Instruction Manual:

Aircraft Door Barrier Nets for Bombardier Q400 and Embraer E170/E190.

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1 Introduction

This document details installation, removal, storage and inspection for Aircraft Door Barrier Nets used specifically on the Bombardier Q400 and Embraer E170/E190 Aircrafts. The door barrier nets are to be fitted to the Aircraft whilst maintenance work is carried-out in Aircraft Hangers. Each barrier door net has been designed to provide a visual fall hazard warning sign to maintenance personnel.

2 Abbreviations

DIL	Drallim Industries Ltd
TBC	To Be Confirmed
EUT	Equipment under test

3 Referenced Documents

All documents latest issue unless stated.

Ref No.	Document Number	Description
[1]	DPS-0061	Product Specification: Aircraft Door Barrier Nets for Bombardier Q400 & Embraer E170/E190

4 Symbol Explanation

Remarks regarding the safety of persons and the barrier door nets are marked by special symbols. These remarks are to be absolutely observed in order to avoid accidents and material damage.

ATTENTION!

- points to a potentially dangerous situation, which can cause minor or slight injuries if it is not avoided.
- points to a potentially dangerous situation, which can cause property damage if it is not avoided.

REMARK!

- Important notice for installation or functioning.

Note: Aircraft Door Barrier Nets are **not** designed OR intended for use as a safety device or as part of a fall arrest system and do **not** provide protection or prevention for personnel from falling off or into unprotected edges or door openings.

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5 Technical Description.

5.1 Bombardier Q400 Barrier Door Nets.

5.1.1 Aircraft Door Barrier Nets are not intended to be used as a Fall arrest device to stop a person falling from the aircraft if they fall against the Net and they do not provide edge protection or toe board functionality.

5.1.2 Six (6) Aircraft Door Barrier Nets are supplied to fit each door on a Bombardier Q400 Aircraft. See figure 1 showing the aircraft layout and door positions. Table 1 details the key, description, and part number for each door.

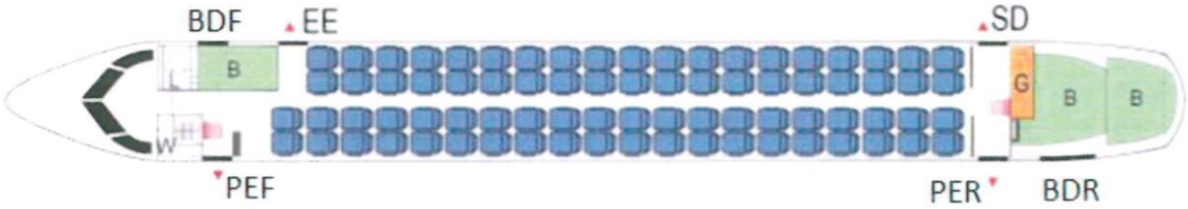


Figure 1

Table 1

BOMBADIER Q400 (237CA29) BARRIER DOOR NETS SET.		
Door Key (refer to Figure 1)	**Door Description**	**Part No**
PEF	Passenger Entry Front Door	243CA29
BDF	Baggage Door Front	244CA29
EE	Emergency Exit Door	246CA29
SD	Service Door	244CA29
PER	Passenger Entry Rear Door	245CA29
BDR	Baggage Door Rear	247CA29

NOTE: Due to comparable dimensions of **BDF** and **SD** Bombardier Q400 aircraft doors, both doors are supplied with the same barrier door net (Part No 244CA29).

5.2 Embraer E170/E190 Barrier Door Nets.

5.2.1 Four (4) Aircraft Door Barrier Nets are supplied to fit each door on an Embraer E170/E190 Aircraft. See figure 2 showing the aircraft layout and door positions. Table 2 details the key, description and part number for each door.

