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		Pág. 1 de 22 Page 1 of 22	
	Departamento Department: Cabin/Cargo Hold	Avión Aircraft	A330-200 MRTT

Título/Title

A330-200 MRTT Hatch Adjustment

Palabras clave/Key words	Clasificación acceso Access class
A330, MRTT, RAAF, HATCH, ADJUSTMENT	P1

Resumen/Summary

This document establishes the process to adjust the hatch installed in the A330-200 MRTT for the RAAF.

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	Realizado Prepared	Firma Signature
José Moreno Ropero	Juan Padilla Barrera	
Javier Yagüe López		
Emilio Pereira Díez		
Antonio San José Orche		
	Comprobado Ckecked: A. I. Palma Ortega	P.A.
	Aprobado Approved: José L. de la Fuente	

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TABLE OF CONTENTS

1. INTRODUCTION

The purpose of this document is to establish the process to adjust the hatch in the aircraft.

1.1. SCOPE

This document is applicable for the A330-200 MRTT aircraft for the Royal Australian Air Force.

1.2. REFERENCED AND APPLICABLE DOCUMENTS

Following documents are applicable:

- F536A7001 HATCH INSTALLATION
- F255A4000 HATCH INSTALLATION
- F536A7010 ACCESS DOOR EQUIPPED
- F255A4004 CARPET MODIFICATION
- F53477000 FLOOR STRUCTURE S17
- NT-FA-ANC-05006 STANDARD PARTS APPLICABLE FOR EADS-CASA TO A330-200-MRTT
- NT-FA-ID-05006 SELECTION OF MATERIALS, PROCESSES AND CORROSION PREVENTION CODES, APPLICABLE TO A330/200-MRTT PROGRAMME

2. AIRCRAFT AND HATCH CONFIGURATION

2.1. AIRCRAFT CONFIGURATION

- Lights in cabin and bulk cargo compartment shall be on.
- Aft cargo compartment door and bulk cargo compartment door must be closed.
- Carpets must be installed (including trim-carpets).
- Bulk cargo compartment shall be empty (no load or element necessary for this procedure is allowed).
- Following ceiling panels of bulk cargo compartment must be removed for access to latch-housings:
    - F25576517004
    - F25576522004

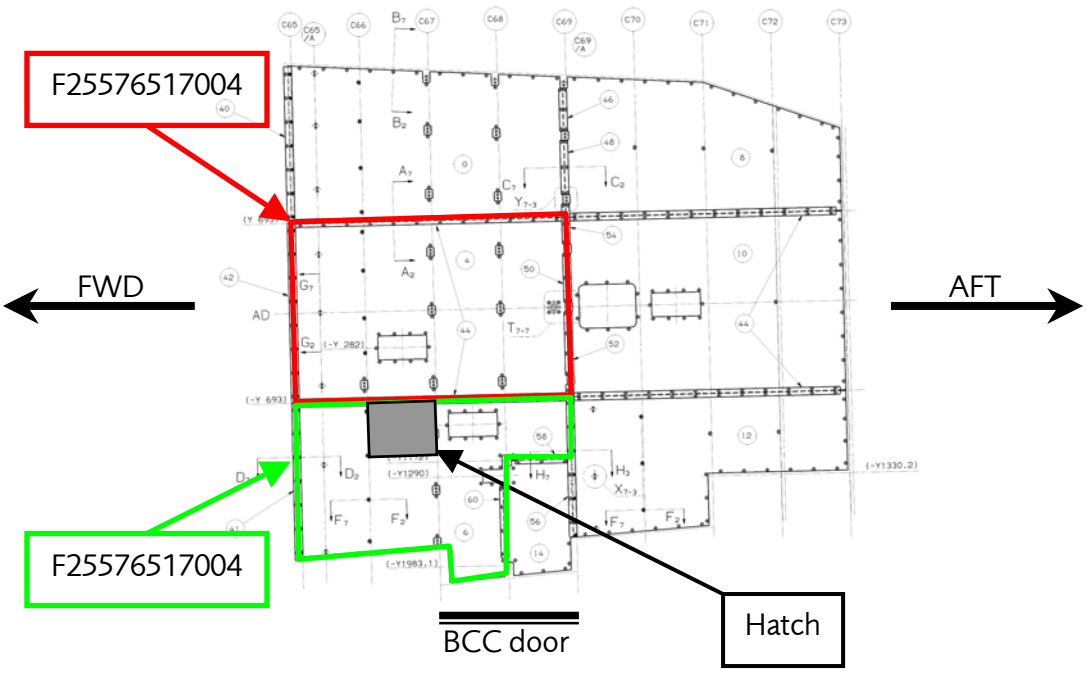

Fig.1. Ceiling panels of BCC to be removed

2.2. HATCH CONFIGURATION

- The hatch must be finished and equipped with the carpet (including the trim-carpet).
- No mechanism/adjustable part shall be blocked before the adjustment process.
- The lock assembly must be installed but not blocked:

