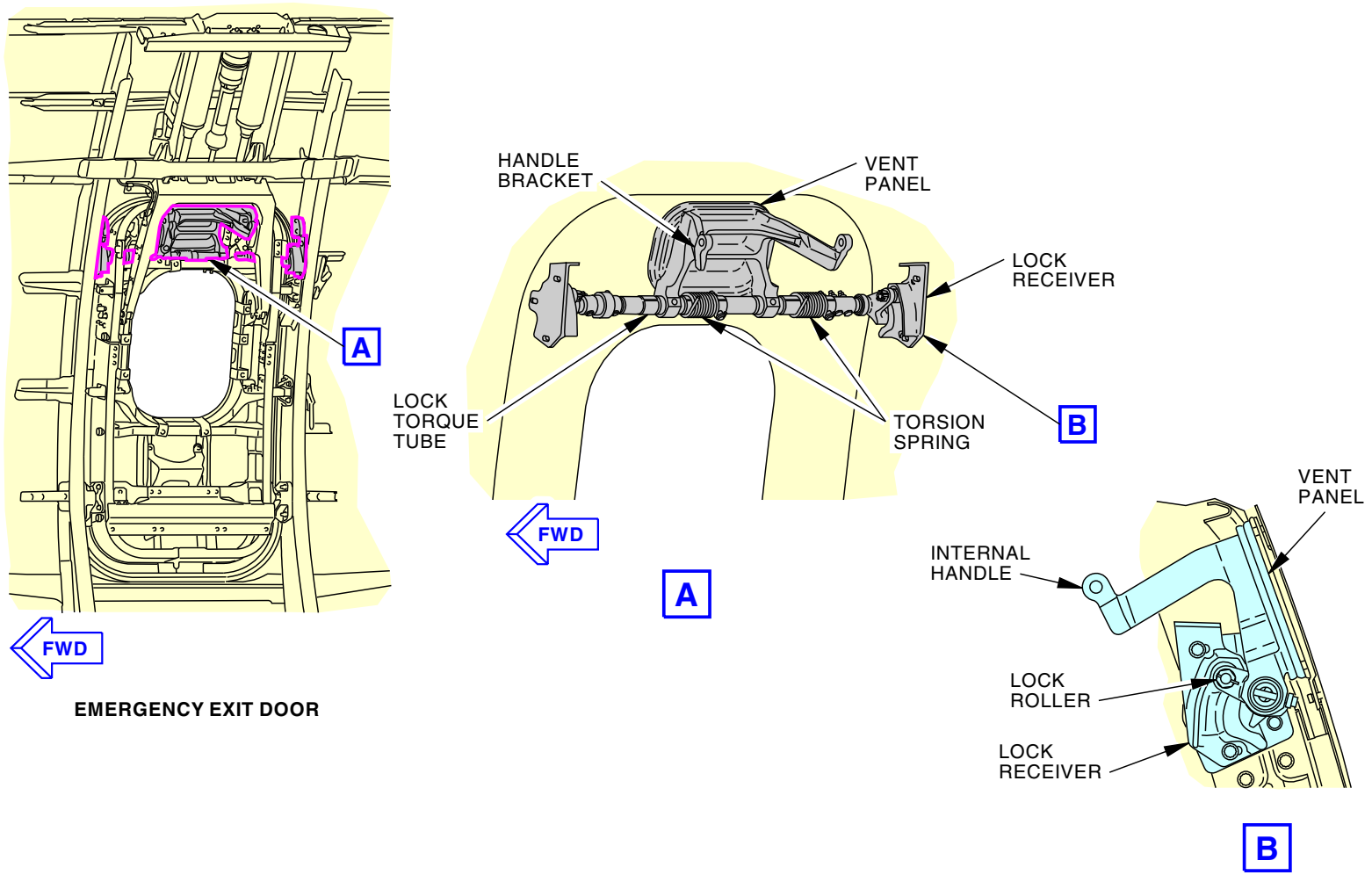
The pressure vent panel and the handle are combined. They turn at the same time around the same torque tube to open the emergency exit door.

When the cabin is pressurized, the pressure vent panel initially resists the operation of the handle. Cabin pressure must vent through the pressure vent panel before you can open the door.

The pressure vent panel and handle are spring-loaded to the close position.

The handle lets the operator open the door. When you pull the handle, the torque tube pulls the lock rollers out of the lock receiver. This causes the door to move inboard and down. This inboard and downward movement lets the door clear the stop fittings and open.

## DOORS - EMERGENCY EXIT DOOR - HANDLE MECHANISM




DOORS - EMERGENCY EXIT DOOR - HANDLE MECHANISM

## DOORS - EMERGENCY EXIT DOOR - HINGE ARM LOCK PAWL MECHANISM

### Purpose

The hinge arm lock pawl mechanism latches the door in the open position.

### Location

One lock pawl mechanism is on each side of the emergency exit door frame.

### General Description

The hinge arm lock pawl mechanism has these components.

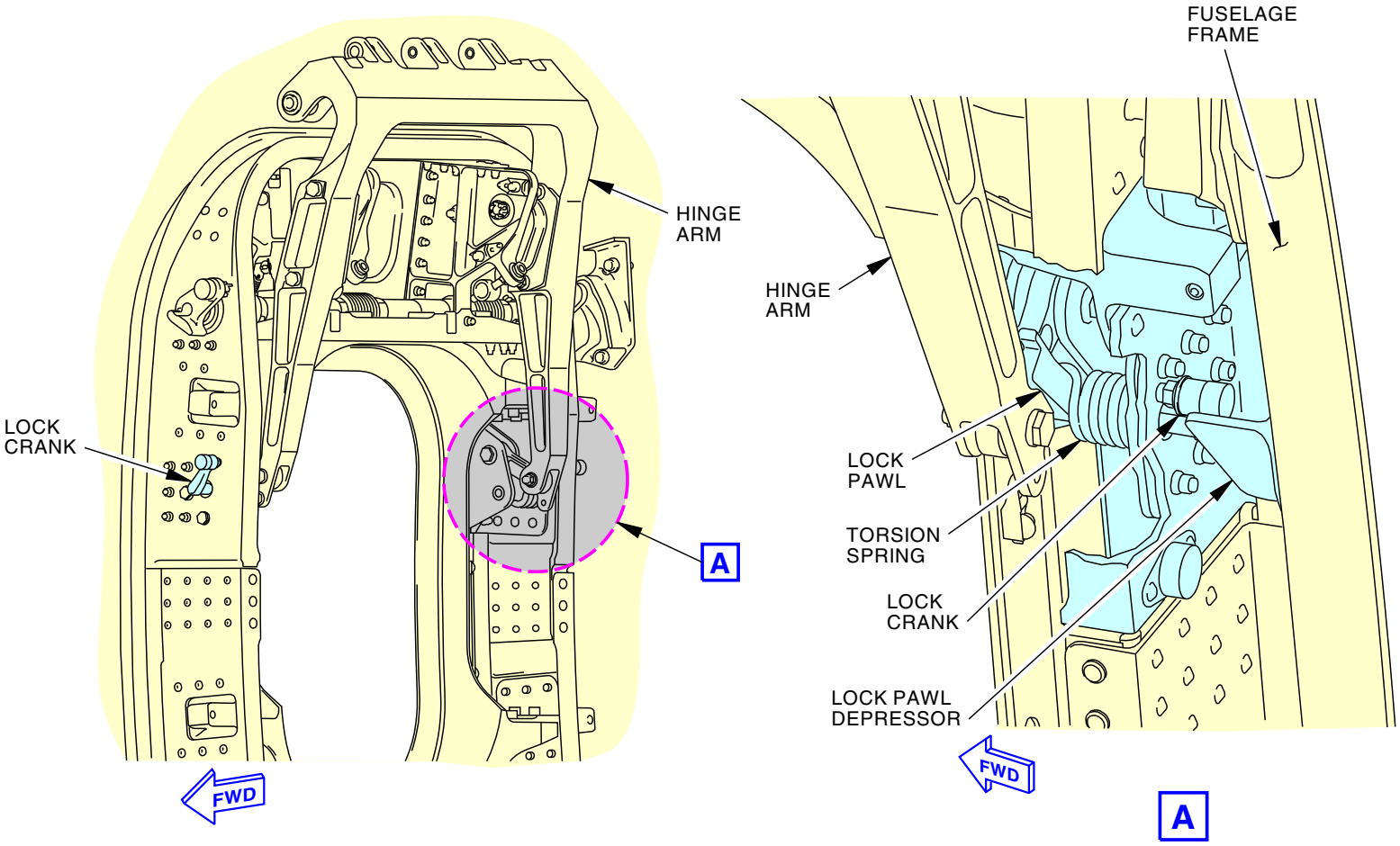
- Lock crank
- Lock pawl
- Lock pawl depressor
- Torsion spring.

The lock crank and the lock pawl work together to stabilize the door when it is open.

The lock pawl depressor prevents the lock pawl from engagement of the hinge arm before the door is fully open. This lets the hinge arm and door move freely between the latch and unlatch positions.

The torsion spring pushes the lock pawl to the lock position.

## DOORS - EMERGENCY EXIT DOOR - HINGE ARM LOCK PAWL MECHANISM

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DOORS - EMERGENCY EXIT DOOR - HINGE ARM LOCK PAWL MECHANISM

## DOORS - EMERGENCY EXIT DOOR - HINGE ARM-TO-BODY MECHANISM

### Purpose

The hinge arm lets the emergency exit door open and close.

### Location

The hinge arm is on the upper half of the door.

### Description

The hinge arm-to-body mechanism has these components.

- Hinge arm
- Swing links
- Hinge arm latch roller
- Hinge arm latch track.

The hinge arm connects the door to the fuselage structure. This gives the door an attachment point to turn while the door opens and closes.

The swing links attach to the lower section of the hinge arm. They let the door move about the hinge arm between the open and close positions.

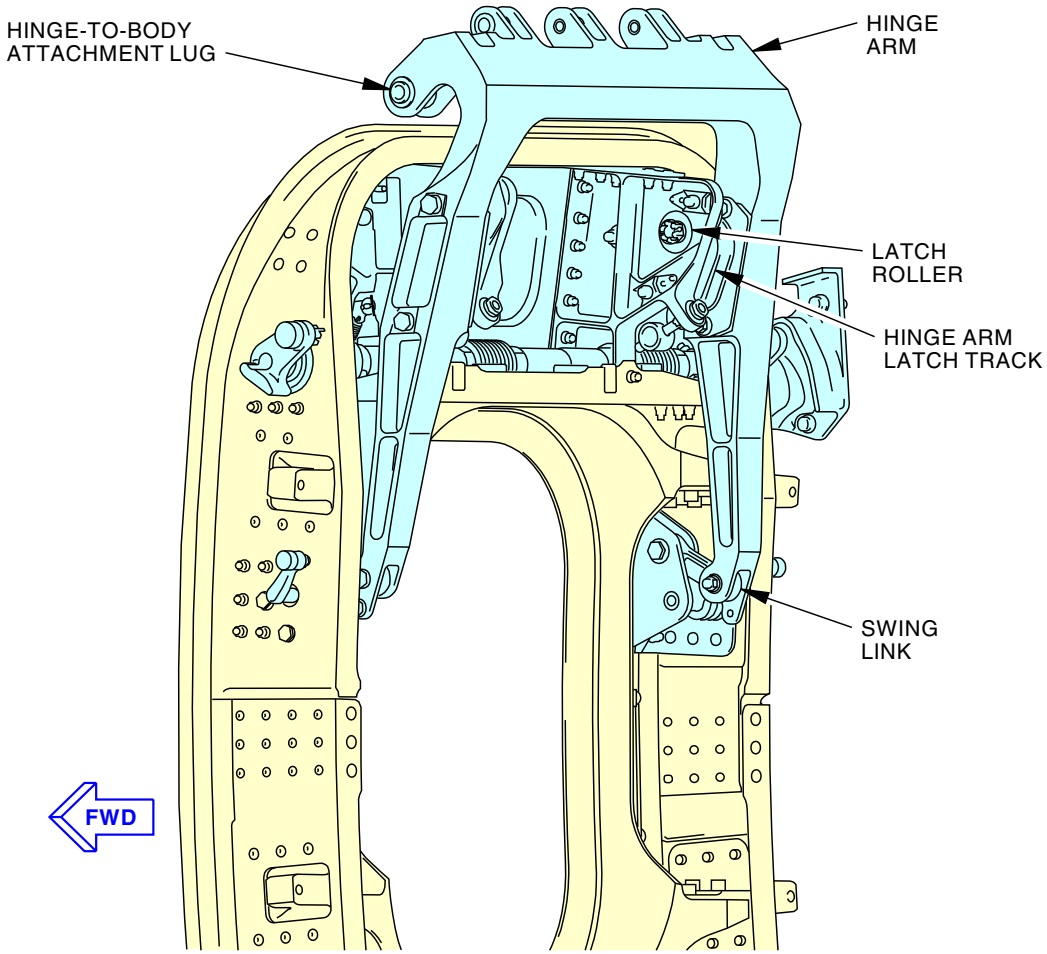
The hinge arm rollers and hinge arm latch track work together to direct the door motion.

When the door opens and closes, the shape of the latch tracks controls the motion of the door. The door moves to properly engage or disengage the door pressure stops.

### Training Information Point

The adjustment screws and slotted plate on the two piece roller intercostals are for the door vertical adjustments between the door and hinge arm.

## DOORS - EMERGENCY EXIT DOOR - HINGE ARM-TO-BODY MECHANISM

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DOORS - EMERGENCY EXIT DOOR - HINGE ARM-TO-BODY MECHANISM

## DOORS - EMERGENCY EXIT DOOR - COUNTERBALANCE MECHANISM

### Purpose

The counterbalance mechanism turns the door and hinge arm to the full open position.

### Location

The counterbalance mechanism attaches to the top of the hinge arm and auxiliary sill structure.

### Description

The counterbalance mechanism has these components.

- Counterbalance assembly
- Hydraulic snubber.

The counterbalance assembly opens and keeps the door in the open position. An internal stop limits the range of travel in the open direction.

The hydraulic snubber limits the maximum angular velocity of the hinge arm when the door opens. The hydraulic snubber lets the door open in the required time.

When the door is opened, trapped fluid in the snubber cylinder is forced to the piston reservoir through an internal fixed orifice. The door is snubbed by this action. When the door is closed, the silicone fluid returns to the snubber cylinder through a check valve.

### Training Information Point

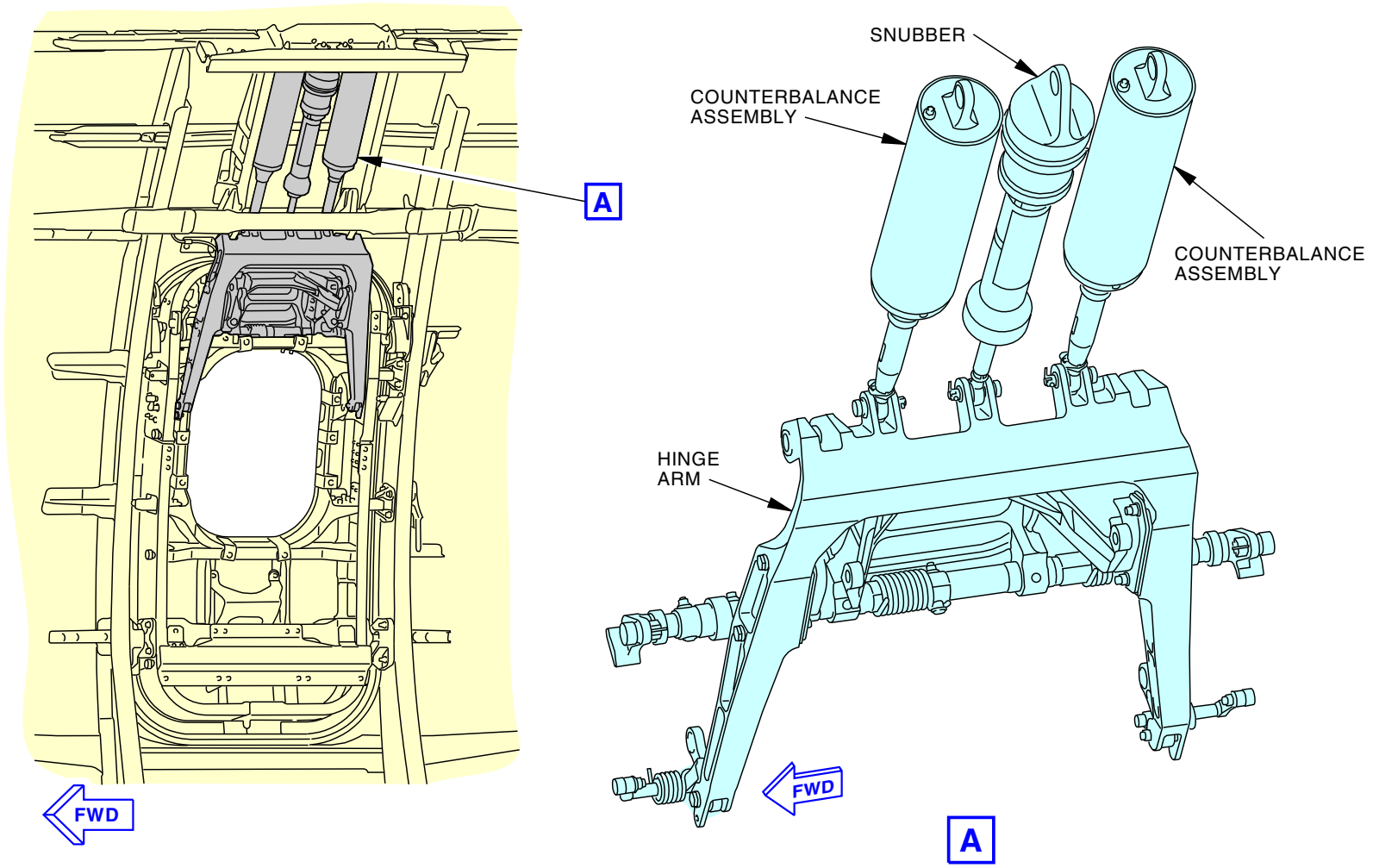
No special tools are necessary to install the counterbalance assembly.

Each counterbalance unit contains an integral travel stop that defines the extended position of the unit. The stop also is the stop for the door. A threaded adjustment at the end of each actuator is used to rig the door in the open position.

To prevent injury when you maintain or overhaul the unit, always use the proper tools. Disassembly is very difficult without the proper procedure and tools.

A warning placard on the surface of the unit will refer the operator to the correct section of the overhaul manual.

## DOORS - EMERGENCY EXIT DOOR - COUNTERBALANCE MECHANISM

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DOORS - EMERGENCY EXIT DOOR - COUNTERBALANCE MECHANISM

## DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM

### Propose

The flight lock mechanism prevents the operation of the emergency door in flight.

### Location

The flight lock mechanism for the right emergency exit doors is on the forward upper half of the door behind the hinge arm.

The flight lock mechanism for the left side emergency exit doors is on the aft upper half of the door behind the hinge arm.

### Physical Description

The flight lock mechanism has these components.

- Flight lock solenoid
- Flight lock pawl
- Support bracket
- Lock torque tube.

### Operation

The flight lock mechanism automatically activates on takeoff roll. This prevents operation of the door handle in low differential pressure and in unpressurized flight.

During takeoff roll, 28v dc goes to the door flight lock solenoid to retract the plunger.