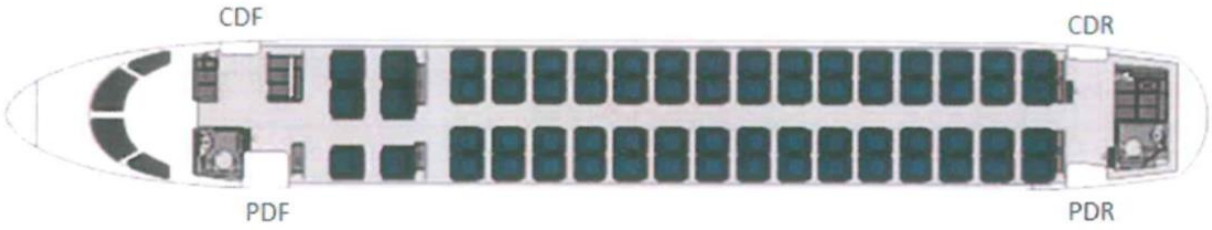


Figure 2

Table 2

EMBRAER E170/E190 (238CA29) BARRIER DOOR NETS SET		
Door Key (refer to Figure 2)	**Door Description**	**Part No**
PDF	Passenger Entry Front Door	239CA29
CDF	Crew Entry Front Door	240CA29
PDR	Passenger Entry Rear Door	241CA29
CDR	Crew Entry Rear Door	242CA29