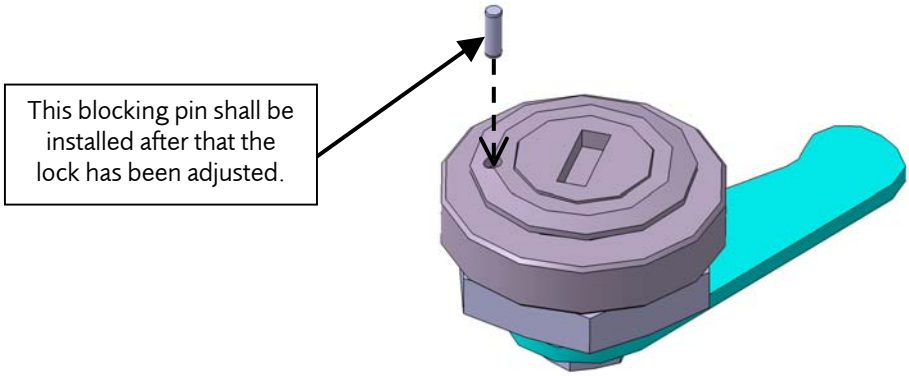

Fig.2. Blocking system of lock mechanism

3. TEST EQUIPMENT

- Ruler and gauges
- Lamp/torch
- Dynamometer
- Screwdriver

4. HATCH INSTALLATION AND ADJUSTMENT

4.1. INTERCHANGEABILITY REQUIREMENTS

Due to the hatch is interchangeable the installation of the hatch and its adjustment must be done at the same time.

Main interchangeable dimensions appears in following drawings:

- F536A7001
- F536A7010

4.2. HATCH ADJUSTMENT

4.2.1. Interferences between latches and covers

It is strongly necessary to confirm that the latches (F536A7014) do not touch the covers (F536A7118).

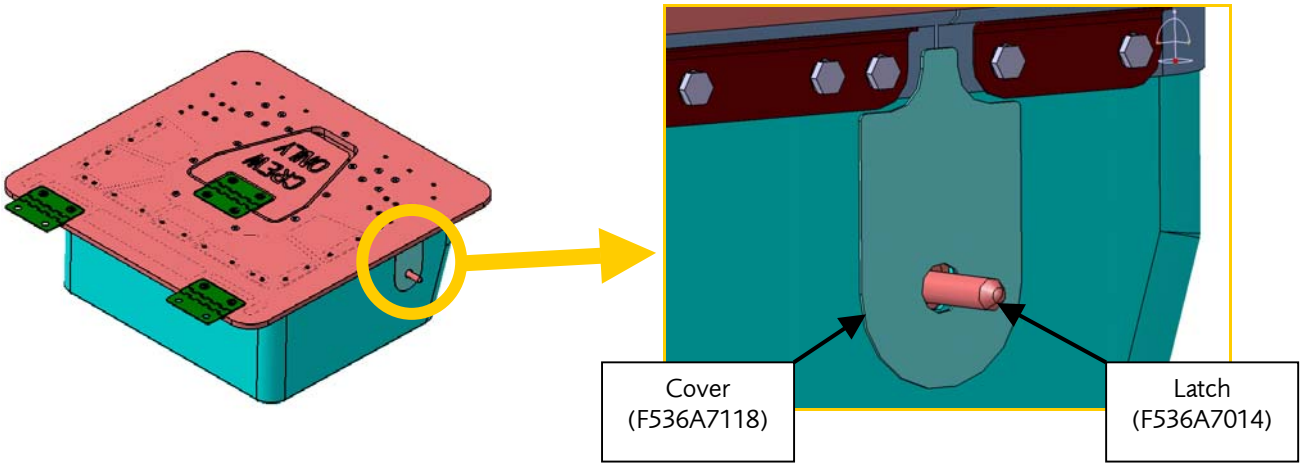

Fig.3. Interference between latch and cover

Inspect visually both parts. If there is any interference, remove the cover and install it again. This process is easy due to the Velcro's tapes incorporated in the covers.