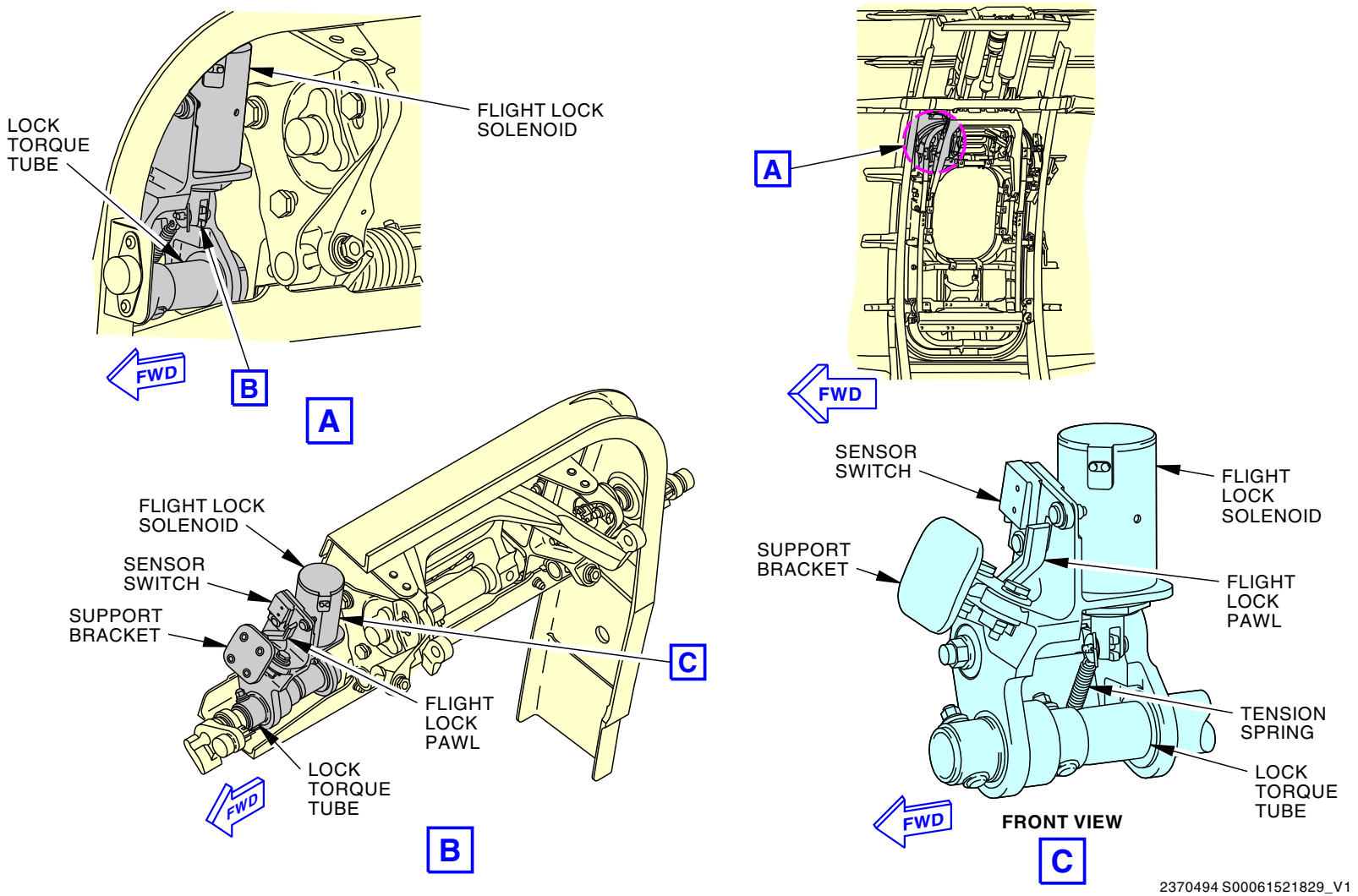
The flight lock solenoid plunger is connected to the flight lock pawl shaft. When the lock pawl shaft turns, it engages the pawl with the lock torque tube.

The lock torque tube can not move to the unlock position.

During the landing roll, the flight lock solenoid is de-energized. This lets a tension spring unlock the flight lock mechanism.

The tension spring gives a fail safe function. It makes sure that the flight lock pawl goes to the unlock position when electric power is not available.

## DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM

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DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM

## DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM - FUNCTIONAL DESCRIPTION

### Purpose

The flight lock solenoid energizes to make sure the emergency exit door does not open during takeoff and in flight.

### Functional Description

The proximity switch electronics unit energizes the flight lock relay (R742) when these conditions occur:

- Three or more of the entry/service doors are closed
- Either engine is running
- Air ground logic is in the AIR MODE or both the left and right thrust levers are advanced more than 53 degrees.

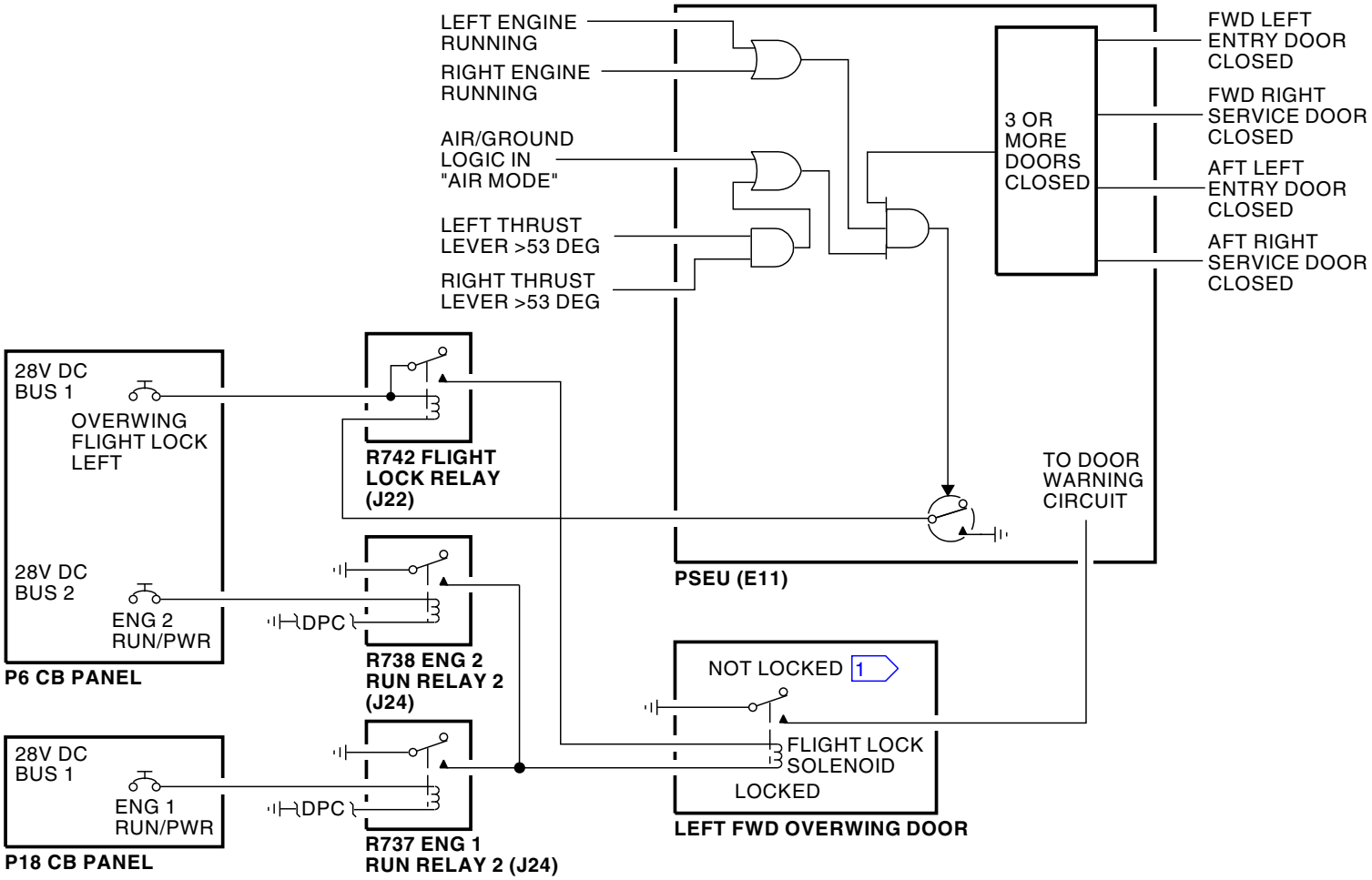
When R737 engine 1 run relay 2 or R738 engine 2 run relay 2 is energized, the flight lock solenoid energizes and locks the emergency exit door.

### Training Information Point

The engine running signal is sent from the display processing computer (DPC). An engine running signal is sent when these conditions occur:

- The engine start lever is in idle
- The electronic engine control (EEC) discrete is set to RUN or N2 > 50% (if the digital data bus is invalid).

## DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM - FUNCTIONAL DESCRIPTION

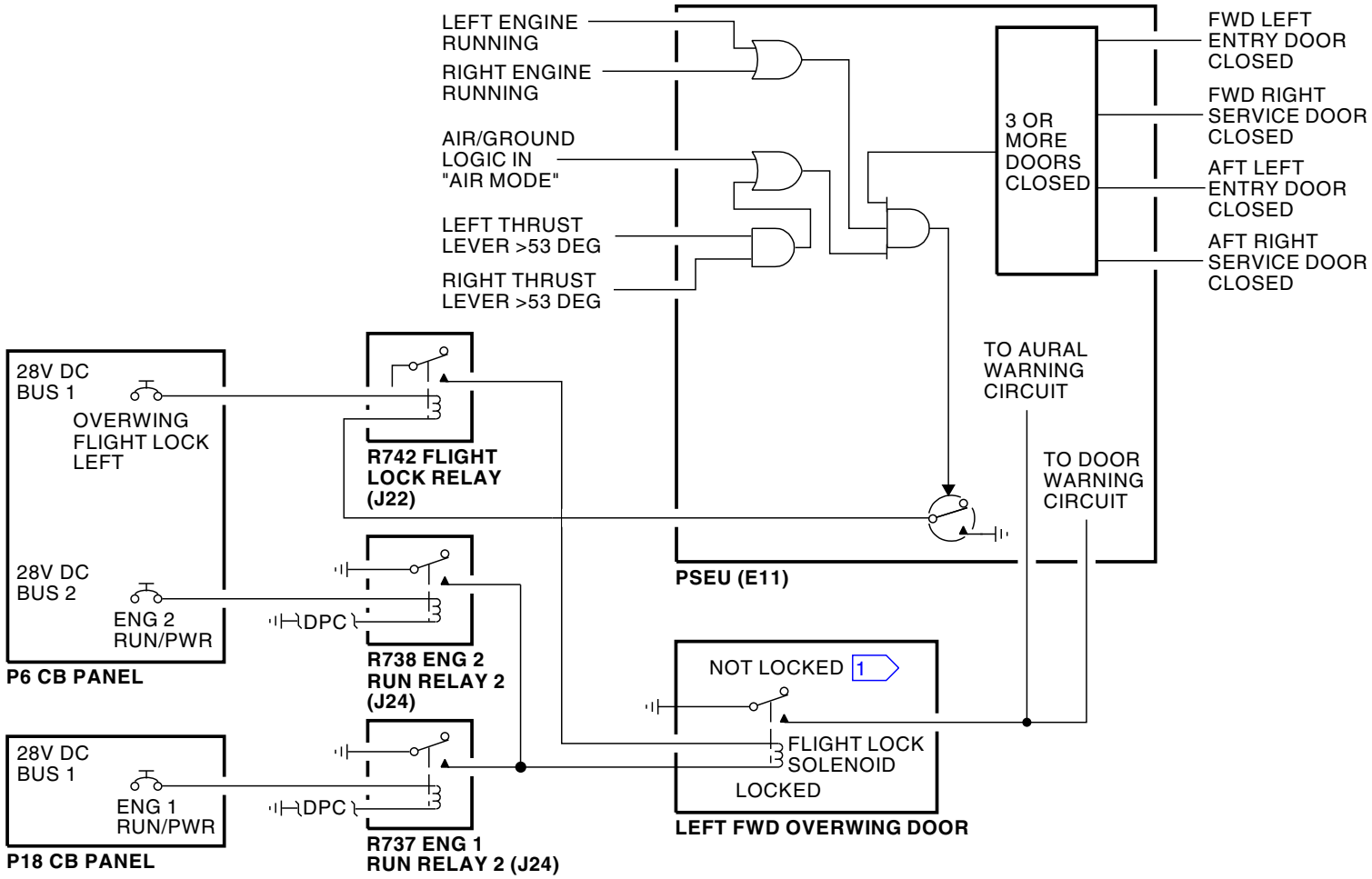



1 LEFT FWD OVERWING DOOR CIRCUIT SHOWN, OTHER OVERWING DOORS SIMILAR.

2370495 S00061521831_V3

DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM - FUNCTIONAL DESCRIPTION

## DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM - FUNCTIONAL DESCRIPTION




1 LEFT FWD OVERWING DOOR CIRCUIT SHOWN, OTHER OVERWING DOORS SIMILAR.

2933213 S0000710236_V2

DOORS - EMERGENCY EXIT DOOR - FLIGHT LOCK MECHANISM - FUNCTIONAL DESCRIPTION

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## DOORS - EMERGENCY EXIT DOOR - DOOR OPEN OPERATION

### Operation

To open the door from the inside, you must pull the handle down to start the door open sequence.

These are the steps of the door open sequence.

- The latch rollers travel down the latch receivers
- The door travels inboard and downward to clear the stop fittings
- The counterbalance assemblies are free to turn the door out of the fuselage cutout
- The door continues to turn from close to open position, the door opens approximately 125 degrees around the fixed hinge line
- The hinge arm lock pawl locks when the door is fully open.

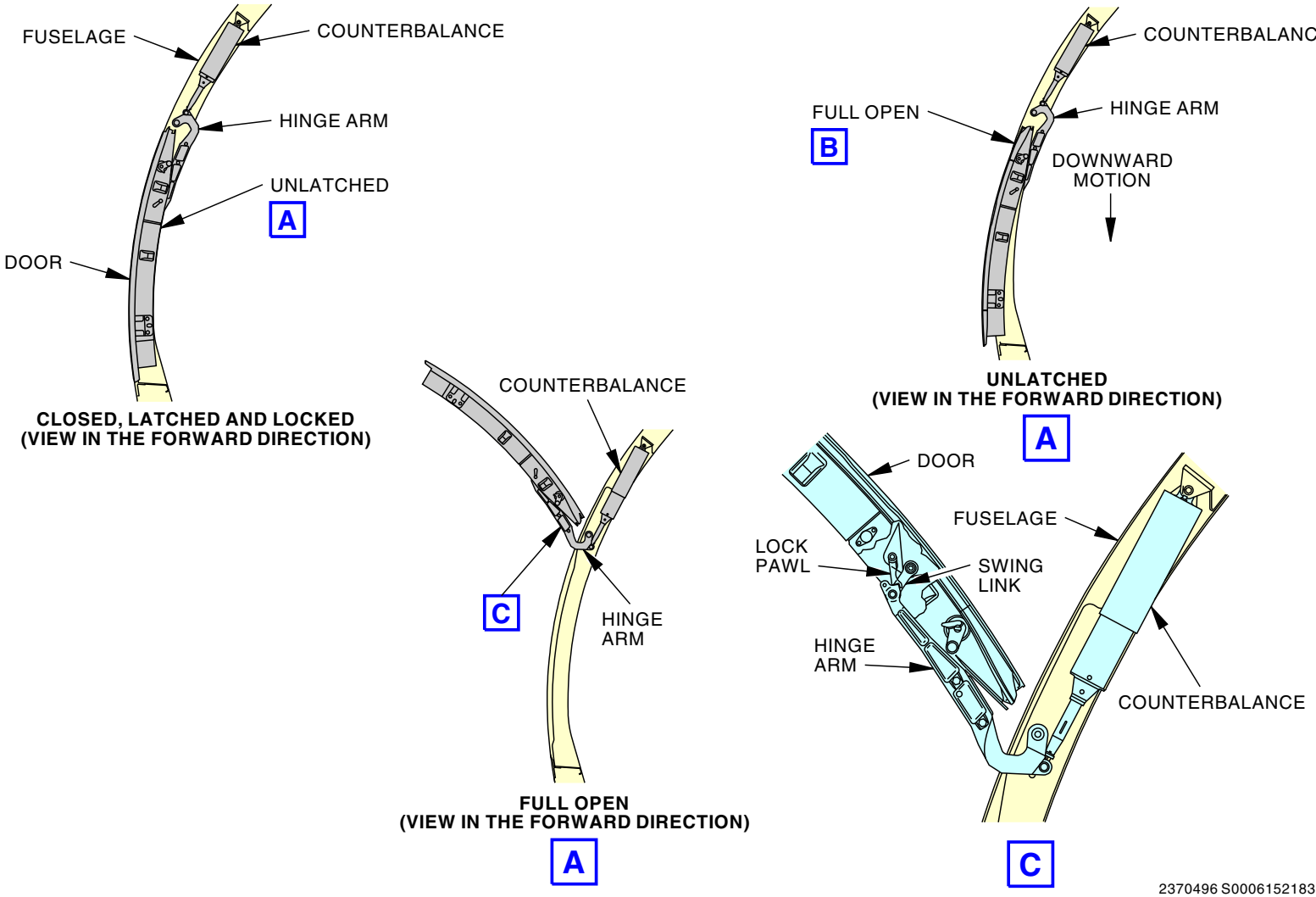
To open the door from the outside, push the vent panel inward to start the sequence.

The door operation is automatic after the initial handle/vent panel rotation.

### Training Information Point

If you open the door from the outside of the airplane, brace your knee against the door to prevent injury.

## DOORS - EMERGENCY EXIT DOOR - DOOR OPEN OPERATION




DOORS - EMERGENCY EXIT DOOR - DOOR OPEN OPERATION

## DOORS - EMERGENCY EXIT DOOR - DOOR CLOSE OPERATION

### Operation

To close the door, remove the strap cover from the lower door lining and pull down on the assist strap.

As the door starts to go into the cutout, pull the interior handle down. This aligns the lock rollers with lock receivers. When the door touches the cutout, the interior handle stays in the down position.

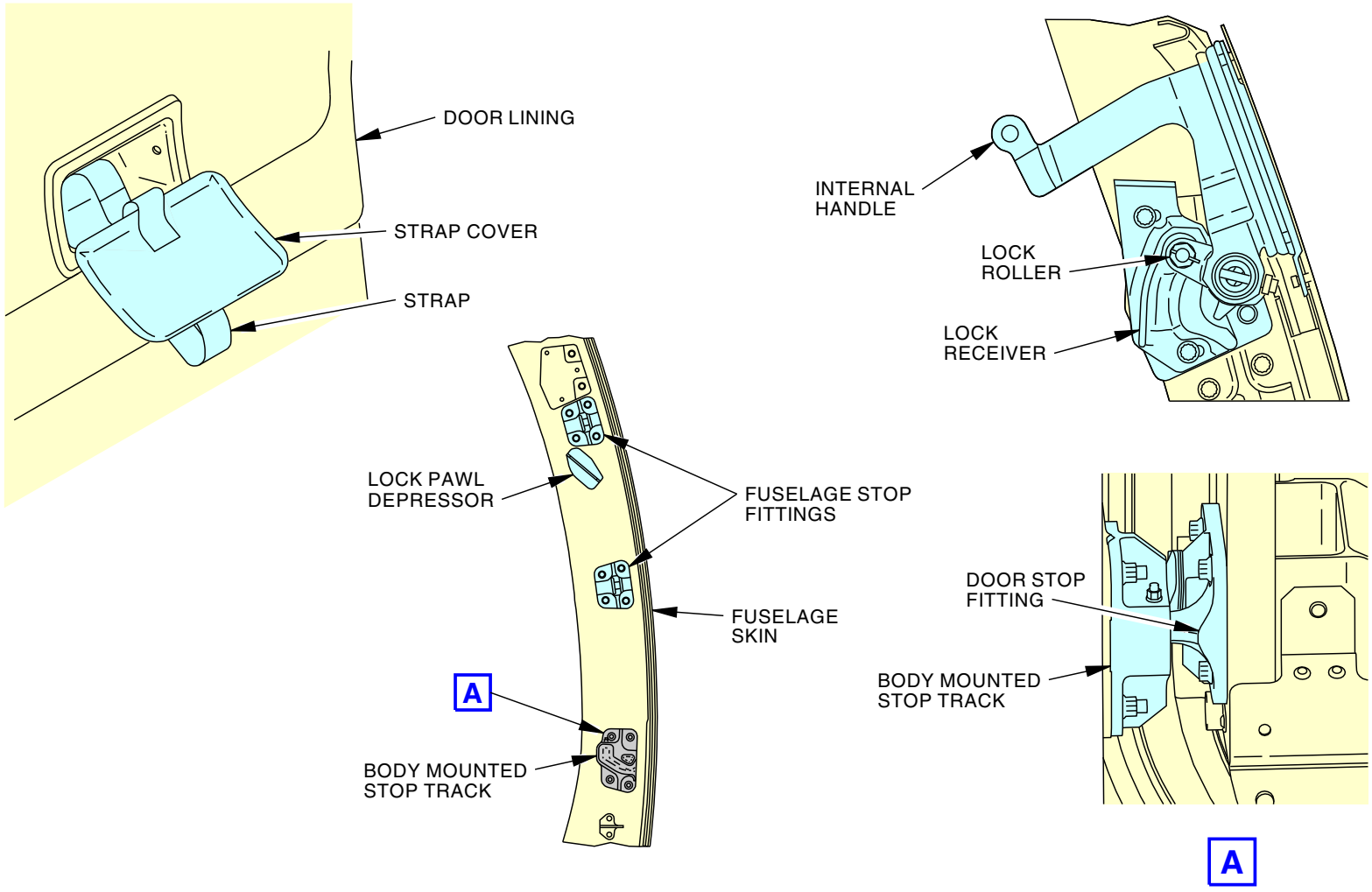
Both hands are necessary for the final movement of the door. Pull the strap inward and upward to move the door behind the door stops.

On the final pull up, the door handle latches closed. Replace the clear handle cover over the handle. Make sure the control cabin indication light goes out.

### Training Information Point

Keep your face away from the interior door handle on the final pull to avoid injury.

## DOORS - EMERGENCY EXIT DOOR - DOOR CLOSE OPERATION

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DOORS - EMERGENCY EXIT DOOR - DOOR CLOSE OPERATION

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## DOORS - CARGO - INTRODUCTION

### Location

The cargo compartment doors are on the right side of the fuselage, on the lower lobe, forward and aft of the wing.

### General Description

These are the two cargo doors:

- Forward cargo door
- Aft cargo door.

The doors are similar in shape, design, and operation, but they are slightly different in size.

The doors are plug-type. They open inward, and hinge at the top. Seals around the door edge and door handle shaft prevent pressurization loss.