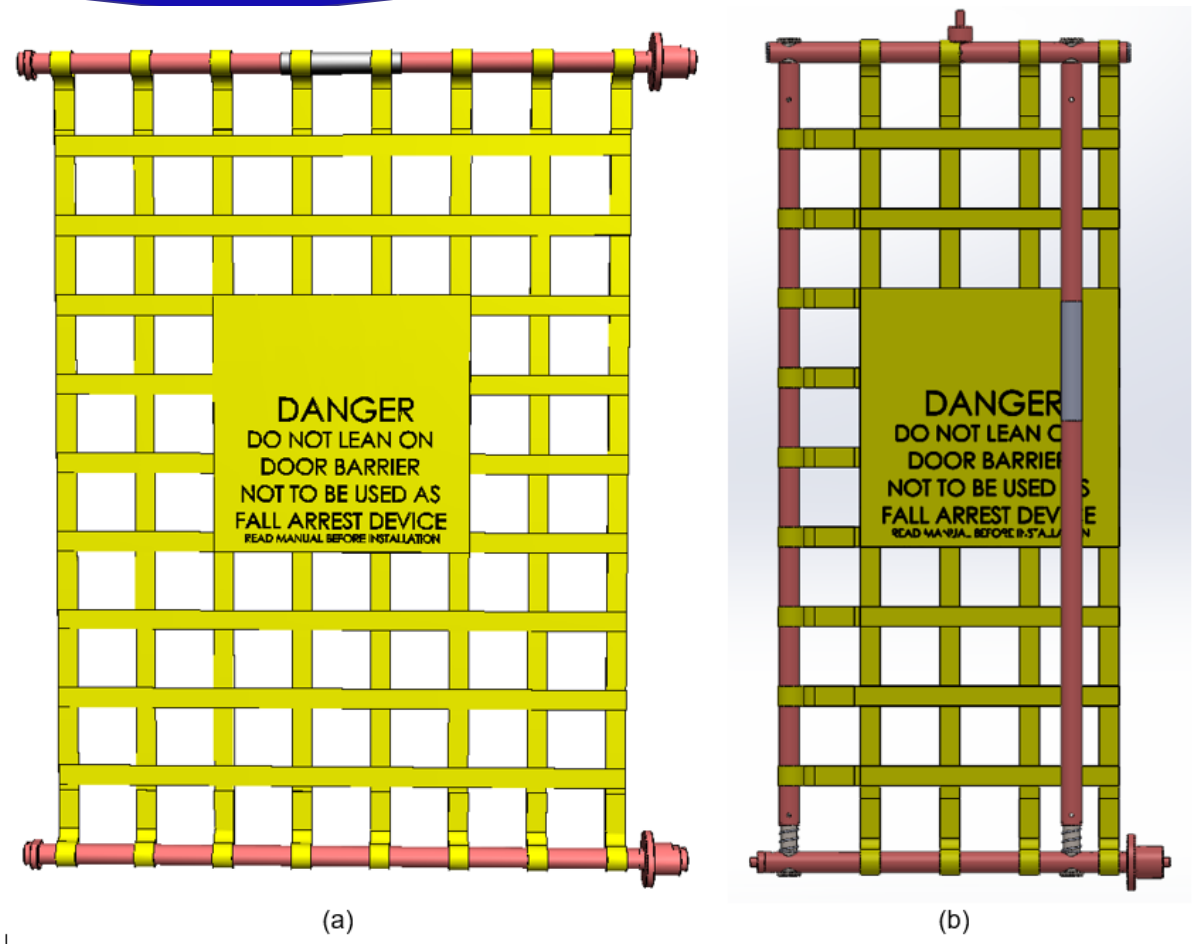


Figure 3

6 Construction

6.1.1 Figure 3 (a) shows a general construction of barrier door nets.

6.1.2 Typical barrier door net consists of two aluminum tubing top and bottom with one side having sprung loaded pins and the other side with locator pins. A polyester webbing is fixed between the tubes.

6.1.3 Figure 3 (b) shows a full assembly of the Bombardier Exit door net.

6.1.4 The Bombardier Exit Door Net consists of two spring-loaded aluminum tubing left and right, spring-loaded pin on one end of the bottom aluminum tubing and top aluminum tubing with door net locator positioned in the middle. A polyester webbing is fixed between the tubes.

6.1.5 A label is affixed on one of the aluminum tubings, identifying the aircraft type, aircraft door type and a warning sign attached to the webbing on all Barrier Door Nets.

6.1.6 No tool is required to attach and remove the door nets from the aircraft door frame.

7 Markings

7.1.1 Figure 4 (a) below shows a warning sign attached on the webbing of each Barrier Door Nets.

7.1.2 Figure 4 (b) shows label affixed on the aluminum tubing detailing the door type, aircraft door, and part number.

(a) (b)

Figure 4

8 Safety.

8.1.1 In an emergency, the Aircraft Door Barrier nets can be removed from the Aircraft door frame without the use of tools.

8.1.2 **Do not** lean on the door barrier and must not be used as a fall arrest device.

Note: All personnel must **read fully** and ensure they **fully** understand this instruction manual before use. If any doubts exist, please contact the manufacturer for further information and clarity.

9 Inspection.

9.1 Inspection before each use:

9.1.1 Inspect each barrier door net for visible defects, that labels and marking are in good condition.

9.1.2 Make sure that the barrier door net type corresponds with the aircraft door type. If in any doubts exists regarding the condition of the product, remove it from service and contact the manufacturer for further advice.

9.1.3 Check that the sprung loaded pins mechanism is in good working condition.

9.2 In-service inspections:

9.2.1 Inspect each barrier door nets webbing, aluminum tubing and sprung loaded fittings for defects and ensure that all labels and markings are in good condition.

9.2.2 If any doubts exist, remove the product from service, and seek further advice or replacement from the manufacturer.

9.2.3 Signs of defects or damage may include: Local abrasion or cuts from a sharp edge or similar, Damage at seam or stitching, Chemical attack, Deformed or otherwise damaged fittings, aluminum tubing, sprung loaded fittings.

9.3 Periodic inspection:

9.3.1 Each barrier door net must be inspected by a competent person, once a year. If any doubts exist, the product must be removed from service and seek advice or replacement from the manufacturer.

Note: Always follow safe manual handling techniques and practices to avoid risk to personnel during handling operations.

10 Installation (except Bombardier Emergency Exit Door See Section 12).

Always carry out visual checks on each barrier door nets for any defects before each use as stated in paragraph Inspection Before Each Use 9.1.

Please note: Aircraft door brackets vary in shape, size, and profile. Please refer to paragraphs 15 & 16.

10.1.1 Firstly, make sure that the warning sign is upright, facing towards the inside of the aircraft and clearly visible to all personnel.