4.2.2. Lock adjustment

The first element to be adjusted is the lock. It will define the position of the shaft and its handles.

Do not block the lock until it has been adjusted.

Involved parts in the lock adjustment are showed in the following figures:

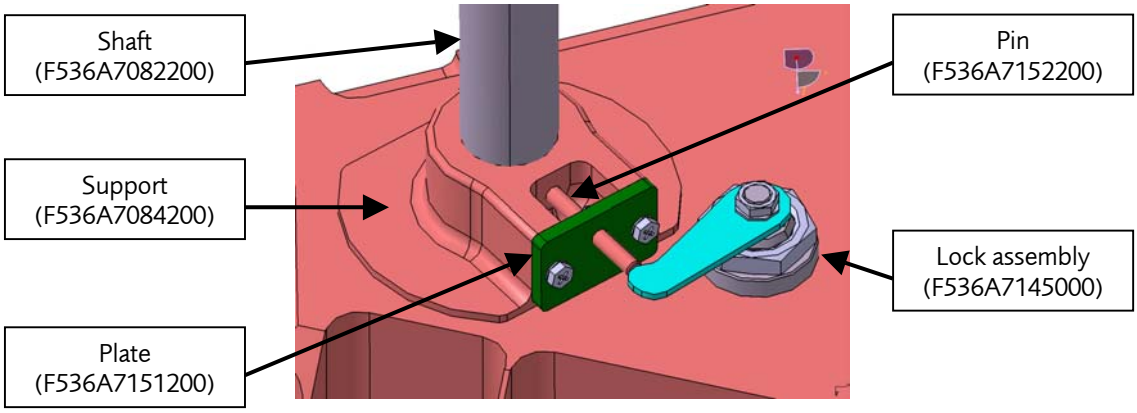

Fig.4. General view of locking system

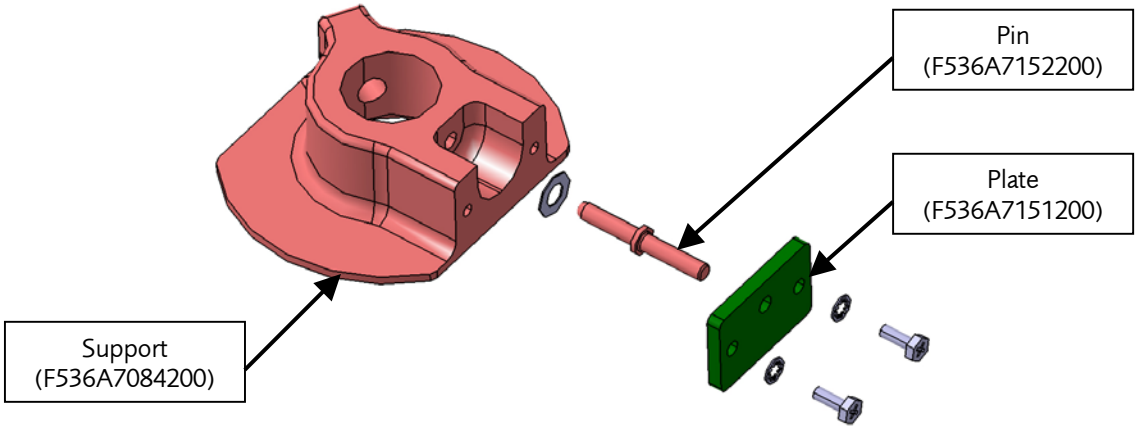

Fig.5. Exploded view of the F536A7150000 assembly (Spring MS24585C146 not showed)