You operate the doors manually. This may be done from outside of the airplane or from inside the cargo compartment. A counter balance inside the door reduces the effort necessary to lift the door. An uplock detent in the counter balance mechanism holds the door in the fully open position. A door snubber makes sure the door does not fall quickly if the counter balance mechanism fails.

A manual strap device in the cargo compartment ceiling can be used to hold the door in the fully open position.

A bungee lanyard with a soft-grip handle on the door makes it easy to lower the door.

### Door Warning

The cargo doors have an interface with the door warning system. Each door has a switch on its latch mechanism, and a warning light on the P5 forward overhead panel.

### Access Panels and Liners

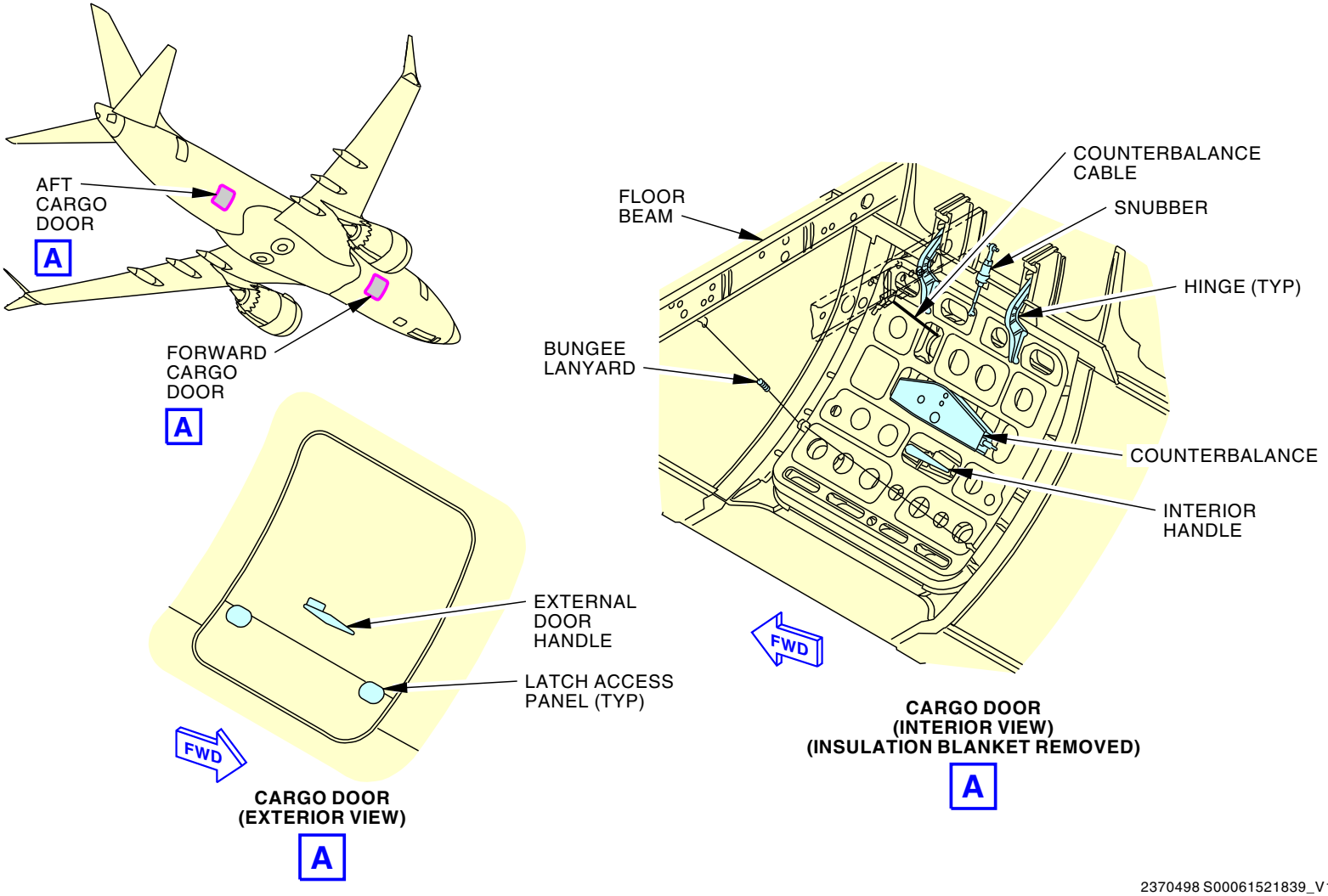
Two panels on the exterior door skin give access to the door latch mechanisms. Through these panels, you can open the door if the handle mechanism fails.

An interior insulation blanket on the door does these things:

- Protects the door internal components
- Reduces noise and thermal transmission.

Removal of the door insulation and access panels gives access to the door internal components. This is for inspection, lubrication, and service of the internal components.

## DOORS - CARGO - INTRODUCTION

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DOORS - CARGO - INTRODUCTION

## DOORS - CARGO - COMPONENTS

### General

These are the cargo door components:

- Door liner
- Hinges
- Door handle mechanisms
- Door warning switch
- Counter balance
- Snubber
- Bungee lanyard
- Door seals.

### Door Liner

The door liner protects the internal components of the door. It also reduces noise and heat transmission. Access panels in the liner give access for inspection, service, and lubrication of the door mechanisms.

### Hinges

Two hinges on the upper edge of the door do these things:

- Give pivotal structural support of the upper edge of the door
- Limit the deflection of the door when the airplane is pressurized.

### Door Handle Mechanism

There are two handles for operation of the door. They engage the door latch mechanisms. The interior handle projects beyond the inboard door liner and is in constant engagement with a handle shaft. The exterior handle is spring loaded into a faired recess on the door skin. The exterior handle engages the handle shaft with a spline when you pull the handle out of the recess.

The handle shaft transmits the motion to the latch torque tube with a control rod. The torque tube turns the latch roller arms into the roller fittings on the door frame.

The latch fittings are overcenter devices that hold the door closed when the plane is unpressurized.

### Door Warning Switch

Each cargo door has a pin-type microswitch on one of its latch fittings. The switches do these things:

- Supply ground discrete signals to the door warning system when the doors are closed and latched. This causes the warning light (FWD CARGO or AFT CARGO) on P5 forward overhead panel to go out
- Supply ground discrete signals to the cargo compartment light system. When the doors are closed and latched, the cargo compartment lights go out.

### Centering Devices

Centering rollers in the door frame align the door between door pads as the door closes. This closely aligns the stop fittings between the door and frame.

### Stop Fittings

When the airplane is unpressurized, the latch mechanisms hold the door closed. In the unpressurized condition, there is a slight clearance between the stop pin and their pressure pads.

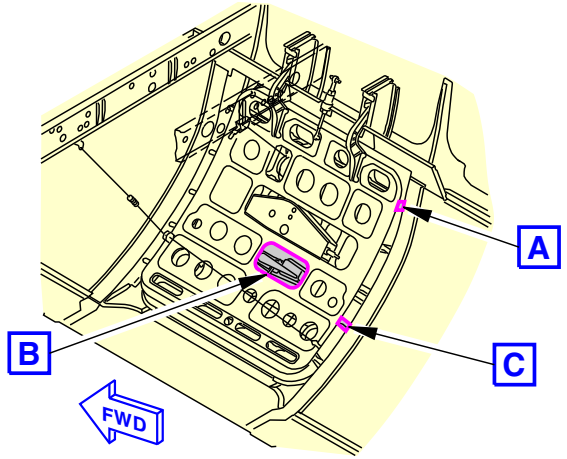
Pressurization of the airplane causes the door to move outboard slightly. This causes these things to happen:

- The stop pins seat on their pads, and transmit door pressure loads to the airplane structure
- The latch roller mechanisms are unloaded
- The pressure seals deflect fully.

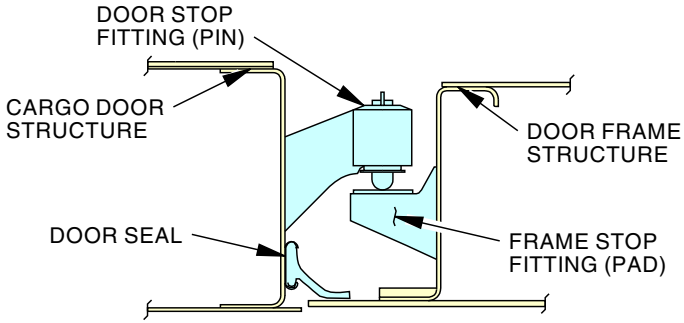
### Seals

Seals around the door edges and handle shaft prevent pressure loss.

## DOORS - CARGO - COMPONENTS

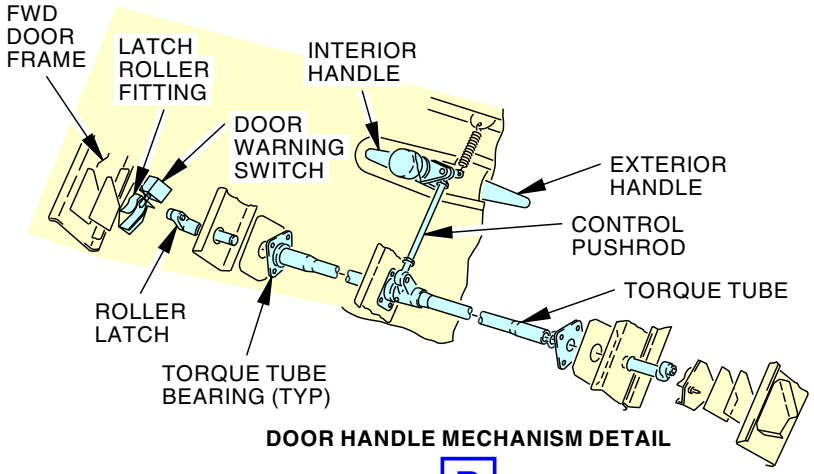



**CARGO DOOR - INTERIOR VIEW (LINER REMOVED)**



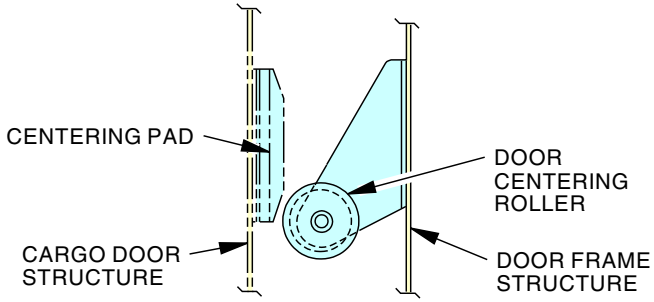

**DOOR STOP DETAIL (TYPICAL)**

**A**




**DOOR HANDLE MECHANISM DETAIL**

**B**




**DOOR CENTERING ROLLER DETAIL (TYPICAL)**

**C**

2370499 S00061521841_V1

DOORS - CARGO - COMPONENTS

## DOORS - CARGO - COUNTERBALANCE MECHANISM

### Purpose

The cargo door counterbalance does these things:

- Reduces the force required to lift the cargo door to the open position
- Holds the cargo door up in the fully open position.

### Location

The counterbalance mechanism main assembly is inside the door structure. Remove the door liner and insulation to get access to the main counterbalance assembly.

The counterbalance cable runs from the main assembly to a door pulley, and then to a ceiling bracket. The ceiling bracket attaches to aircraft primary structure.

### General Description

The counterbalance is a spring-loaded mechanical device that offsets the weight of the door.

The main counterbalance assembly and cable pulley are on the door structure. The counterbalance attaches to a cargo compartment ceiling bracket with a cable.

The main assembly has these parts:

- An assembly frame
- A spring-loaded roller
- An idler crank
- A cam with a roller track
- A cable drum and cable.

When the door is closed, the spring-loaded roller is compressed and on high cam (on the cam nose).

The spring force extends the roller. This action causes the cam to turn.

The cam turns on a shaft that is common to the cable drum. When the cam turns, the cable drum also turns.

As the cable drum turns, it retrieves (pulls in) a cable. The cable runs through a pulley to a ceiling bracket in the cargo compartment. As the cable shortens by the winding action of the cable drum, it lifts the door.

An uplock detent in the cam track holds the door in the fully open position. The door stays in the open position until you pull downward on the bungee lanyard to close the door.

A nut on the ceiling bracket end of the cable adjusts the cable (to take up cable stretch).

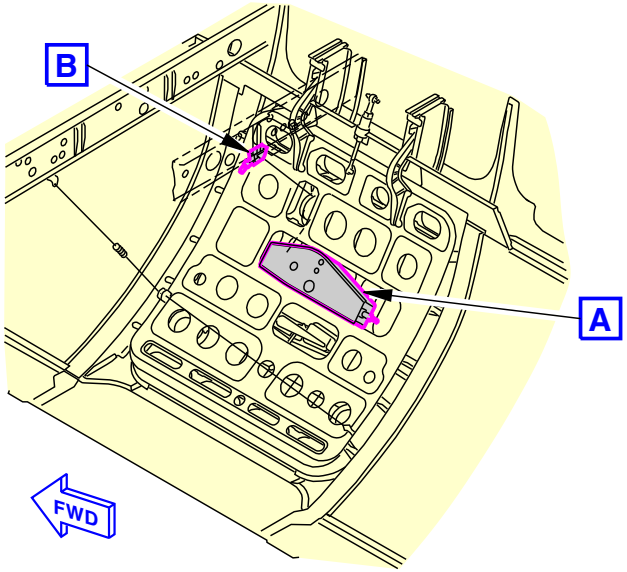
### Training Information Point

The entire threads of the adjustment fitting should engage the spring-loaded roller rod. If the thread engagement is not sufficient, the spring force can strip the fitting threads. This would cause the fitting to fly off the end of the rod with a great force.

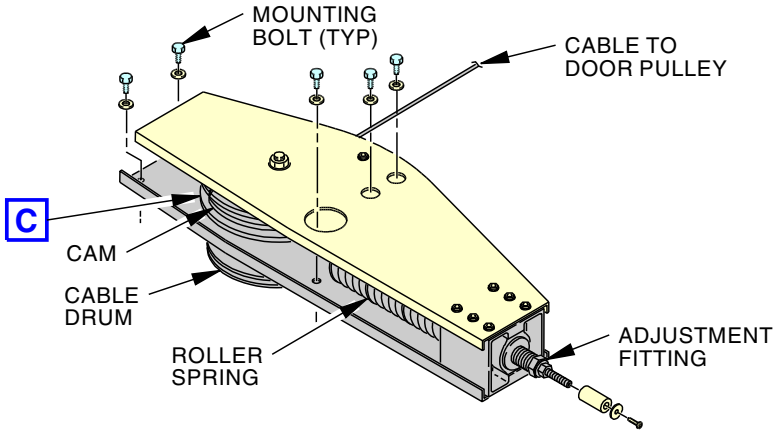
Secure the baggage in the cargo compartments with the cargo nets and/or inner cargo panel door properly. This will keep the baggage from contact with the door and its mechanisms.

If loose baggage contacts the door cable, it can cause the cable to come out of the door pulley. This can jam the counterbalance mechanism. If you must free such a jam and return the cable to the pulley, be careful. The counterbalance can remove the cable slack very quickly and with great force.

## DOORS - CARGO - COUNTERBALANCE MECHANISM

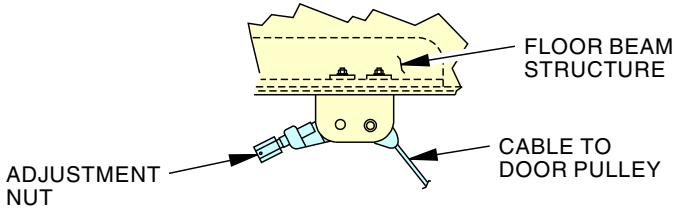



CARGO DOOR - INTERIOR VIEW
(LINER REMOVED)



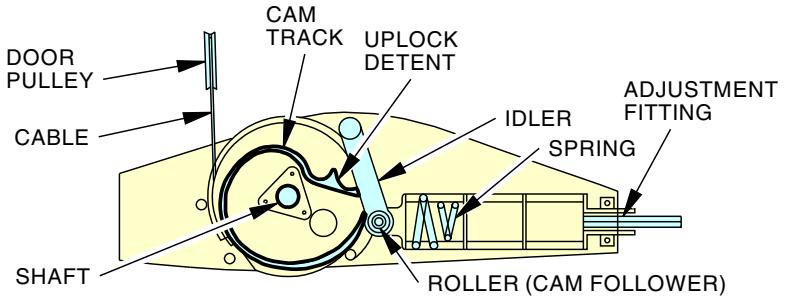

COUNTERBALANCE ASSEMBLY DETAIL

A




CEILING BRACKET DETAIL

B




COUNTERBALANCE DETAIL
(COVER REMOVED)

C

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DOORS - CARGO - COUNTERBALANCE MECHANISM

## DOORS - CARGO - OPERATION

### General Description

You open and close the cargo door manually. The door has hinges on their upper edge, and swings open in a upward and inward motion. A counterbalance mechanism in the door helps lift the door and holds it in an uplock position.

You can open the door from inside or outside of the cargo compartment.

### Exterior Operation

To open the cargo door from outside the airplane, pull the handle fully out of its recess and turn the handle counterclockwise. This disengages the door latch mechanisms. The door then moves inboard by the action of the counterbalance mechanism. When the door is free of the latch mechanisms, return the handle to its recess. When you begin to push the door open, the door counterbalance will lift the door to the fully open position and hold it there.

An adjustable nylon safety strap is on the ceiling of the cargo compartment. You can use it to hold the cargo door in the open position if necessary.

Before you close the door from outside of the airplane, examine these things:

- The cargo nets should be secure to prevent cargo from contact with the door components
- The door frame should be clear of obstruction.

To close the door, do these steps:

- Pull the soft-grip bungee lanyard at the forward edge of the door. This will pull the door out of uplock and lower the door until you can reach the handle.
- When you have the handle, release the lanyard and the bungee will retract it back into the cargo compartment.
- Turn the handle counterclockwise so that the door latch rollers will enter their latch tracks.
- Pull the door to the closed position with the handle.
- Turn the handle clockwise to fully close and latch the door.
- Return the handle to its recess.

### Interior Operation

You can open and close the cargo doors from inside the cargo compartments. The interior handle is not retractable. The procedure is similar, except you turn the inside handle clockwise to unlatch the door and counterclockwise to latch the door.

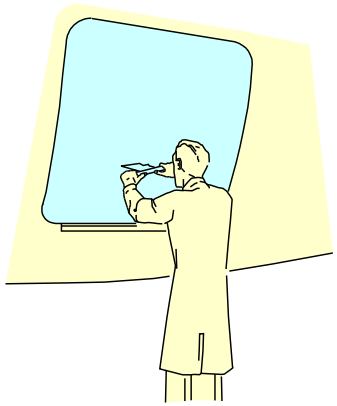
### Training Information Point

A switch on the forward door latch mechanism causes the P5 door warning light to come on (unlatched) or go off (latched).

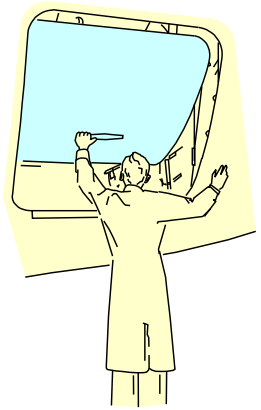
Properly secure the baggage in the cargo compartments with the cargo nets and other cargo restraints. This will keep the baggage from contact with the door and it's mechanisms.

The forces required to operate the door are not great. If a door is difficult to operate, the door may be jammed by loose cargo or there may be a malfunction of a door component.

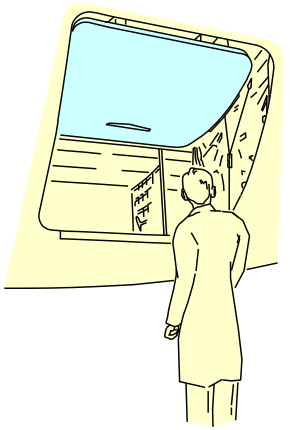
## DOORS - CARGO - OPERATION



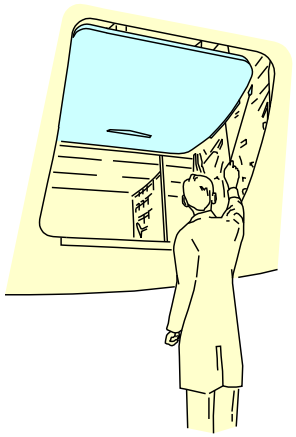
UNLATCH THE DOOR



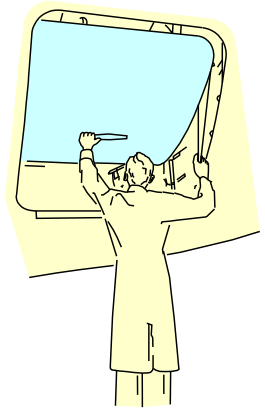
PUSH THE DOOR OPEN



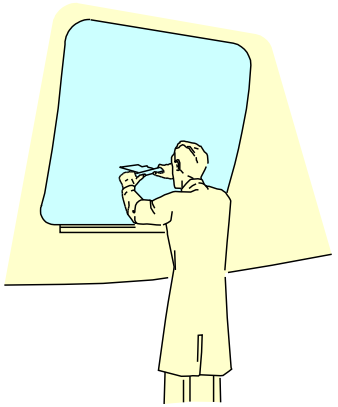
DOOR FULLY OPEN (UPLOCK)



LOWER THE DOOR WITH BUNGEE LANYARD



PULL THE DOOR CLOSED WITH THE HANDLE



LATCH THE DOOR

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DOORS - CARGO - OPERATION

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## DOORS - SERVICE - GENERAL DESCRIPTION

### Purpose

The miscellaneous exterior service doors give access to areas with components that require regular servicing.