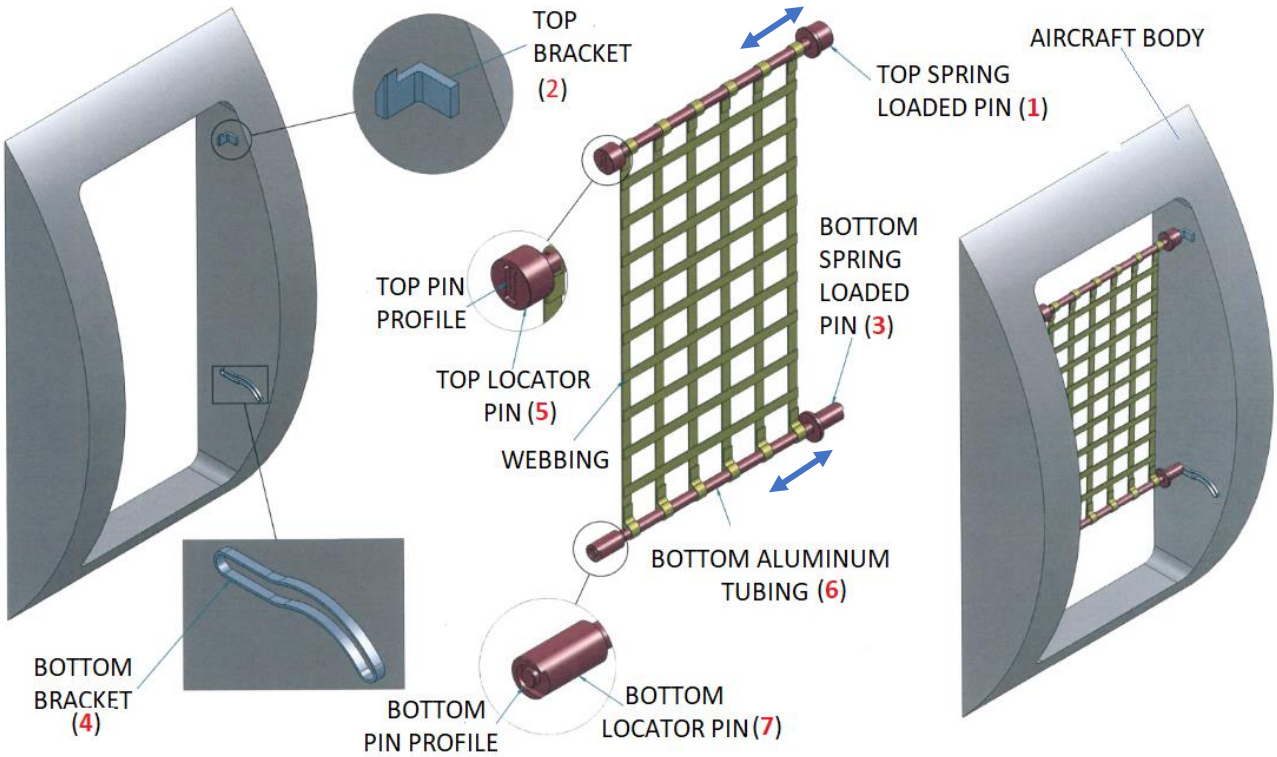
10.1.2 Starting from the top aluminum tubing, push the top spring-loaded pin (**1**) inwards. Insert/slide top locator pin (**5**) and top spring-loaded pin (**1**) into both ends of the top aircraft door frame brackets (**2**).

10.1.3 Make sure that both ends of the top aluminum tubing are fully engaged and securely in position.

10.1.4 Push inwards the bottom spring-loaded pin (**3**) of the bottom aluminum tubing (**6**)

10.1.5 Insert/slide both ends of the bottom locator pin (**7**) and bottom spring-pin loaded pin (**3**) into the bottom aircraft door brackets (**4**).