### IDG Oil Reservoir Access Door

The IDG oil reservoir access door is on the left forward engine fan cowl. It gives access to the IDG oil reservoir and sight gage.

### Ground Air Conditioning Access Door

The ground air conditioning access door is on the lower fuselage centerline, forward of the air conditioning bay doors.

### Waste Service Panel

The waste service panel is on the aft, lower left surface of the fuselage. It gives access to the lavatory drain outlet, drain valve handle, and rinse fitting.

### Section 48 Access and Blowout Door

The section 48 access and blowout door is on the left side of the lower fuselage, aft of the aft pressure bulkhead. It hinges open downward to give access to the section 48 components.

The door has a spring-loaded latch system. This protects the empennage structure if the aft pressure bulkhead fails. The door latch will open when a load of 52-68 pounds is put on the inside of the door.

### Engine Oil Tank Access Door

The engine oil tank access door is on the right forward engine fan cowl. It gives access to the engine oil tank filler cap and sight glass.

### External Power Receptacle Door

The external power receptacle door is on the lower right fuselage, forward of the nose wheel well. It gives access to the external power receptacle and panel. The door also gives access to the nose wheel well light switch.

### Center Fuel Tank Sump Access Door

The center fuel tank sump access door is on the keel beam between the air conditioning pack bays. It gives access to the center fuel tank sump valve.

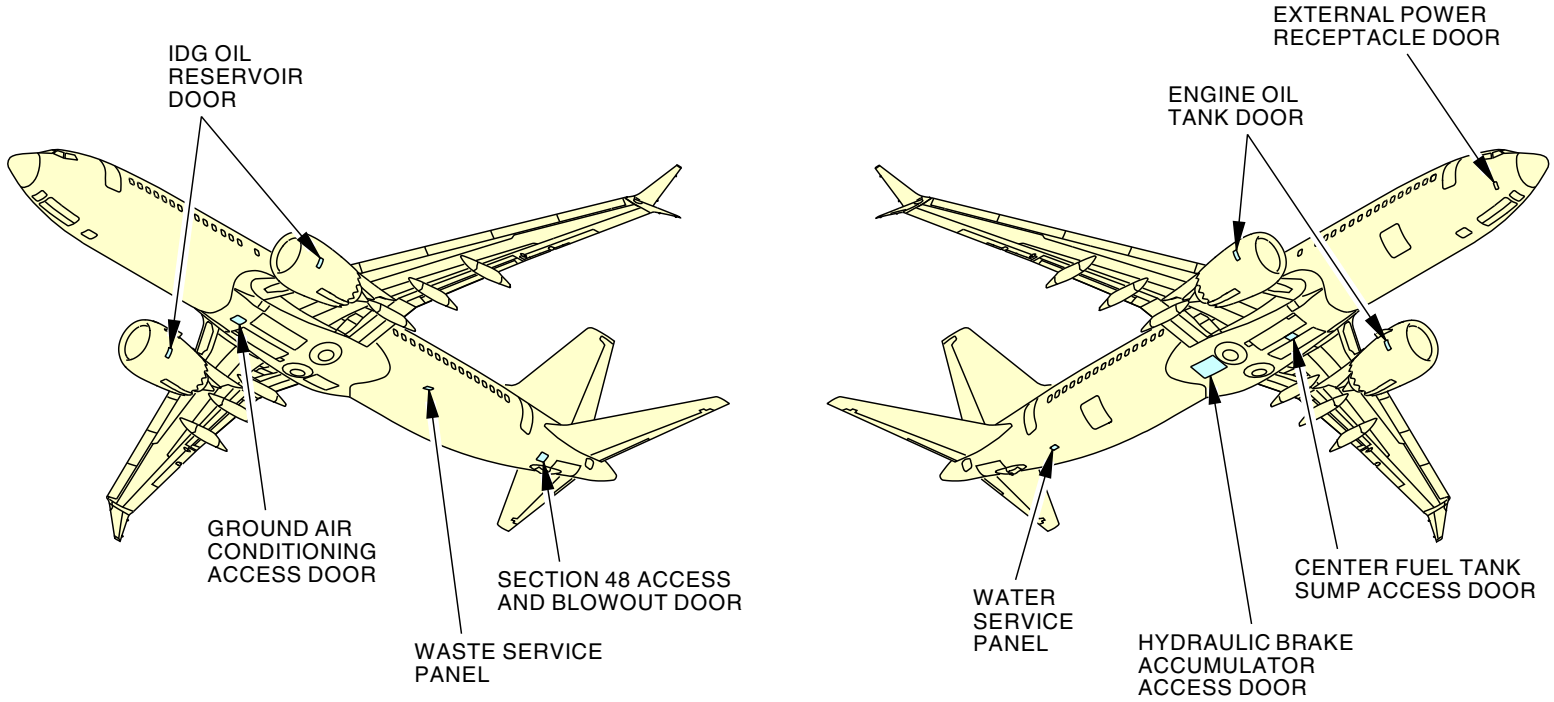
### Hydraulic Brake Accumulator Access Door

The hydraulic brake accumulator access door is aft of the right main landing gear wheel well. It gives access to the hydraulic brake accumulator and the standby hydraulic pump components.

### Water Service Panel

The water service panel is on the aft, lower right surface of the fuselage. It gives access to the potable water system valve handles and fill fitting.

## DOORS - SERVICE - GENERAL DESCRIPTION

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DOORS - SERVICE - GENERAL DESCRIPTION

## DOORS - SERVICE - FORWARD ACCESS DOOR

### Location

The forward equipment compartment access door is forward of the nose wheel well.

### General Description

The door is a plug type door. It hinges on its aft edge and swings open upward, into the fuselage.

The door structure is an aluminum casting. A continuous seal around the door prevents loss of cabin pressure. Pressure loads transmit from the door to the door frame by stop pins and pads.

Two hinge arms on the door extend aft to engage hinge fittings on the nose wheel well forward bulkhead.

The door latch mechanism has two latch pins that extend to hold the door closed.

### Operation

The handle fairs with the door skin. Push on the button marked PUSH, and the handle extends from spring force.

Turn the handle counterclockwise and each the latch pin retracts from its boss. This unlatches the door. You can then push the door open. A fitting above and aft of the door engages the left side latch pin when the handle is moved back to its closed position.

When you close the door, you must extend the handle and turn it counterclockwise to retract the latch pin. This allows the door to seat in its frame. When the door is closed, it latches with a clockwise turn of the handle. This forces the latch pins into the frame bosses. When the door is closed and latched, push the handle back into its recess.

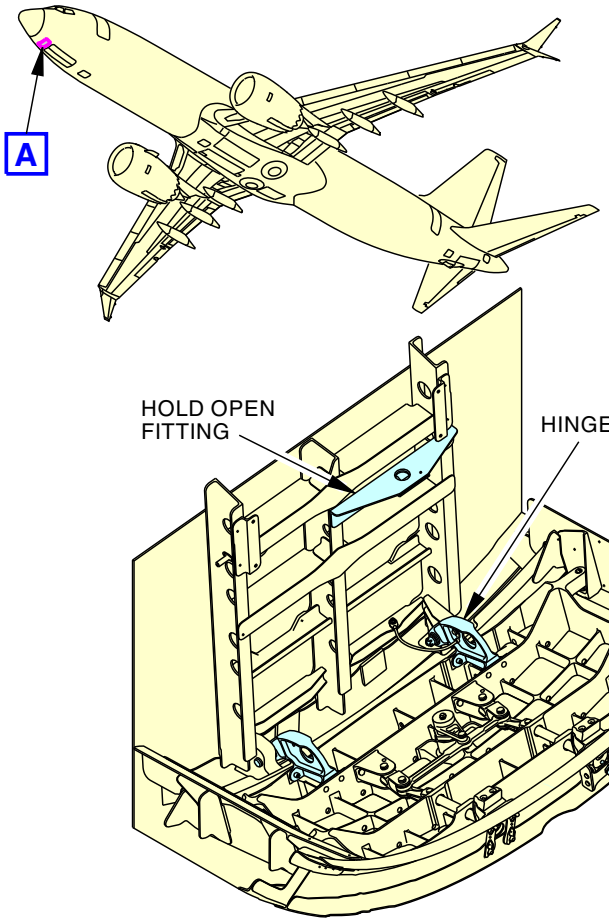
### Operational Displays

The forward equipment compartment access door has an interface with the door warning system. It shares the P5 panel EQUIP door warning light with the EE compartment external access door.

When the door is not latched, the left side latch pin does not push on the door warning microswitch. The switch closes and the P5 panel EQUIP door warning light comes on.

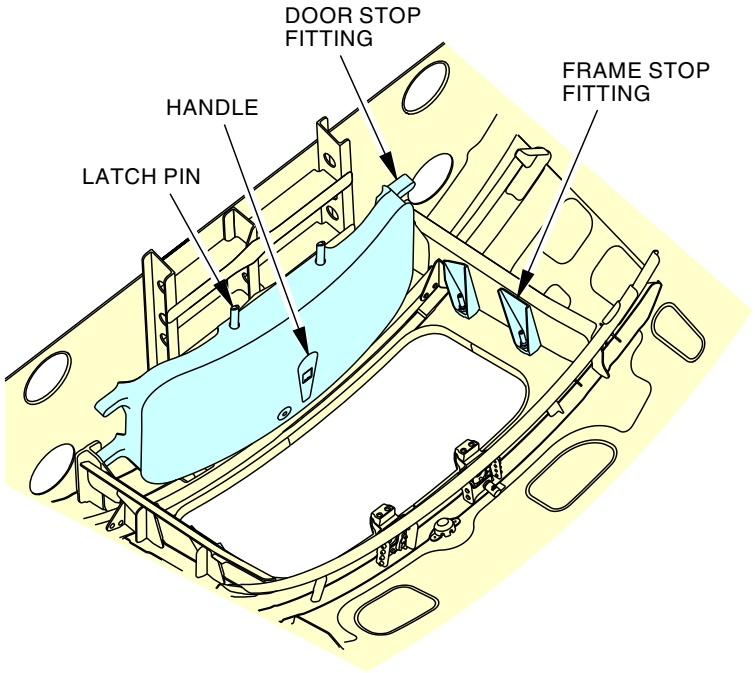
When the door latches, the latch pin enters the frame boss and opens the door warning microswitch. This removes the ground from the light.

## DOORS - SERVICE - FORWARD ACCESS DOOR




**FORWARD EQUIPMENT COMPARTMENT ACCESS DOOR (INTERIOR VIEW - CLOSED)**

**A**




**FORWARD EQUIPMENT COMPARTMENT ACCESS DOOR (INTERIOR VIEW - OPEN)**

**A**

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DOORS - SERVICE - FORWARD ACCESS DOOR

## DOORS - SERVICE - ELECTRONIC EQUIPMENT COMPARTMENT EXTERNAL ACCESS DOOR

### Location

The door is on the bottom of the fuselage, aft of the nose wheel well.

### General Description

The door is a plug-type door.

When the door opens, it slides upward and to the right. In the fully open position it stows in the fuselage, to the right of the door frame. You operate the door from outside the airplane.

The door has these parts:

- Door latch mechanism
- Door rollers
- Fuselage door roller tracks
- Door seal.

### Door Latch Mechanism

A spring-loaded handle with a push-button release controls the latch mechanism. The handle fairs with the fuselage skin until it is released. The handle shaft turns a pinion gear in the door that drives four rack gear latch pins. This causes the pins to engage or disengage the latch pin fittings on the door frame. The latch pins transmit the door pressure loads to the door frame.

The fittings have lugs that will transmit the pressure loads safely even if the latch pins are unlatched.

### Door Rollers and Fuselage Roller Tracks

The door has three sets of rollers that run in tracks attached to fuselage structure. Together, the rollers and tracks control the motion of the door as it slides open or closed.

Gravity detents in the tracks hold the door in place at the partially open and the full open positions.

The inboard parts of the roller tracks fold to improve access to the equipment racks. The tracks hinge near the right side of door frame. A spring catch on the end of each track holds the track in the folded or unfolded position.

### Door Seal

A seal around the door prevents pressure loss.

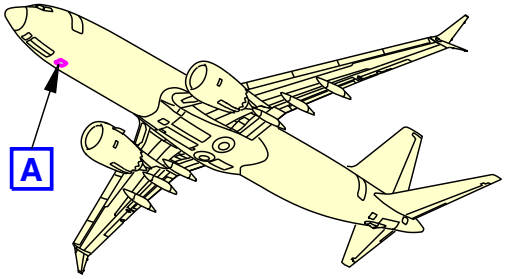
### Door Warning Switch

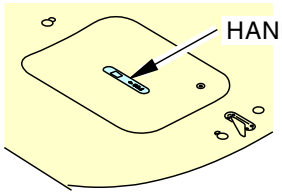
The door has an interface with the door warning system. It shares the P5 panel EQUIP door warning light with the forward equipment compartment door. The left latch pin operates the door warning switch. The switch is outboard of the left latch pin frame bushing.

When the door is latched, the latch pin pushes on the switch. This opens the switch and removes a ground from the EQUIP light and the light goes out.

When the door is unlatched, the latch pin releases the switch. The switch closes to give a ground to the EQUIP light and the light comes on.

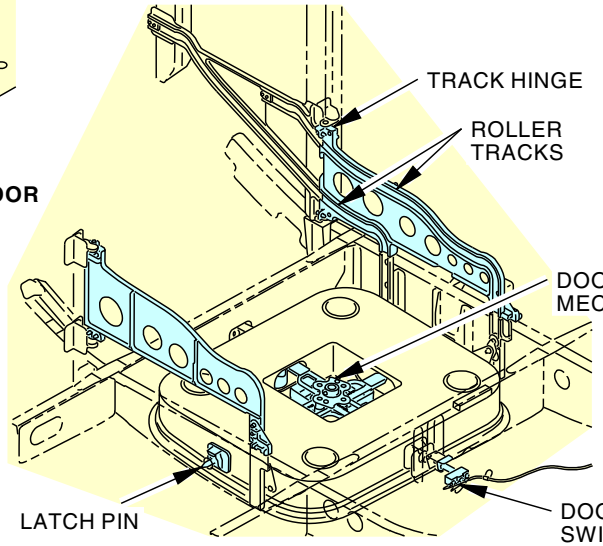
## DOORS - SERVICE - ELECTRONIC EQUIPMENT COMPARTMENT EXTERNAL ACCESS DOOR



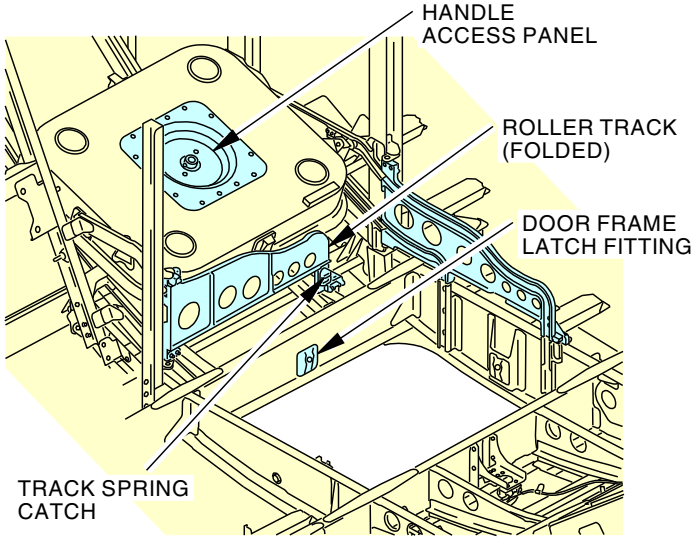

**EE COMPARTMENT EXTERNAL ACCESS DOOR (EXTERNAL VIEW)**

**A**




**EE COMPARTMENT EXTERNAL ACCESS DOOR (INTERIOR VIEW - DOOR CLOSED) (EXAMPLE)**

**A**




**EE COMPARTMENT EXTERNAL ACCESS DOOR (INTERIOR VIEW - DOOR OPEN) (EXAMPLE)**

**A**

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DOORS - SERVICE - ELECTRONIC EQUIPMENT COMPARTMENT EXTERNAL ACCESS DOOR

## DOORS - SERVICE - ELECTRONIC EQUIPMENT COMPARTMENT EXTERNAL ACCESS DOOR - OPERATION

### Operation

You operate the electronic equipment compartment external access door manually. You open and close the door from outside of the airplane.

### Open Door

The handle on the door fairs in a recess. A push-button trigger releases the handle, and it comes out of fair by spring force.

Turn the handle counterclockwise to disengage the latch pins. When the latch pins are free, you can push the door upward and slightly to the right to the first detent. Then push the door to the right to the fully open detent.

When the door is fully open, the roller tracks can be folded to improve access to the equipment racks. A spring catch on the end of each roller track holds the track in the folded or unfolded position.

### Close Door

Before you close the door, make sure the roller tracks are extended and the door frame area is clear.

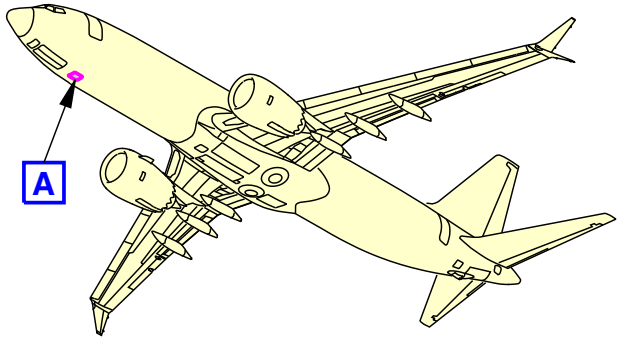
Pull the door out of the fully open detent and then restrain it as gravity causes it to slide down the tracks. When the door gets to the lower detent, you can release it.

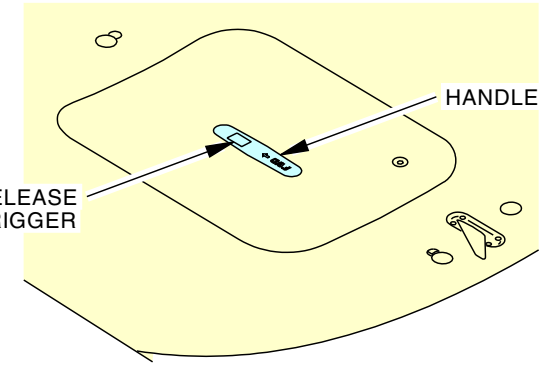
Turn the handle counterclockwise to retract the latch pins. If you do not do this, the door will not seat in the door frame.

Pull the handle to the left and the door will come out of the partially open detent. Then it slides down into the door frame.

Turn the handle clockwise to latch the door. Then push the door handle back into its recess.

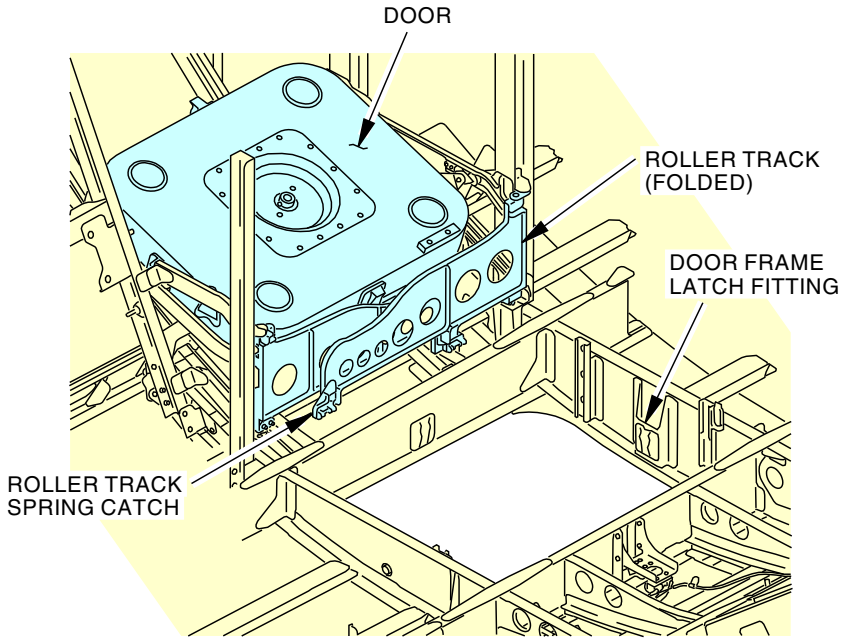
## DOORS - SERVICE - ELECTRONIC EQUIPMENT COMPARTMENT EXTERNAL ACCESS DOOR - OPERATION




**EE COMPARTMENT EXTERNAL ACCESS DOOR**
**(EXTERIOR VIEW - CLOSED)**

**A**




**EE COMPARTMENT EXTERNAL ACCESS DOOR**
**(INTERIOR VIEW - OPEN/ROLLER TRACKS FOLDED)**
**(EXAMPLE)**

**A**

2370505 S00061521855_V2

DOORS - SERVICE - ELECTRONIC EQUIPMENT COMPARTMENT EXTERNAL ACCESS DOOR - OPERATION

## DOORS - SERVICE - AIR CONDITIONING ACCESS DOORS

### Purpose

The air conditioning access doors give access to the air conditioning pack compartments.

### Location

The air conditioning access doors are part of the wing to body fairing under the airplane wings.

### General Description

There are two air conditioning pack compartments and each has an access doors. The air conditioning pack compartments are unpressurized. The access door is the same size as the A/C pack compartment.

The doors have hinges on the inboard edge. The hinges connect the door to keel beam structure.

The doors latch with heavy duty, flush-mount latches. The latches secure the door in the closed position and permit quick access with their push-button trigger release. The latches are a fail-safe design. Failure of the trigger return mechanism do not cause the latch to open. When the latch is secure (closed), the outer surface is similar in color to the adjacent structure. The other surfaces of the latch are a bright red fluorescent color. This permits rapid visual detection of an unsecure (open) latch.

A scupper drain on the door drains the water separator if the ram air spray line from the water separator freezes or clogs.

### Door Structure

The doors are composite construction.

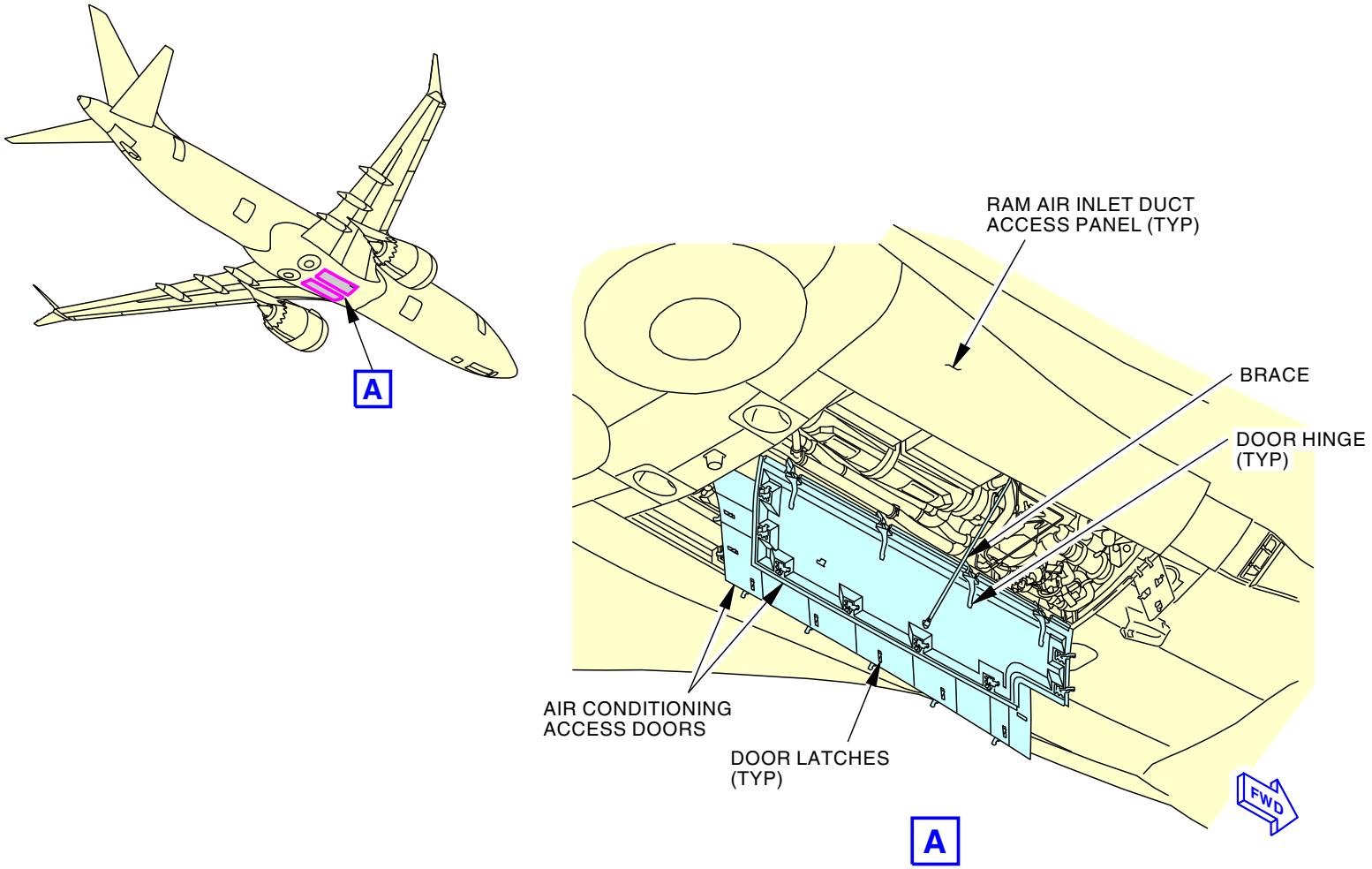
### Operation

You open and close the air conditioning access doors manually. To release the latches, apply moderate thumb pressure to the latch trigger (marked PUSH). Manually restrain the door from free fall as you release the latches. When the door is unlatched, ease it down and secure it in the open position. The door has a brace that supports it in the open position. Pull the brace from a catch on the door. Then connect the brace to the support bracket in the air conditioning pack compartment. Return the brace to the stowed position before you close the door.

### Training Information Point

The air conditioning access doors do not give access to the ram air inlet ducts. The ram air inlet ducts access is through panels outboard of the air conditioning access doors.

## DOORS - SERVICE - AIR CONDITIONING ACCESS DOORS

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DOORS - SERVICE - AIR CONDITIONING ACCESS DOORS

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## DOORS - SERVICE - AUXILIARY POWER UNIT COWL DOOR

### Purpose

The APU access door gives access to the APU and its accessories.

### Location

The APU access door is part of the lower surface of the fuselage. It is under the horizontal stabilizer.

### General Description

The APU access door has hinges on the right side. Three latches on the left side hold the door closed. The door swings downward as it opens.

The APU access door has these parts:

- Door frame and structure
- Hinges
- Latches
- Door support rods
- Lower APU fire detector element.
- Fire resistant liner and insulation
- Fluid drain system.

### Door Frame and Structure

The door frame and structure is aluminum alloy extrusions and clad aluminum alloy sheet. The door does not hold pressure.

### Hinges

Two hinges give the door a pivot axis. You remove the hinge pins to remove the door.

### Latches

Three push-button latches hold the door closed. Moderate pressure on the push-button trigger will cause the latch to open. They are a fail-safe design. Failure of the trigger return mechanism will not cause the latch to open.

When the latch is secure, the outer surface is similar in color to adjacent structure. The other surfaces of the latch are a bright red fluorescent color. This allows rapid visual detection of an unsecure latch.

### Door Support Rods

Door support rods hold the door in the open position. You deploy and stow the support rods manually.

### Fluid Drain System

A fluid drain system drains fluids from the APU compartment. Fluid collects in drain cups and flows in drain lines to the drain mast. The fluids then drain overboard through the mast.

### Lower APU Fire Detection Element

The lower APU fire detector element is on the inner door liner.

### Fire Resistant Liner and Insulation

The inner surface of the door is fire resistant. The inside surface is covered with an insulating blanket and a titanium fire wall liner.

### Operation

To open the APU access door, do these steps:

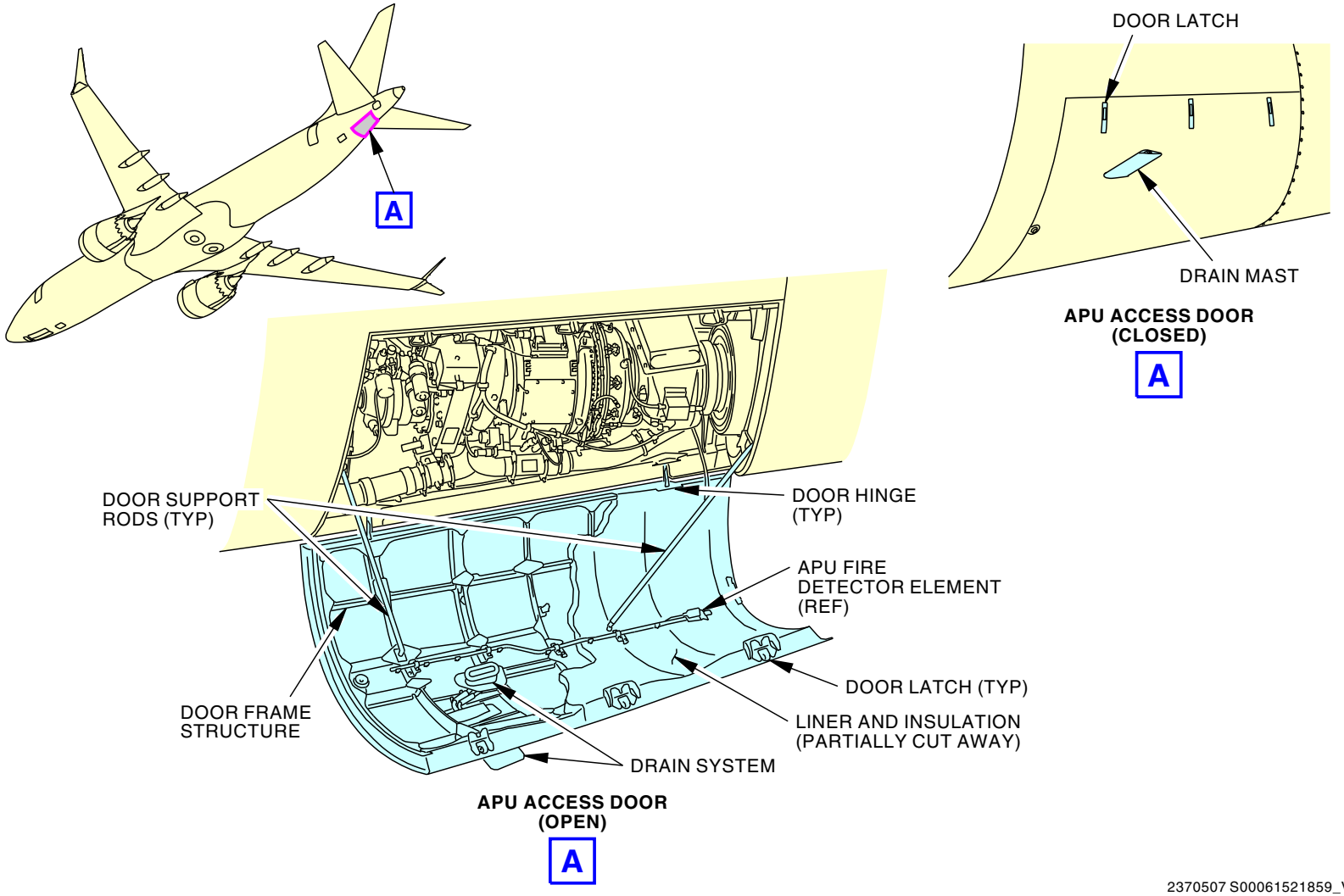
- Push the latch trigger buttons to open the latches. This causes the latches to release and the latch handles to come out of fair with the door skin. This disengages the latch hooks and their door frame fittings. Hold the door while you pull on the latch handles.
- Lower the door manually to the open position.
- Secure the door in the open position with the door support rods.

To close the door, do these steps:

- Return the door support rods to their stowed position.
- Move the door to the closed position.

- Use the latch handles to mate the latch hooks with their door frame fittings.
- Push the latch handles to fair with the door skin. This secures the latches. Only hand pressure is required to close the latches.

## DOORS - SERVICE - AUXILIARY POWER UNIT COWL DOOR

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DOORS - SERVICE - AUXILLIARY POWER UNIT COWL DOOR

## DOORS - SERVICE - REFUELING STATION ACCESS DOOR

### Purpose

The refueling station access door does these things:

- Gives access to the wing pressure fueling manifold and the P15 fueling panel
- Enables the P15 fueling panel controls and indications
- Controls the refueling station access door flood lights.

### Location

The refueling station access door is on the leading edge of the right wing, outboard of the engine.

### General Description

The refueling station access door hinges on its forward edge. It is held closed by four push-button latches on its aft edge. It swings downward and is held in the fully open position by a latching telescopic rod. You must release the catch on the rod before you close the door.

See the the fuel chapter for more information on fueling indication and control. (CHAPTER 28)

### Operational Displays

When the refueling station access door opens, the flood lights on the door come on.

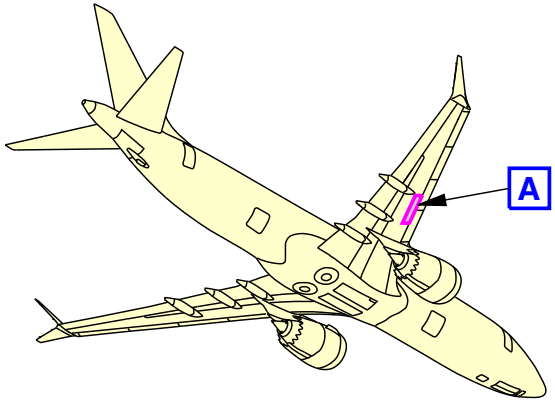
When it is open, the refueling station access door enables the fuel quantity control switches and indications.

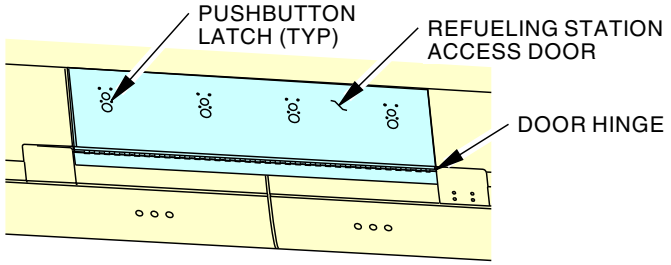
### Training Information Point

The grounding jack is near the pressure refueling receptacle. The service interphone jack is near the door hold open rod. The two jacks are similar. Do not use the interphone jack as a grounding device.

Make sure the refueling station access door is closed and secure before flight. Damage to equipment can occur if the door is open.

## DOORS - SERVICE - REFUELING STATION ACCESS DOOR




**REFUELING STATION ACCESS DOOR (CLOSED)**

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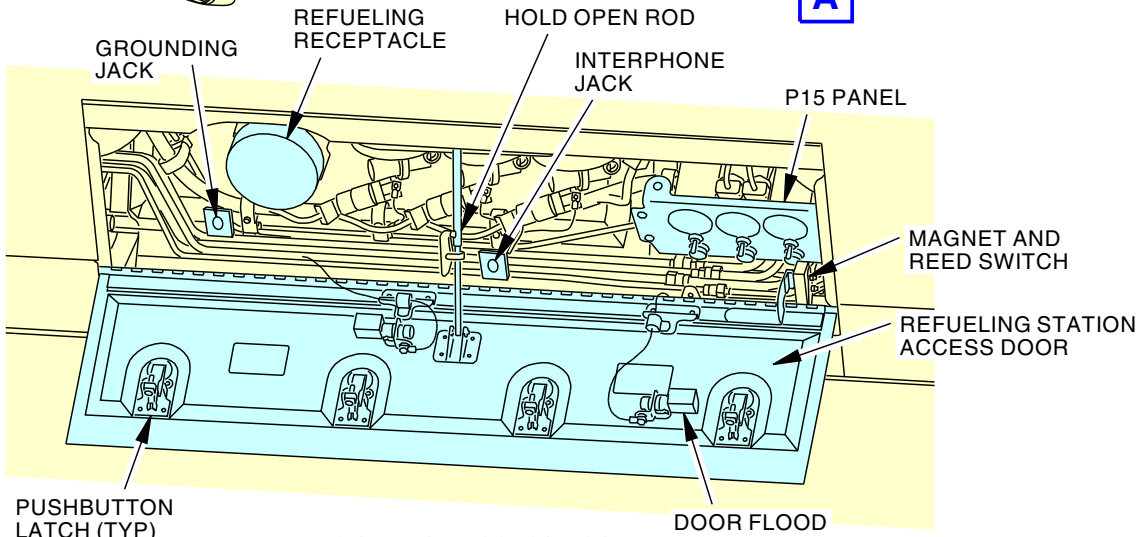


**REFUELING STATION ACCESS DOOR (OPEN)**

A

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## DOORS - SERVICE - RAM AIR ACCESS PANELS

### Purpose

The ram air access panels give access to the air conditioning ram air ducts.

### Location

The ram air access panels are part of the wing-to-body fairing under the airplane wings.

### General Description

There are two ram air systems. Each has an access panel. The ram air duct compartments are unpressurized.

### Door Structure

The panels are composite construction.

### Operation

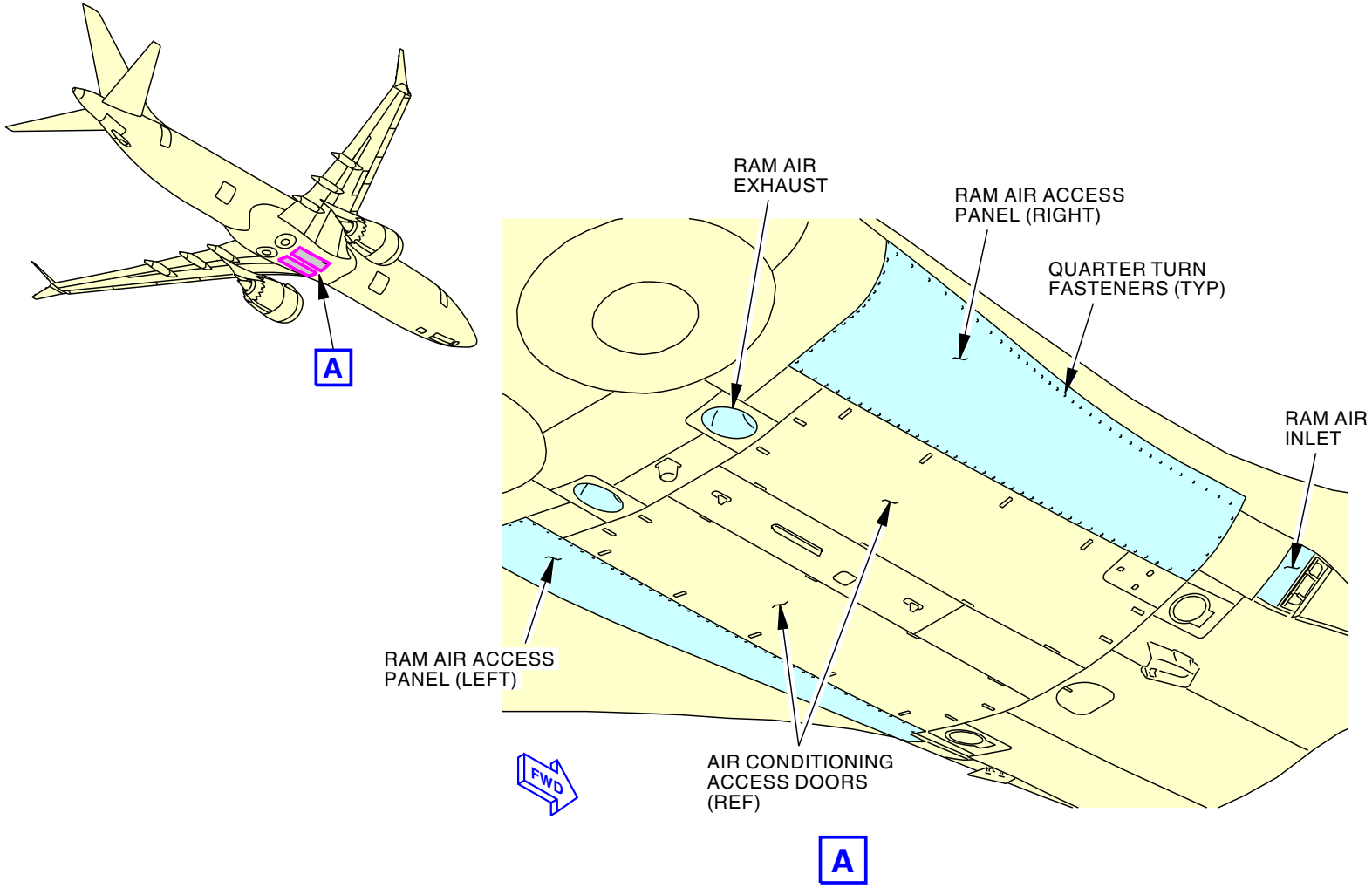
To open the ram air access panels, you remove them. Restrain the panel as you release the quarter turn fasteners.

### Training Information Point

You must remove the ram air access panels to get access to the ram air inlet duct. Access panels on the ram air inlet duct let you clear debris ingested by the ram air system. Ram air debris inhibits the performance of the ram air system and can cause pack trip offs.

The ram air access panels do not give access to the air conditioning pack components. You get access to the air conditioning packs through doors inboard of the ram air access doors.

## DOORS - SERVICE - RAM AIR ACCESS PANELS

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DOORS - SERVICE - RAM AIR ACCESS PANELS

# DOORS - SERVICE - HIGH PRESSURE CONNECTOR ACCESS DOOR

## Purpose

The high pressure connector access door gives access to the pneumatic ground air connector check valve.