10.1.6 Make sure that both ends of the top aluminum tubing are fully engaged securely in position.



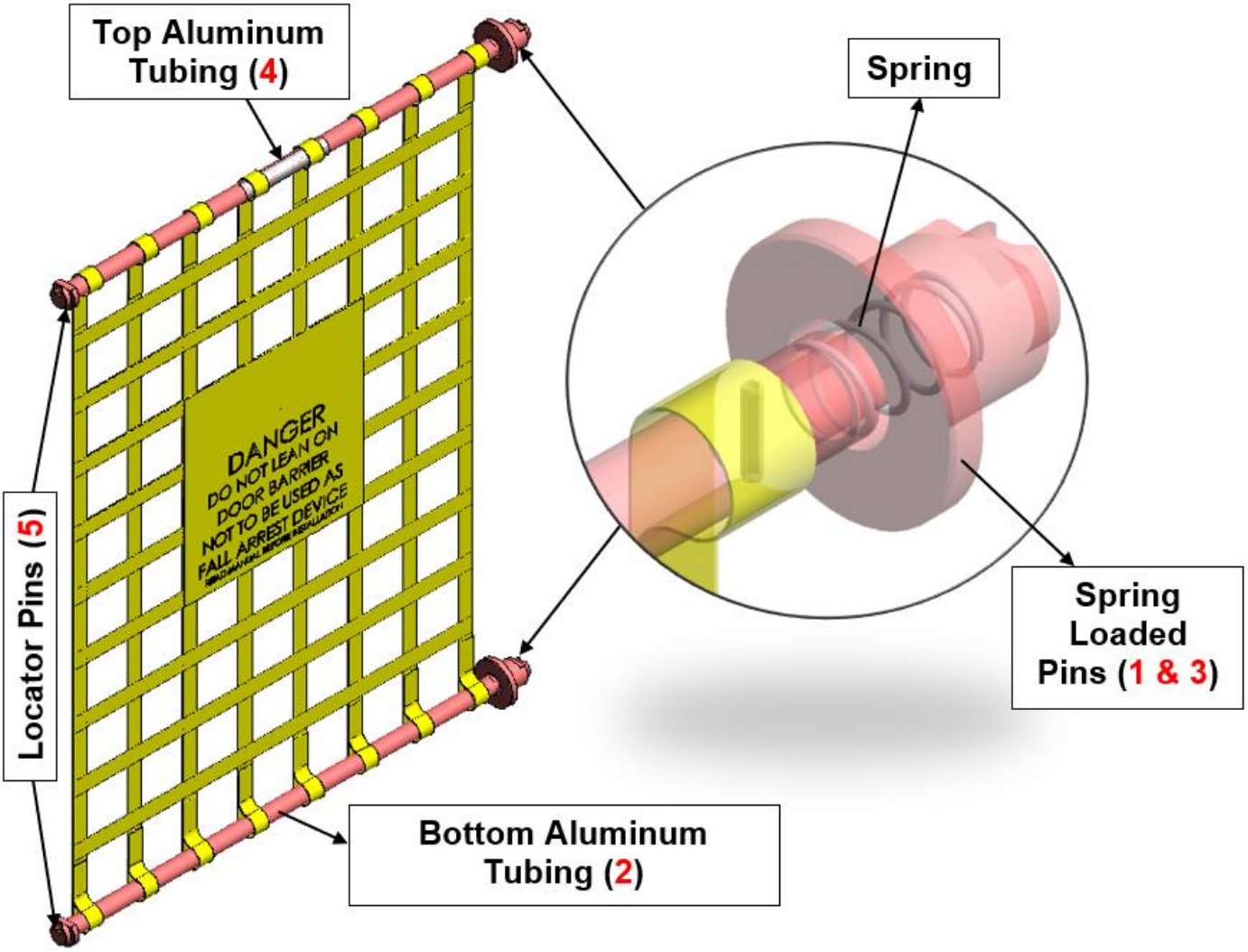
11 Removal (except Bombardier Emergency Exit Door See Section 13)

11.1.1 All aircraft door barrier nets have a spring-loaded pin on one end of each aluminum tubing. To remove the door barrier nets from the aircraft door frame.

11.1.2 Starting from the bottom, push the bottom sprung loaded pin (1) of the bottom aluminum tubing (2) inwards and remove the door frame bracket.

11.1.3 Lastly, push inwards the top sprung loaded pin (3) of the top aluminum tubing (4) and disengage/remove from the door frame bracket.

11.1.4 For safe storage of the product refer to paragraph 4.5.



12 Installation for Bombardier Emergency Exit Door.

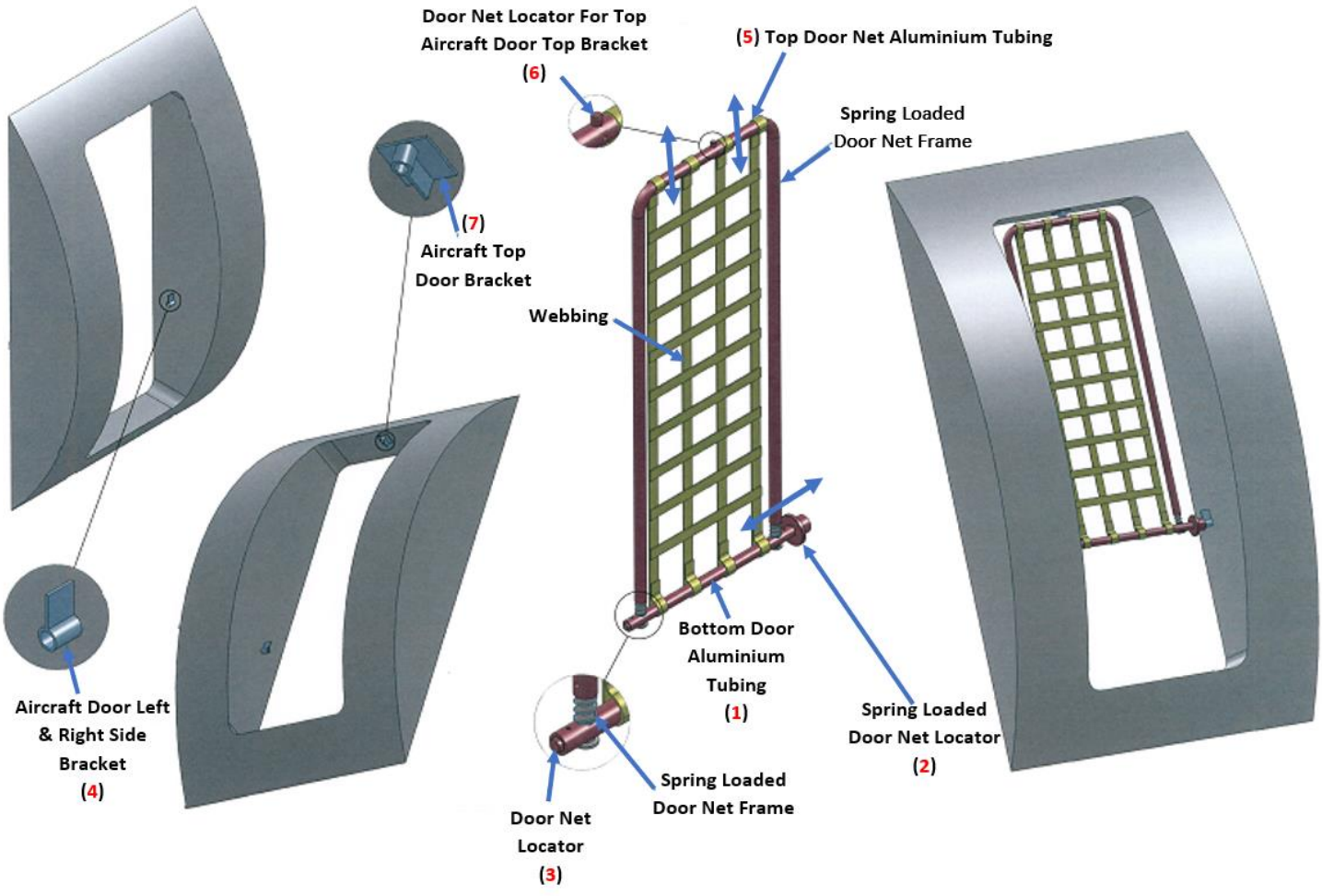
12.1.1 Firstly, make sure that the warning sign is upright, facing towards the inside of the aircraft and clearly visible to all personnel.

12.1.2 Starting from the bottom door net aluminum tubing (**1**), push inwards spring-loaded door net locator (**2**)

12.1.3 Slide in both ends of the bottom door net aluminum tubing locators (**2** & **3**) into the aircraft door left and right-side brackets (**4**).

12.1.4 Push downwards top aluminum tubing (**5**) and slide top door net aircraft locator (**6**) into the aircraft top door bracket (**7**).