## Location

The high pressure connector access door is on the forward, outboard corner of the right air conditioning access door.

## General Description

The high pressure connector access door has hinges on its forward edge and has three pushbutton latches.

The latches hold the door in the closed position and permit quick access with their push-button trigger release. The latches are a fail-safe design. Failure of the trigger return mechanism does not cause the latch to open.

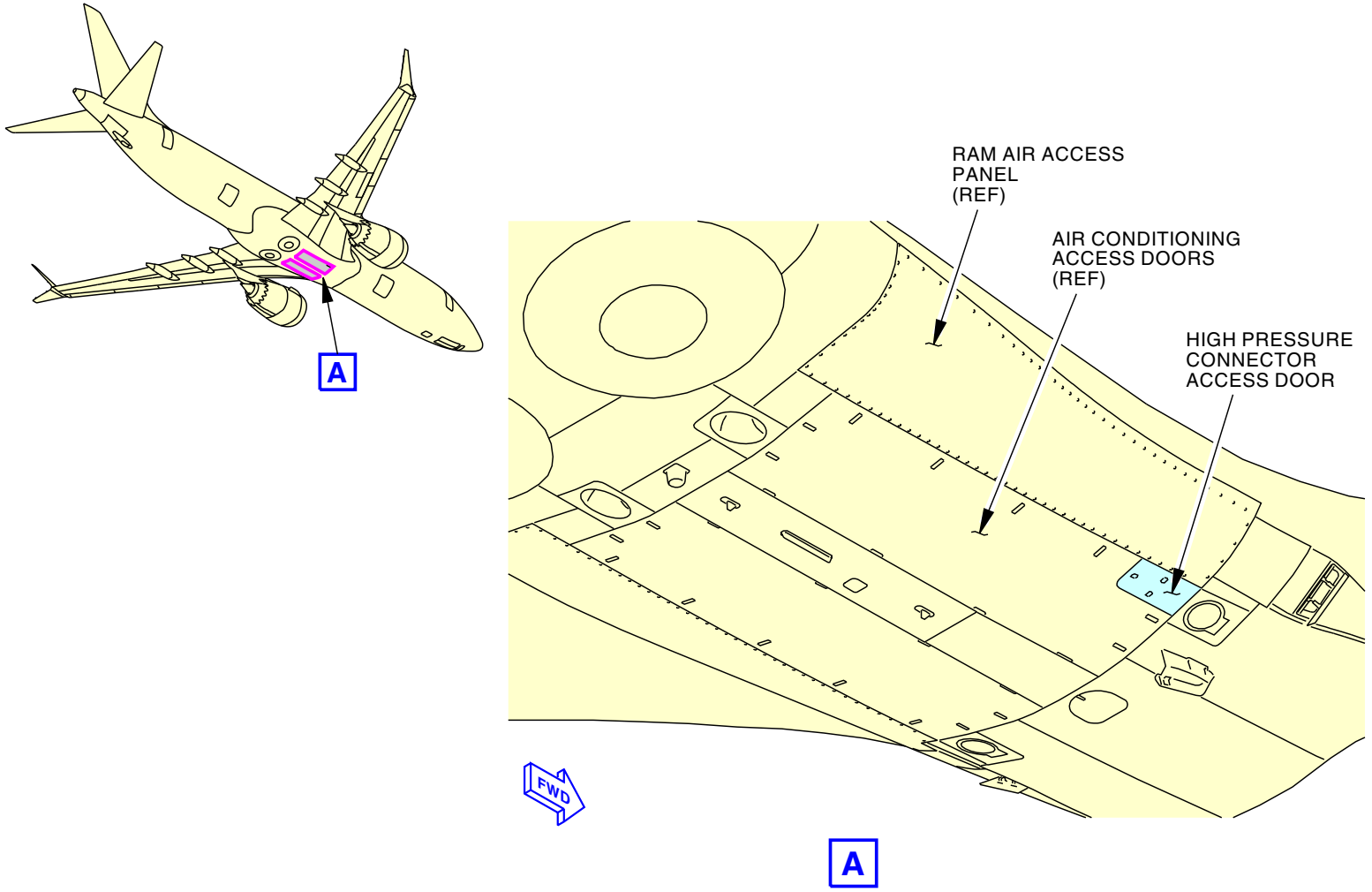
## Door Structure

The door is composite construction.

## Operation

To open the the high pressure connector access door, push the three latch release triggers. Only moderate finger pressure is necessary to open and close the latches.

## DOORS - SERVICE - HIGH PRESSURE CONNECTOR ACCESS DOOR

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DOORS - SERVICE - HIGH PRESSURE CONNECTOR ACCESS DOOR

## DOORS - SERVICE - HYDRAULIC BRAKE ACCUMULATOR ACCESS DOOR

### Purpose

The hydraulic brake accumulator access door gives access to these components:

- The hydraulic system brake accumulator
- Standby hydraulic pump components.

### Location

The hydraulic brake accumulator access door is part of the wing to body fairing. It is aft of the right main landing gear wheel well.

### General Description

The hydraulic brake accumulator access door is a composite structure.

The door has these parts:

- Hold open rod
- Ventilation louvres
- Latches
- Hinges.

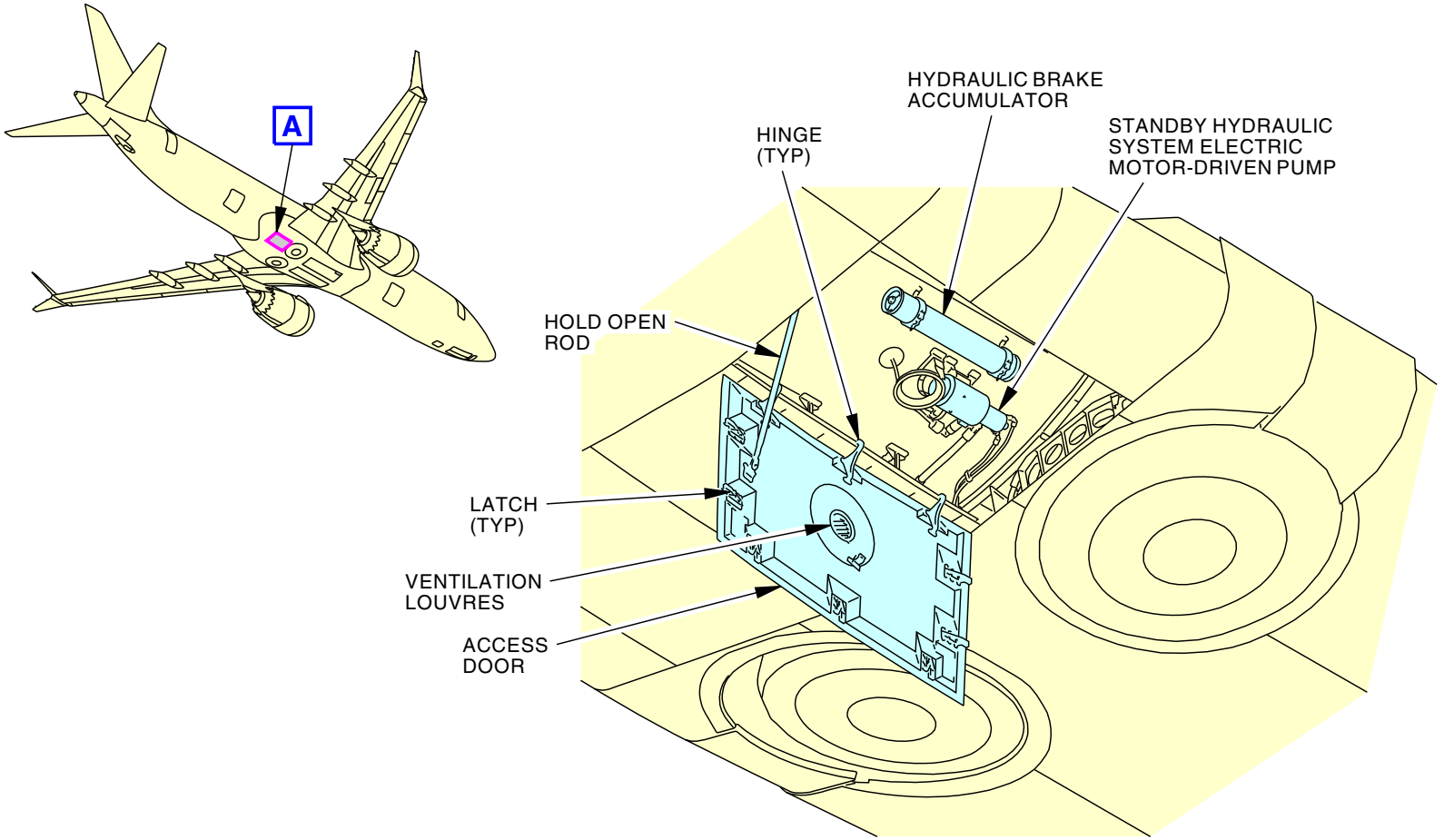
Heavy duty, flush-mount latches hold the door closed. The latches secure the door in the closed position and permit quick access with their push-button trigger releases. When the latch is secure (closed), the outer surface is similar in color to the adjacent structure. The other surfaces of the latch are a bright red fluorescent color. This allows fast visual detection of an unsecured (open) latch.

### Operation

You open and close the door manually. To release the latches, apply moderate thumb pressure to the latch trigger. Manually restrain the door from free fall as you release the latches.

Use the hold open rod to secure the door in the open position.

## DOORS - SERVICE - HYDRAULIC BRAKE ACCUMULATOR ACCESS DOOR




**HYDRAULIC BRAKE ACCUMULATOR ACCESS DOOR**

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DOORS - SERVICE - HYDRAULIC BRAKE ACCUMULATOR ACCESS DOOR

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## DOORS - SERVICE - GALLEY SERVICE DOORS

### Purpose

There are two galley service doors on the airplane, forward and aft. The doors give access to the airplane passenger cabin.

### Location

The doors are on the right side of the upper fuselage, across from the passenger entry doors.

### General Description

The door is a plug-type door. The door has these parts:

- Center door assembly
- Upper gate
- Lower gate.

A liner covers the door interior surface.

The center door assembly has hard points at the bottom for the emergency escape slide installation.

The center door assembly has a window.

### Door Control Mechanisms

You can open and close the door from the interior or exterior of the airplane. Operate the door manually. Unlatch the door with the central control handle. Then swing the door to the fully open position with the offset assist handles.

When you turn the handle in the OPEN direction, internal mechanisms do these things:

- Disengage the door roller latches
- Fold the door gates inward
- Tilt the door hinge edge inward to the cocked position.

Then push the door through the door frame until it is fully open. Use the two offset assist handles for this operation.

A lock mechanism in the upper hinge locks the door in the fully open position.

To close the door, first release the hinge lock and then do the open operations in reverse order.

A guide pin on the door and a guide pin track on the door frame center the door in the door frame as it closes.

### Door Support

When the airplane is unpressurized, the hinges support the door.

When the airplane is pressurized, cabin pressure pushes the door slightly outboard. This causes these things to occur:

- The door seals compress
- The door stop pins contact frame stop fittings. This transmits the door pressure loads to the door frame structure
- The door latches are unloaded.

### Door Seals

The door has these seals:

- Edge seals (flap type)
- Gate hinge seals (diaphragm type).

### Door Drains

The door structure has internal drain paths. The door sections drain into the door frame threshold. The door threshold drains overboard through bladders in the lower fuselage.

### Door Warning

The galley service doors have an interface with the door warning system. There is a proximity switch assembly on each galley door frame adjacent to an upper latch roller track. The switch senses the position of its associated door latch roller. When the door is latched, it causes the warning light, on the P5 forward overhead panel, to go off.

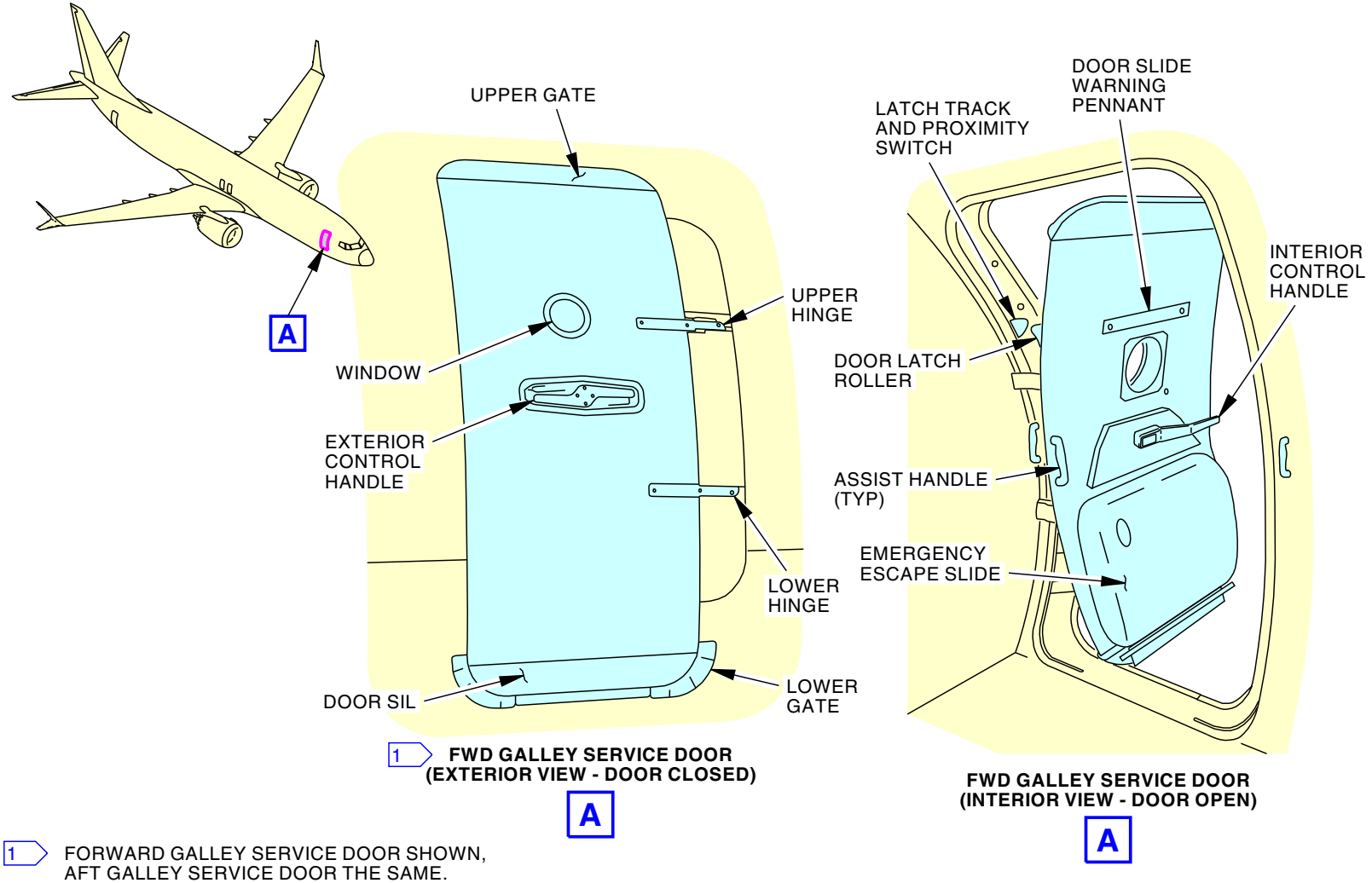
An orange pennant is on the door liner above the window. Manually secure it across the window when the door escape slide is armed. This is a visual indication to someone outside the airplane that the door slide is armed.

The caution placard outside the door always calls the red color of the flag regardless of the color of the warning pennant.

**Training Information Point**

See PASSENGER/CREW section in this chapter for more information on the operation of the galley service door (SECTION 52-10).

## DOORS - SERVICE - GALLEY SERVICE DOORS




1 FORWARD GALLEY SERVICE DOOR SHOWN, AFT GALLEY SERVICE DOOR THE SAME.

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DOORS - SERVICE - GALLEY SERVICE DOORS

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## DOORS - CONTROL CABIN DOOR - INTRODUCTION

### Door System

The flight compartment door provides selective entry to the flight compartment.

Access is provided by the use of a Keypad Access System which consists of a numeric keypad outside the flight compartment area and a chime module and electric strike that is not accessible from outside the flight compartment.

The chime module provides an audible alert to the flight crew that the correct code has been entered into the keypad. There is also an indicator light in the flight compartment and an LED on the keypad that indicates that the correct code has been entered.

The flight crew has a 3-position switch by which they can open the door lock, close the door lock, or permanently lock the door for a specified amount of time to prevent access by anyone regardless if the correct code is entered into the keypad.

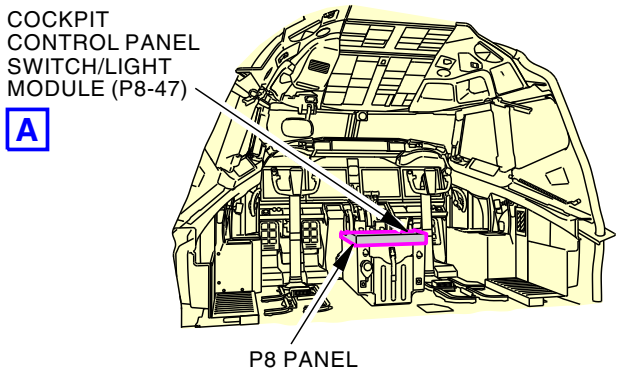
The door has decompression panels that will open if there is a rapid decompression in the flight compartment.

The door also has a deadbolt so you can lock the door on the ground while the airplane is parked.

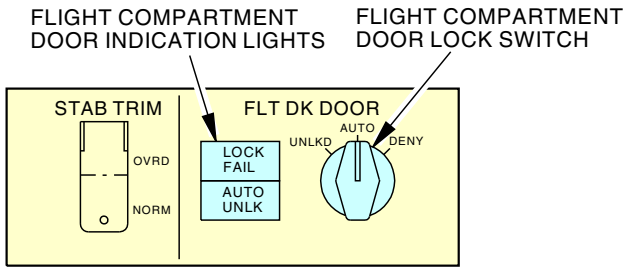
All access to system door control/wiring is protected such that they cannot be reached from outside the flight deck area, even after forced removal of the numeric keypad.

The door latch solenoid controls the electric strike.

## DOORS - CONTROL CABIN DOOR - INTRODUCTION

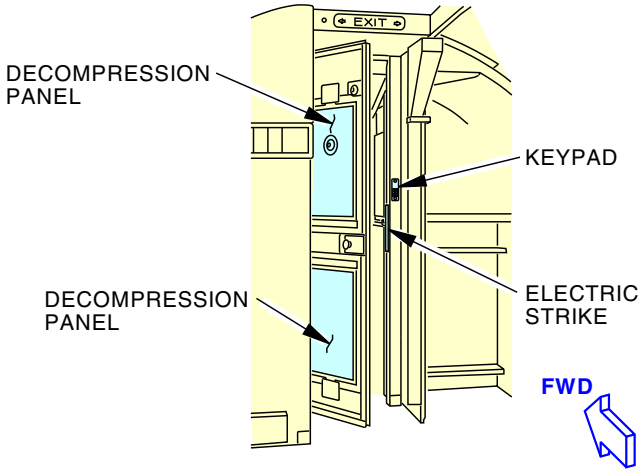



**FLIGHT COMPARTMENT**

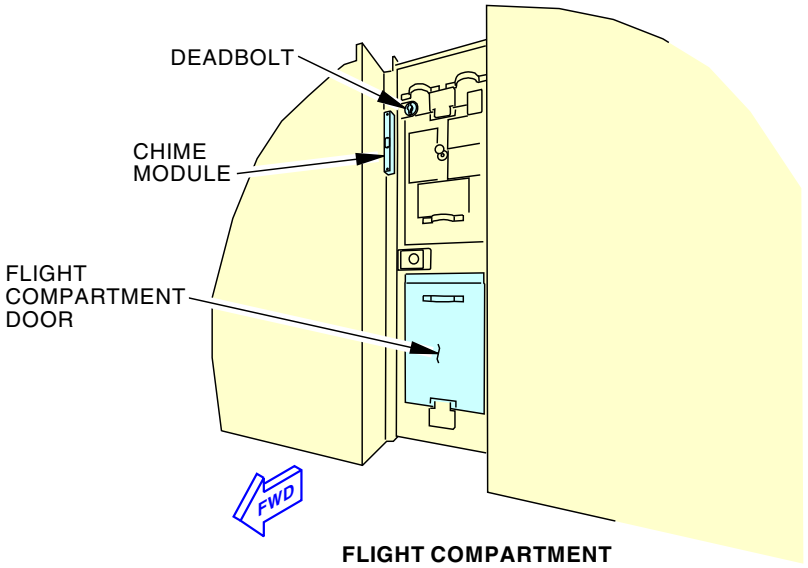



**COCKPIT CONTROL PANEL SWITCH/LIGHT MODULE**

A




**FLIGHT COMPARTMENT DOOR**




**FLIGHT COMPARTMENT**

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DOORS - CONTROL CABIN DOOR - INTRODUCTION

## FIXED INTERIOR DOORS - CONTROL CABIN DOOR - DOOR AND ELECTRIC STRIKE

### Flight Compartment Door

The flight compartment door consists of two decompression blowout panels, a lock assembly, and a deadbolt.