12.1.5 Make sure that both top and bottom aluminum tubing are fully engaged securely in position.



13 Removal of Bombardier Emergency Exit Door Net.

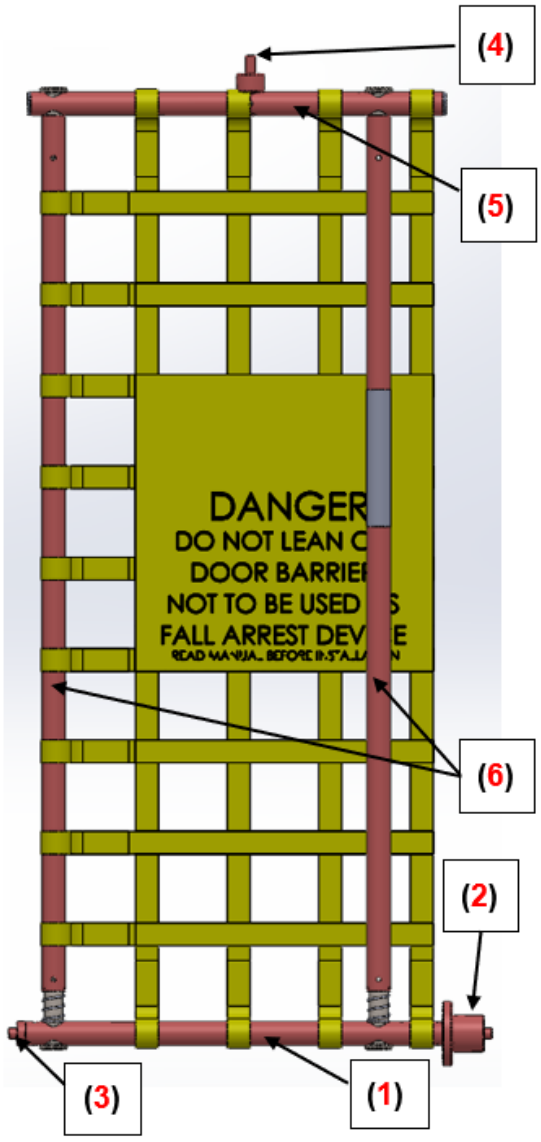
13.1.1 Bombardier emergency exit door net aluminum tubing left and right is spring-loaded on one end.

13.1.2 Starting from the bottom aluminum tubing (1).

13.1.3 Push the bottom spring-loaded pin (2) inwards, slide or disengage both ends [bottom locator (3) & spring-loaded pin (2)] of the bottom aluminum tubing from the door frame brackets.

13.1.4 Lastly, slide the top locator (4) for the top aircraft door bracket

13.1.5 For safe storage of the product refer to paragraph 7.4



No	Part Description
1	Bottom Aluminium Tubing
2	Spring Loaded Pin
3	Bottom Locator
4	Top Locator
5	Top Aluminium Tubing
6	Left & Right Spring-Loaded Aluminium Tubing

14 Maintenance

In addition to regular visual inspections, maintenance work must be carried out once a year. If any doubts exist on the condition of the product, the product must be removed from service and contact the manufacturer for advice or replacement.

14.1.1 Check condition of the **webbing** and **stitching** for defects and damage i.e. scaring, abrasion, flaring and cuts.