The door opens about a piano hinge mounted on the flight compartment partition. The hinge is attached to the partition with screws.

An Observ-O-Scope in the door allows flight crew members to see into the passenger compartment.

The door has blowout panels installed that will open forward in the event of a decompression in the control cabin.

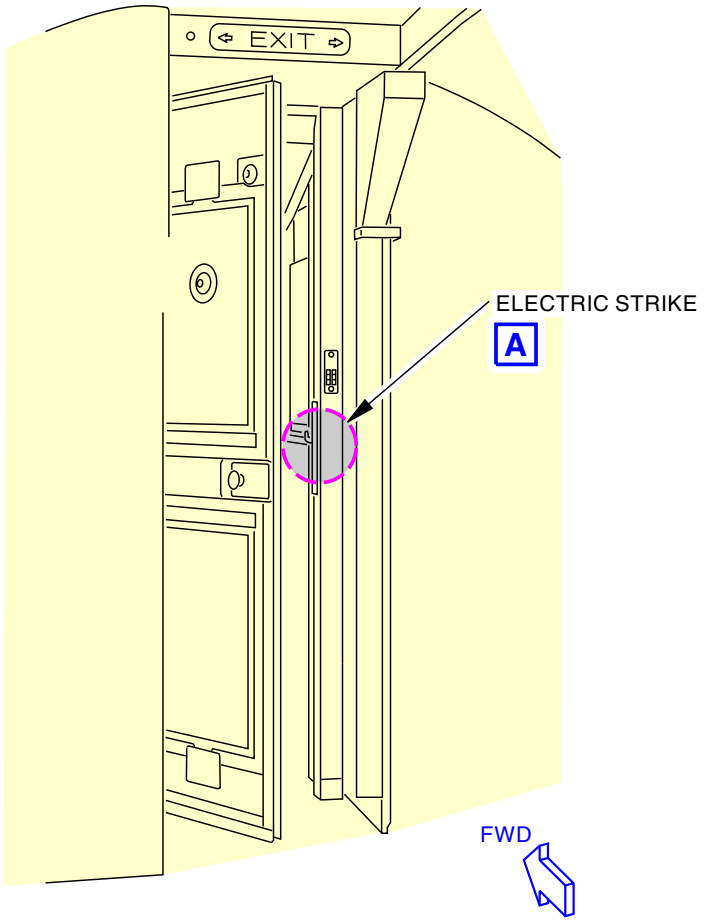
### Electric Strike

The electric strike consists of a solenoid, a spring mounted strike, and a pin which prevents the strike from rotating.

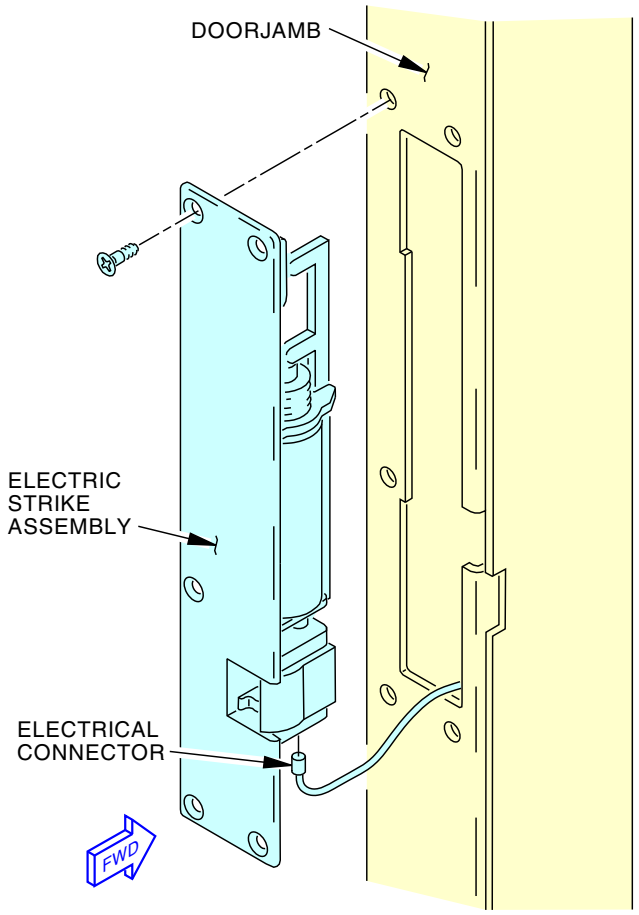
The solenoid acts to lock the flight compartment door. When 28VDC is applied to the solenoid it closes, extending a pin to prevent the strike from rotating. This prevents the door from being opened from the aft (passenger) side.

When the solenoid is de-energized, the pin retracts and allows the strike to rotate when sufficient force is applied to the door to overcome the spring pressure.

## FIXED INTERIOR DOORS - CONTROL CABIN DOOR - DOOR AND ELECTRIC STRIKE




FLIGHT COMPARTMENT DOOR




ELECTRIC STRIKE

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## DOORS - CONTROL CABIN DOOR - DOOR AND ELECTRIC STRIKE

## DOORS - CONTROL CABIN DOOR - KEYPAD

**Keypad**

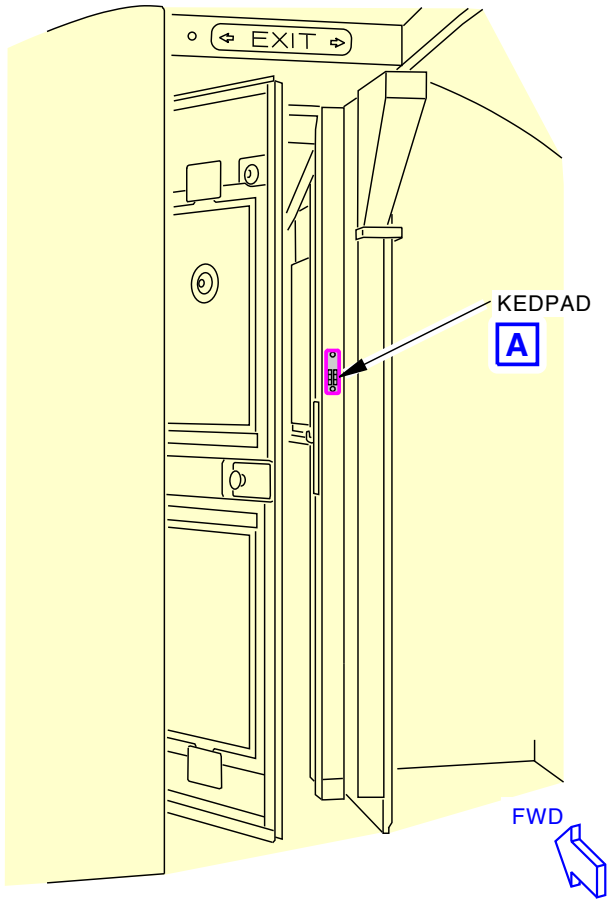
The keypad is mounted on the passenger side of the right hand door post.

The keypad contains numbers one through five, an ENTER button, and 3 LED's.

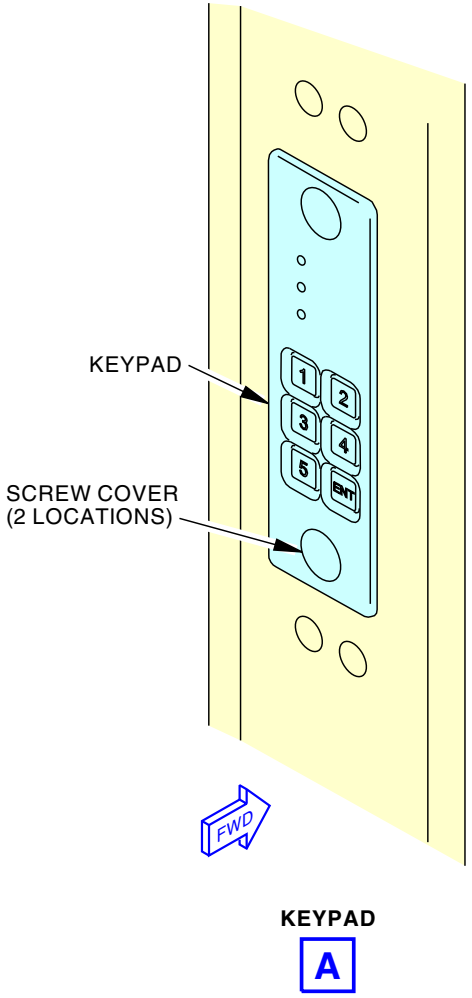
The numbers are used by the crew to enter a preprogrammed code to allow entry to the flight compartment.

The LED's are amber, red, and green, and indicate whether a correct code has been entered, and whether the door strike in in the locked or unlocked position, respectively.

## DOORS - CONTROL CABIN DOOR - KEYPAD




FLIGHT COMPARTMENT DOOR




KEYPAD

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DOORS - CONTROL CABIN DOOR - KEYPAD

## DOORS - CONTROL CABIN DOOR - CHIME MODULE

### Flight Compartment Door

The chime module is mounted on the right hand door post inside the flight compartment.

The chime module controls the functions of the access system.

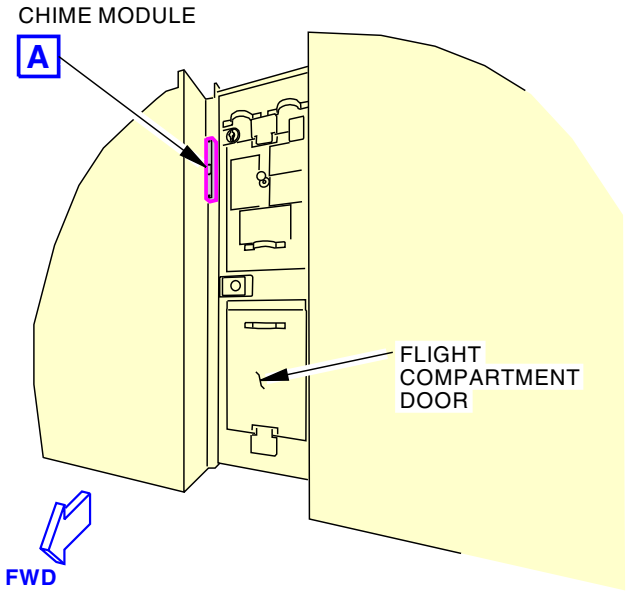
A removable cover on the chime module allows access to two switches that must be pressed to program the various time delays and items of the access system.

The programmable items are the Access Time Delay, the Deny Time Delay, Time of Continuous Chime, the Doorbell enable, and Access Code.

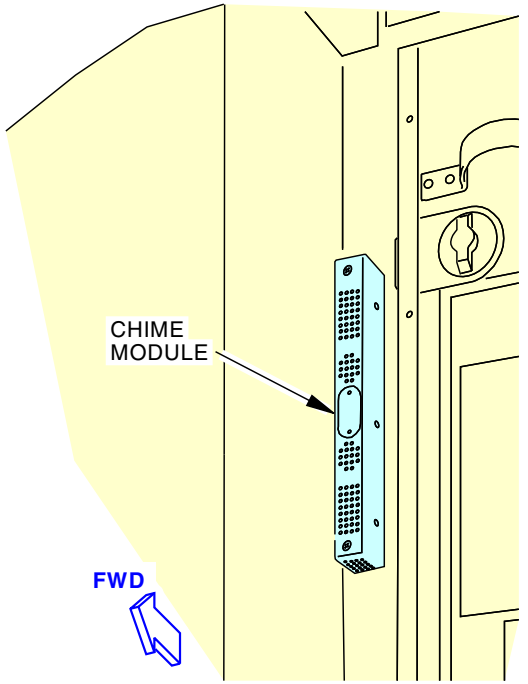
A guarded power cut off switch is installed on the chime module to allow normal maintenance and preflight access to the flight compartment when the airplane has electrical power.

When the switch is in the Up (guard extended) position, power is removed from the chime module and strike solenoid, which unlocks the door.

## DOORS - CONTROL CABIN DOOR - CHIME MODULE




FLIGHT COMPARTMENT




CHIME MODULE

A

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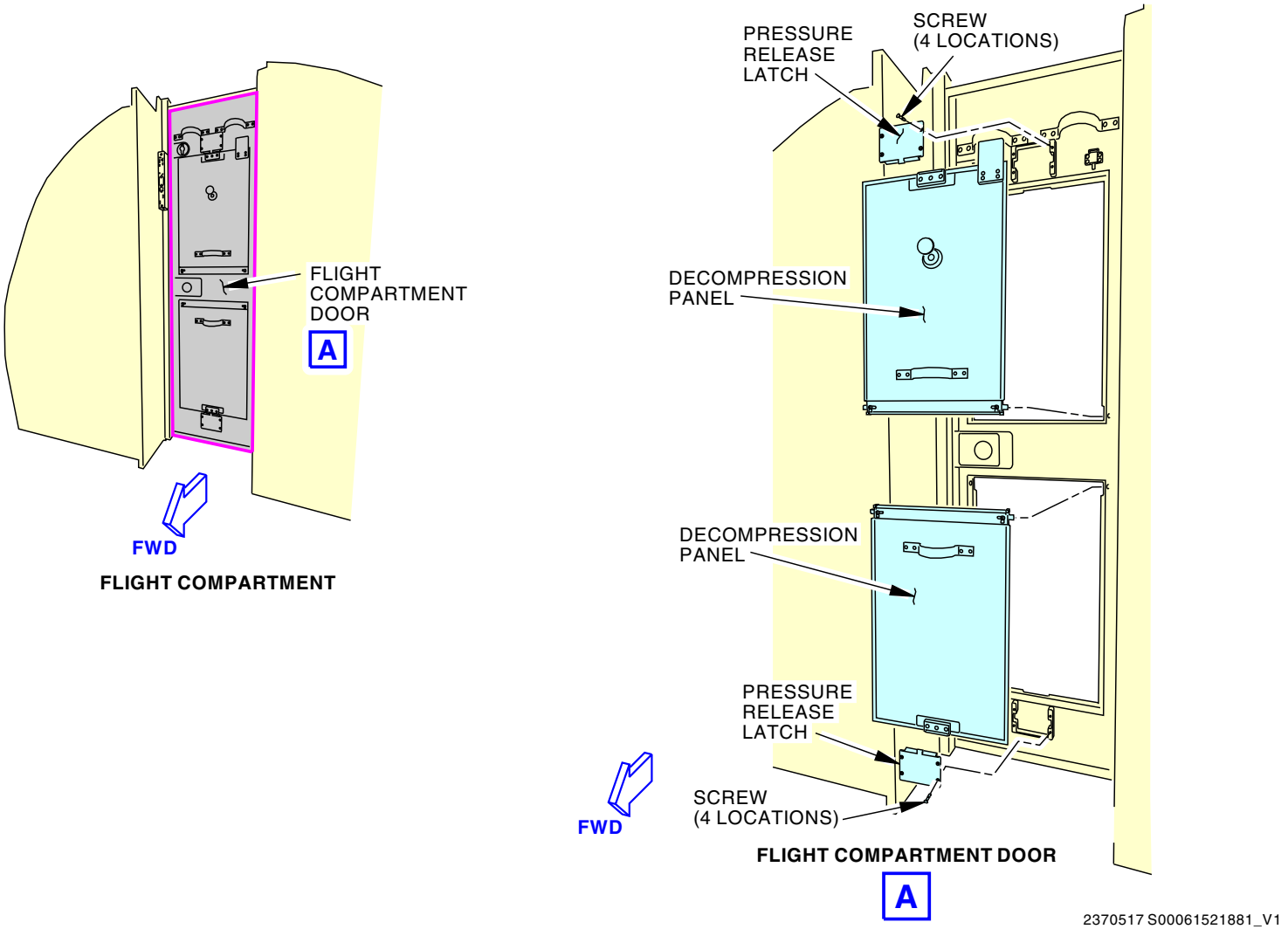
DOORS - CONTROL CABIN DOOR - CHIME MODULE

## Control Cabin Door Decompression Panels

The door has blowout panels that will open if there is a rapid decompression in the flight compartment. A rapid decompression will cause a sudden change in pressure between the flight compartment and the passenger cabin compartment. For each decompression panel, one edge is attached to the flight compartment door assembly with retractable bolts, while the other edge is secured to the door assembly with a mechanical pressure release latch. The mechanical latches are set to release under a pre-determined pressure, which will cause the decompression panels to open into the flight compartment.

In the case of a rapid decompression in the cabin compartment, the door is able to withstand the pressure difference due to the small area of the flight compartment.

## DOORS - CONTROL CABIN DOOR - DECOMPRESSION PANELS

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DOORS - CONTROL CABIN DOOR - DECOMPRESSION PANELS

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## DOORS - DOOR WARNING SYSTEM - INTRODUCTION

**SIA 001-006 PRE SB 737-32-1555**

### Purpose

The door warning system gives the crew a visual indication when a door is not secure (not closed and latched).

**SIA 007-999; SIA 001-006 POST SB 737-32-1555**

### Purpose

The door warning system gives the crew a visual indication when a door is not secure (not closed and latched), and an aural warning during initial takeoff roll for the emergency exit doors.

**SIA ALL**

### Location

The door warning amber lights are on the door warning annunciator panel on the P5 forward overhead panel.

The MAINT amber light is on the P5 aft overhead panel. Under certain conditions, this light comes on when the emergency exit doors lights come on.

**SIA 007-999; SIA 001-006 POST SB 737-32-1555**

The aural warning is an intermittent horn, same as the takeoff warning.

**SIA ALL**

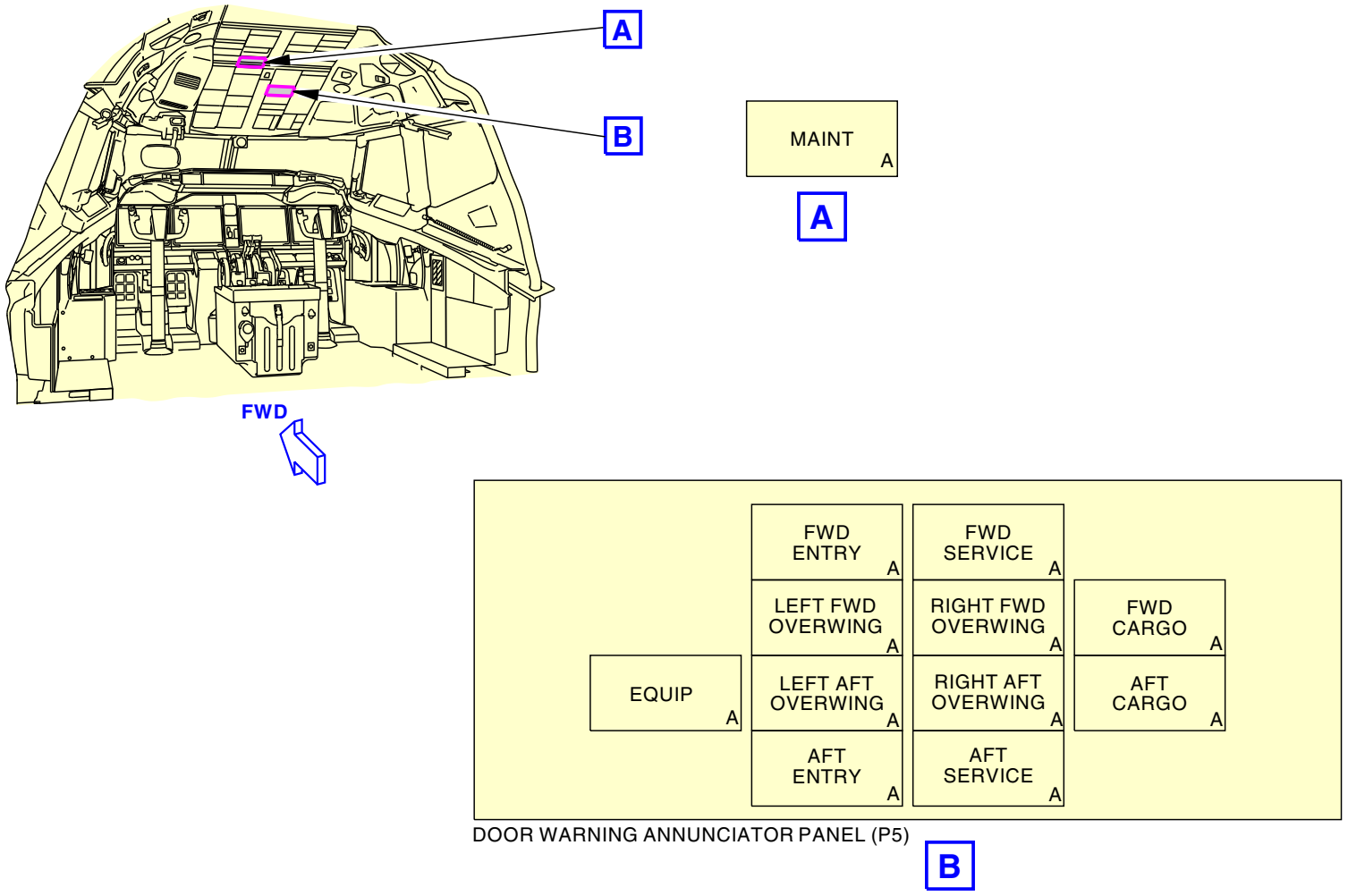
### General Description

These doors have an interface with the door warning system:

- Forward and aft entry doors
- Forward and aft galley service doors
- Emergency exit doors
- Forward and aft cargo doors
- Forward equipment compartment access door
- EE compartment external access door.