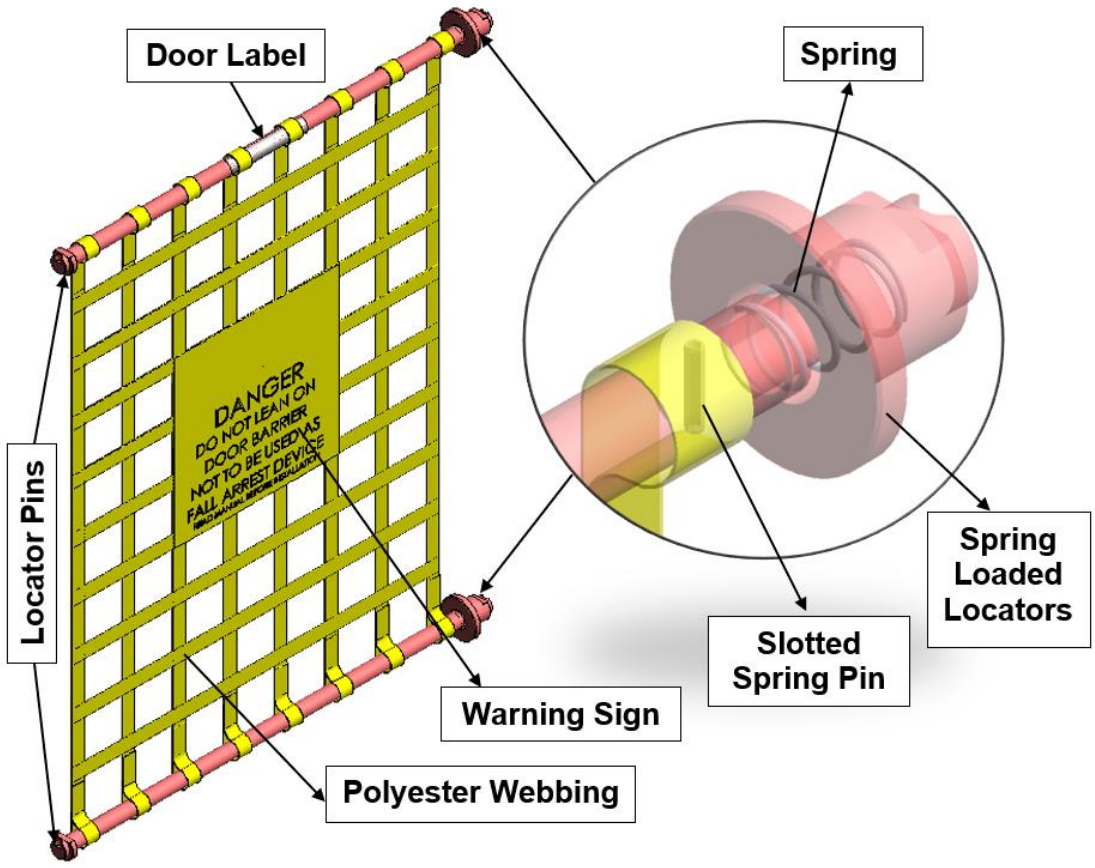
14.1.2 Check condition of the **warning sign**. Ensure that it is securely attached to the webbing and that the lettering/writing is clear and visible.

14.1.3 Check condition of the **label**. Ensure that it is securely affixed to the aluminum tubing and that the lettering/writing is clear and visible.

14.1.4 Check condition of the **spring-loaded pins**. Check the mechanism and movement.

14.1.5 Check condition of the **aluminum tubing** for defects and damage.

14.1.6 Check condition of the **slotted spring pins** for defects and damage.

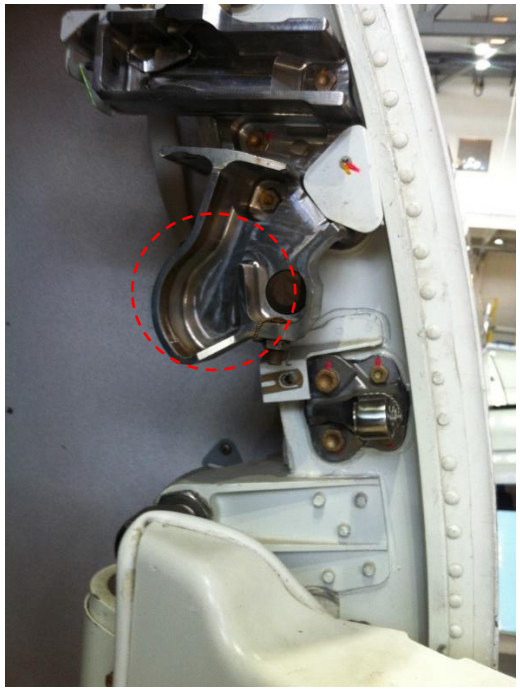


15 Bombardier Q400 Barrier Door Brackets.

Note: Dashed red circles highlights the aircraft frame bracket position for aluminium tubing pin locators.

16 Embraer E170/E190 Door Brackets.

Note: Dashed red circles highlighting the aircraft frame bracket position for aluminium tubing pin locators.



17 Storage.

17.1.1 The storage area should be dry, clean and free of any contaminants.

17.1.2 **Avoid** prolonged exposure to direct sunlight (UV radiation), this may have an adverse effect on the polyester webbing.

17.1.3 **Do not** expose the barrier door nets to heat sources.

17.1.4 **Avoid** direct exposure to chemicals such as strong Alkalis and Acids.

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