The door warning annunciator panel contains indication for the doors when a door is not in the closed and latched position.

## DOORS - DOOR WARNING SYSTEM - INTRODUCTION

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DOORS - DOOR WARNING SYSTEM - INTRODUCTION

## DOORS - DOOR WARNING SYSTEM - FUNCTIONAL DESCRIPTION

### Purpose

The door warning system gives the crew a visual indication when the doors are not secure (not closed and latched). These are the doors described in this section:

- Passenger entry, forward and aft
- Passenger service, forward and aft
- Cargo, forward and aft
- Equipment, forward and EE compartment.

### Functional Description

The door warning lights are controlled by proximity sensors and microswitches in the door area. The proximity sensor is part of a solid state switch circuit. The circuit consists of a sensor, an actuator, and a switch card. The sensor and actuator are on the door.

The circuits for the lights are in the proximity switch electronics unit (PSEU).

The door warning annunciator module contains the amber lights. It is on the P5 forward overhead panel.

### Operation

The sensor senses the proximity or absence of the actuator and provides the signal to the PSEU. The switch card uses this signal for the warning light to come on or go out.

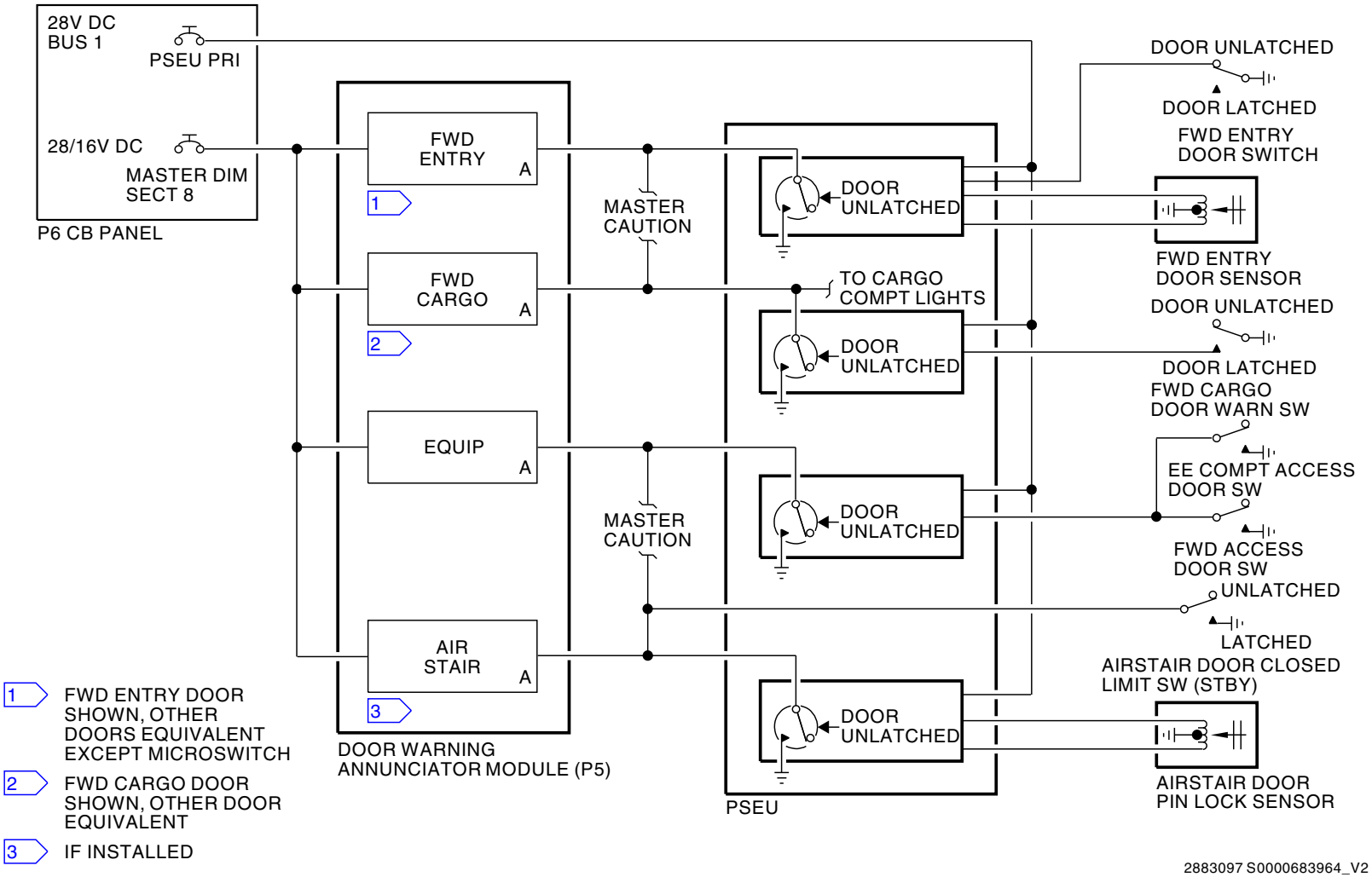
The forward access door and the EE compartment door share the same door warning light. A microswitch is at each access door.

When a warning light comes on, the MASTER CAUTION and DOORS annunciator also come on.

When the cargo door is unlatched, the PSEU enables cargo compartment lights.

See the cargo compartment lights section. (SECTION 33-36)

## DOORS - DOOR WARNING SYSTEM - FUNCTIONAL DESCRIPTION

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DOORS - DOOR WARNING SYSTEM - FUNCTIONAL DESCRIPTION

## DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FLIGHT LOCK LOGIC

### Purpose

The flight lock logic monitors the airplane systems and sends a signal when the emergency exit door should be locked or unlocked.

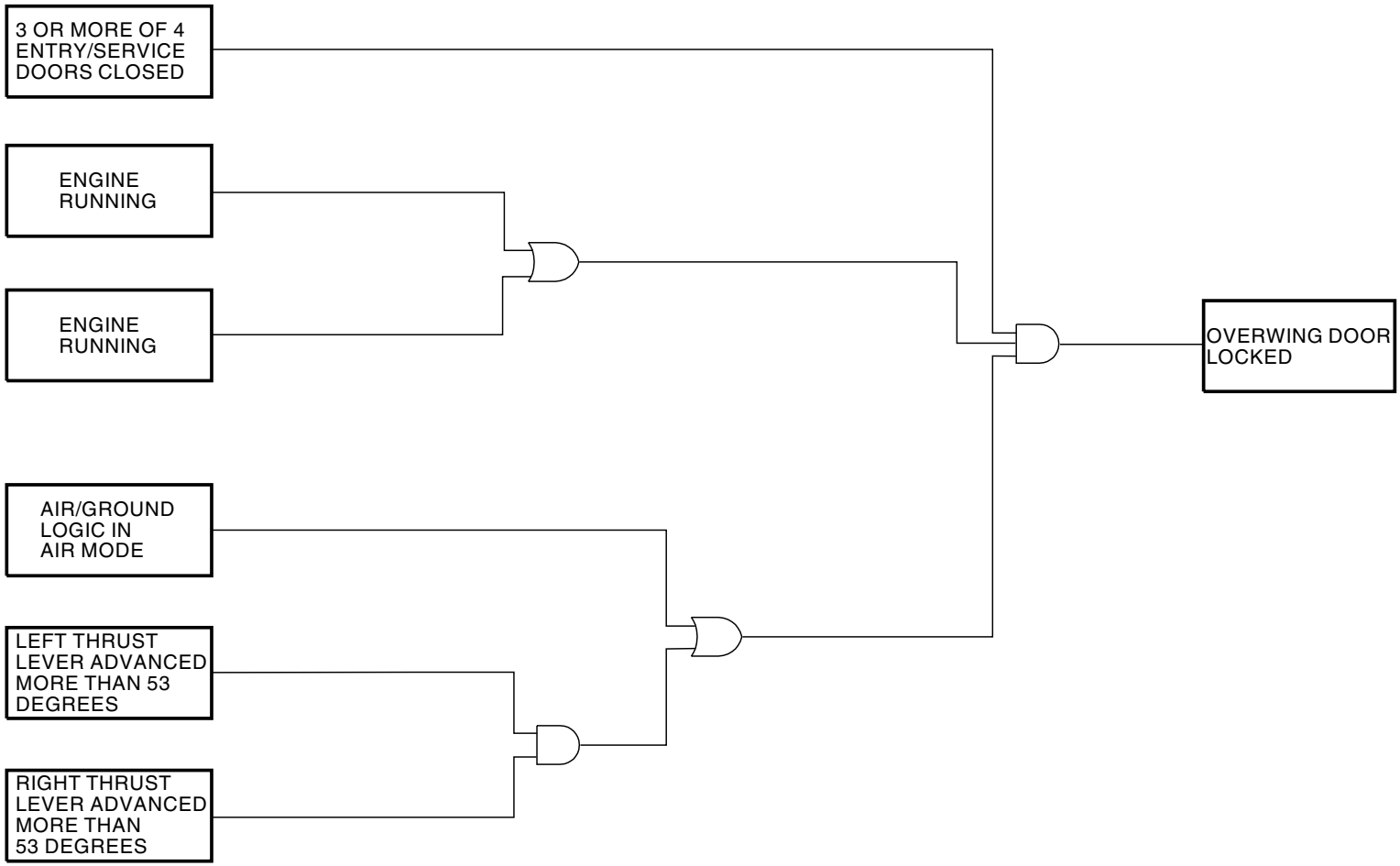
### General Description

All of these conditions cause the emergency exit doors to lock:

- Three or more of the entry/service doors are closed
- Either engine is running
- Air ground logic is in the AIR MODE or both the left and right thrust levers are advanced more than 53 degrees (TRA).

The flight lock logic is a part of the proximity switch electronic unit (PSEU).

## DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FLIGHT LOCK LOGIC

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DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FLIGHT LOCK LOGIC

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## DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FUNCTIONAL DESCRIPTION

### Purpose

The door warning system gives the crew an indication when an emergency exit door is not latched or in an uncommanded condition (locked or unlocked).

These are the doors for which indication is provided:

- Overwing Exit Door.

### Functional Description

There are two door closed switches on the frame of each overwing exit door. One switch is on the forward portion of the frame, the other switch is on the aft portion of the frame. When one or the other of these switches is in a NOT CLOSED position, an indication is provided to the flight crew.

These are the flight crew indications when a door closed switch is in the NOT CLOSED position:

- The related overwing light on the P5-20 door warning annunciator module comes on
- The MASTER CAUTION and DOORS annunciator lights come on.

When the airplane is on the ground and has not started its takeoff roll, the emergency exit doors should be unlocked. If an emergency exit door is locked when it should be unlocked, indication is provided to the flight crew. These are the indications when an emergency exit door is locked when it should be unlocked:

- The MAINT light on the P5 aft overhead panel comes on (and is not resetable)
- The MASTER CAUTION and OVERHEAD annunciator lights come on
- These indications are inhibited from the first engine start, until 30 seconds after landing.

After the airplane starts its takeoff roll or is in the air, the emergency exit doors should be locked. If an emergency exit door is unlocked when it should be locked, indication is provided to the flight crew. These are the indications when an overwing door is unlocked when it should be locked:

- The related overwing light on the P5-20 door warning annunciator module comes on
- The MASTER CAUTION and DOORS annunciator lights come on.

**SIA 007-999; SIA 001-006 POST SB 737-32-1555**

- The intermittent horn will sound during the initial part of the take off roll.
- The TAKEOFF CONFIG lights will come on along with the horn.

**SIA ALL**

The signal to lock/unlock the emergency exit door comes from the flight lock logic in the Proximity Switch Electronic Unit (PSEU).

**SIA 007-999; SIA 001-006 POST SB 737-32-1555**

When the airplane is on the ground, the throttles moved forward 53 degrees, and the ground speed is less than 40 knots, the flight logic in the PSEU will send a signal to the aural warning module and give the sound of the intermittent horn until the airplane transitions to air. Along with the intermittent horn, the TAKEOFF CONFIG lights will come illuminate on the P1–3 and P2–3 panels. If the aircraft is on the ground, throttles moved forward, and ground speed is greater than 40 KTS, the intermittent horn will not sound and the TAKEOFF CONFIG lights will not illuminate.

**SIA ALL**

When the airplane is on the ground and the thrust levers are less than 53 degrees Thrust Resolver Angle (TRA), the flight lock logic in the PSEU deenergizes the flight lock relay, R742. When R742 is deenergized, the flight lock solenoid is deenergized and the flight lock solenoid switch is in the NOT LOCKED position.

## DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FUNCTIONAL DESCRIPTION

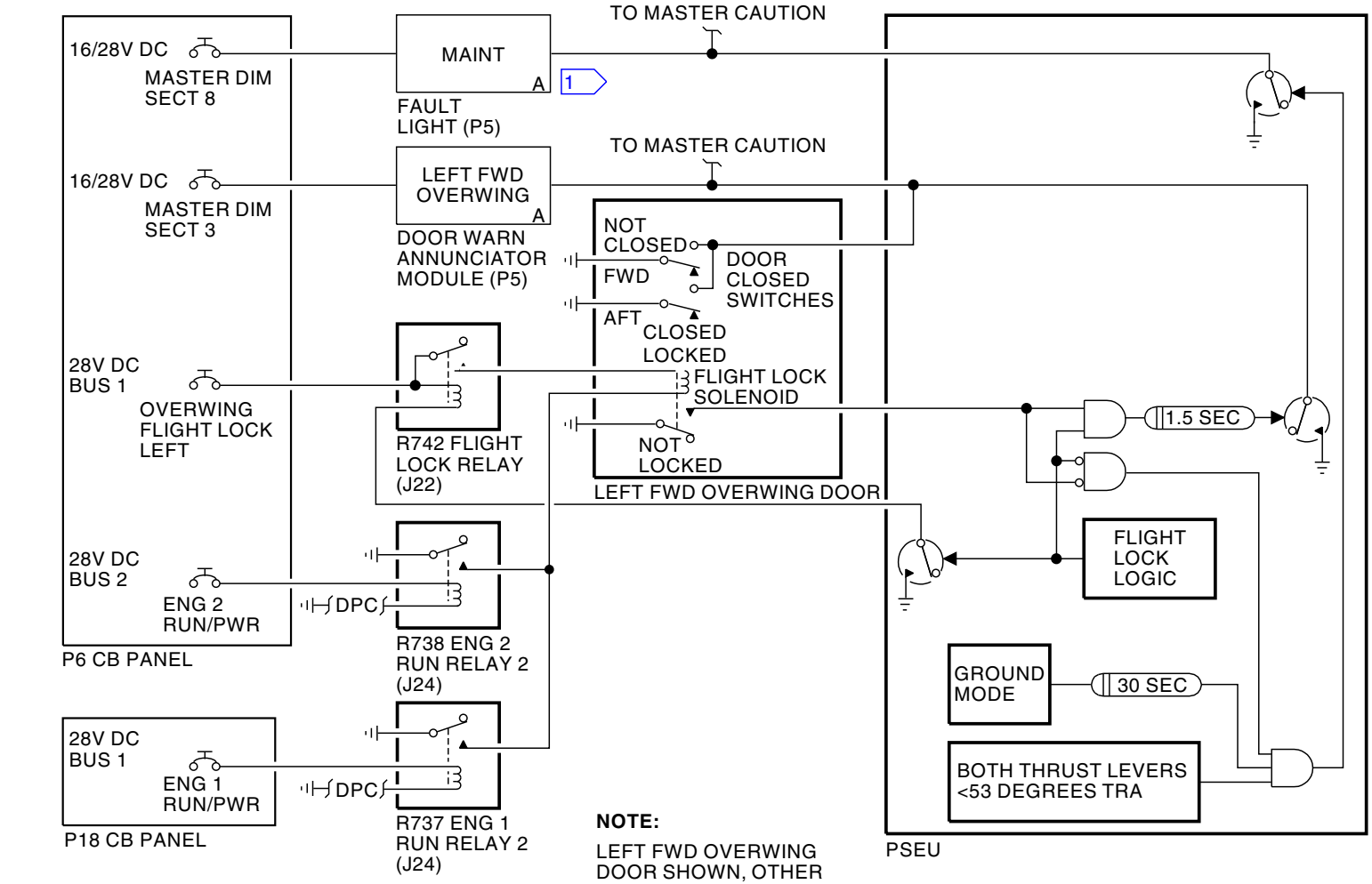
When the airplane starts its take off roll, the flight lock logic energizes the flight lock relay, R742. The flight lock solenoid energizes when the R742 flight lock relay energizes and R737 or R738 engine running relay energizes. When the flight lock solenoid is energized, the flight lock solenoid switch is in the LOCKED position.

The engine running relays, R737 and R738, are energized when the display processing computer (DPC) sends an engine run signal. The DPC sends an engine run signal when all of these conditions occur:

- The engine start lever is in idle
- The Electronic Engine Control (EEC) discrete is set to RUN, or N2 > 50% (if the digital data bus is invalid).

The 1.5 second time delay prevents nuisance indications.

## DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FUNCTIONAL DESCRIPTION

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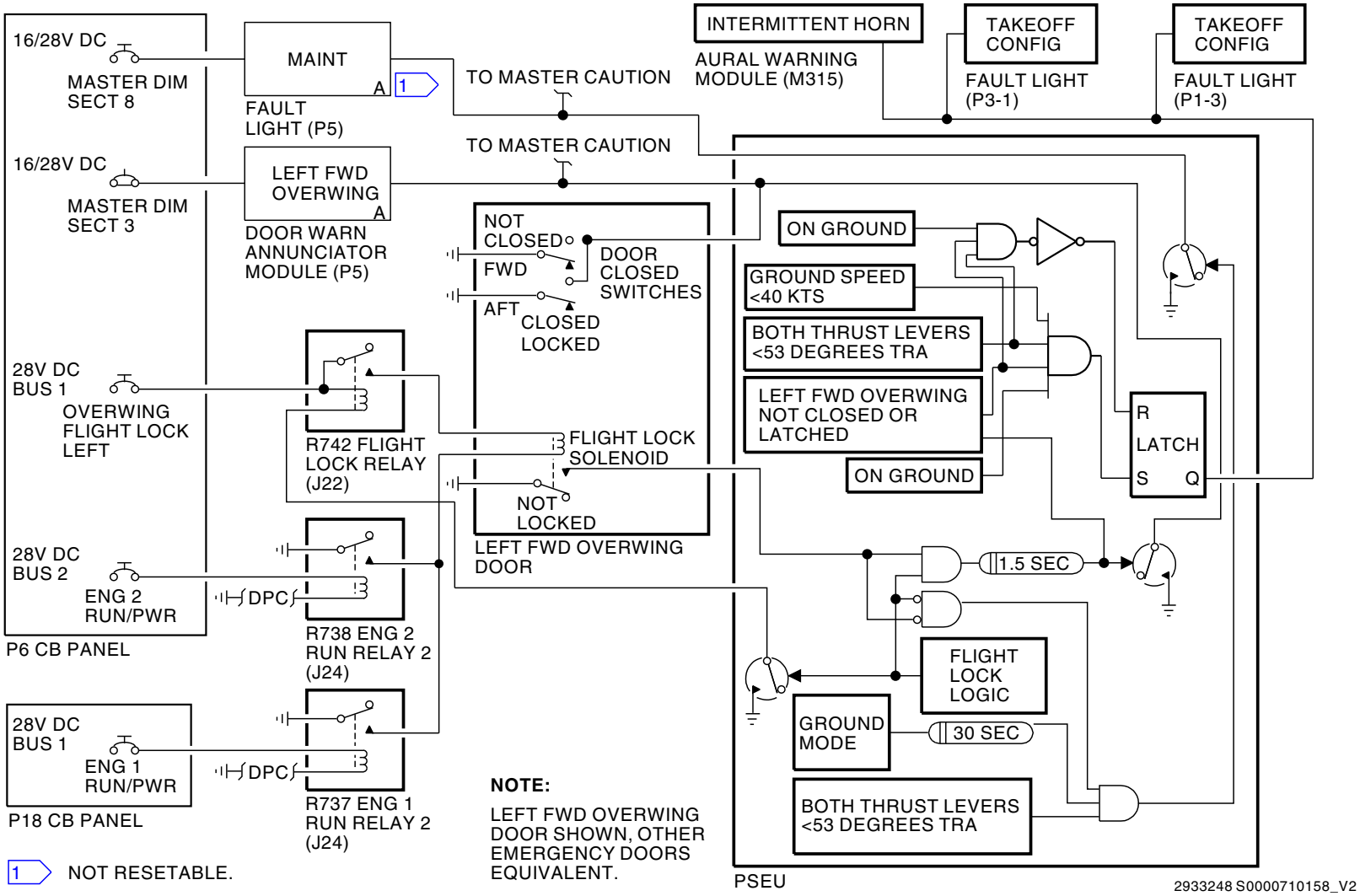
DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FUNCTIONAL DESCRIPTION

## DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FUNCTIONAL DESCRIPTION




DOORS - DOOR WARNING SYSTEM - EMERGENCY EXIT DOOR - FUNCTIONAL DESCRIPTION