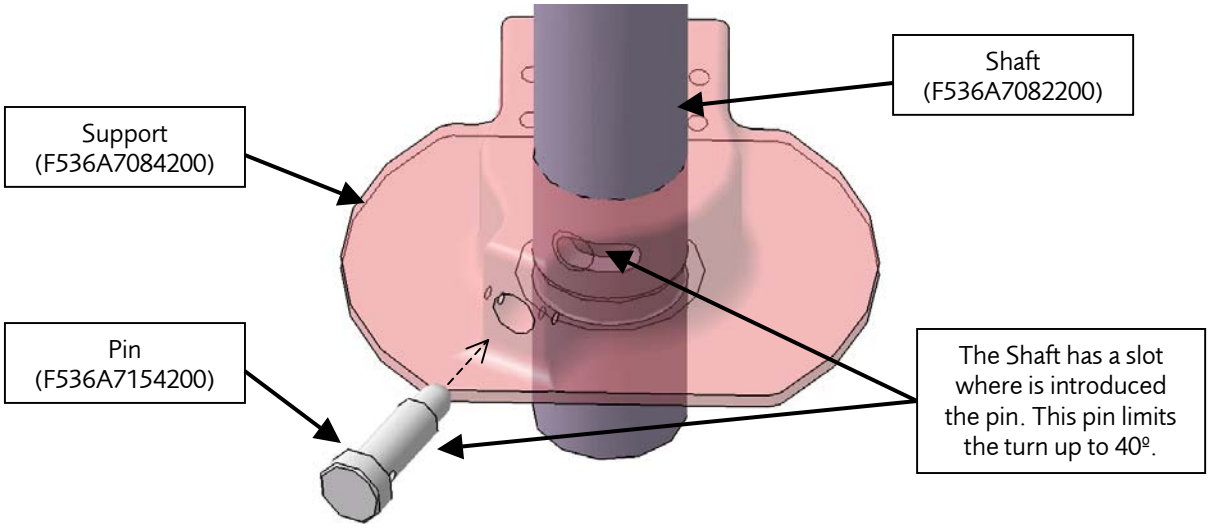

Fig.6. Detail of the slot in the shaft

1. Turn the lock to open position and the mechanism to close position (latches extended).

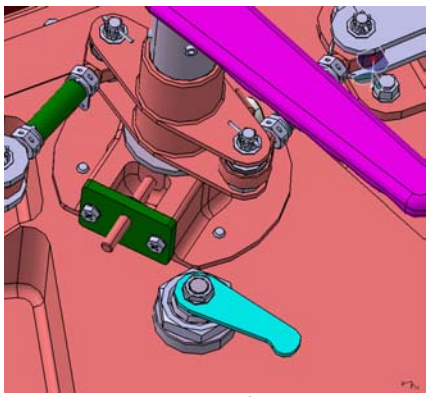

Fig.7. Lock open

2. The pin F536A7152200 must be perfectly aligned with its hole in the shaft F536A7082200 and in the plate F536A7151200.

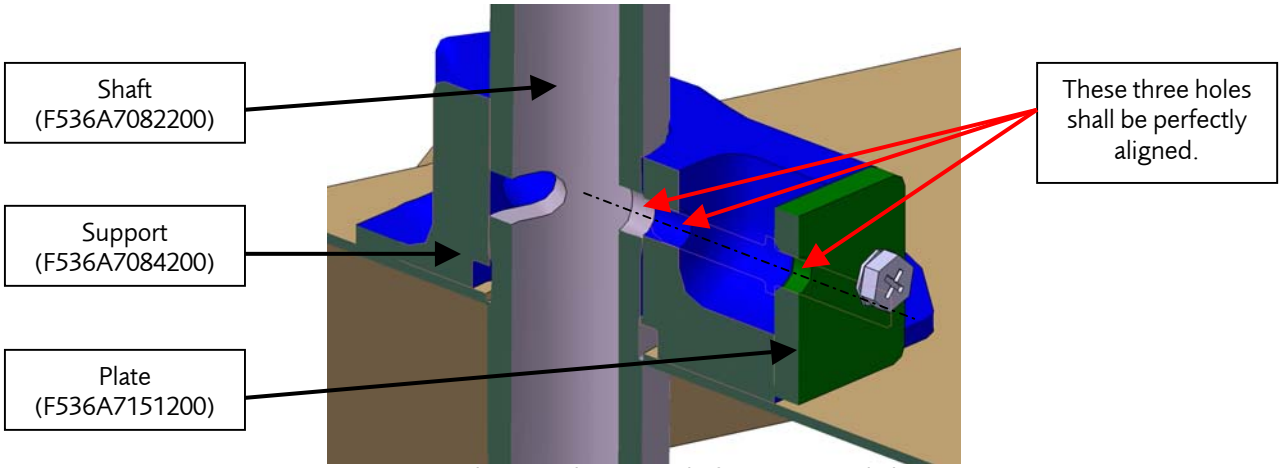

Fig.8. Alignment between Shaft, Support and Plate

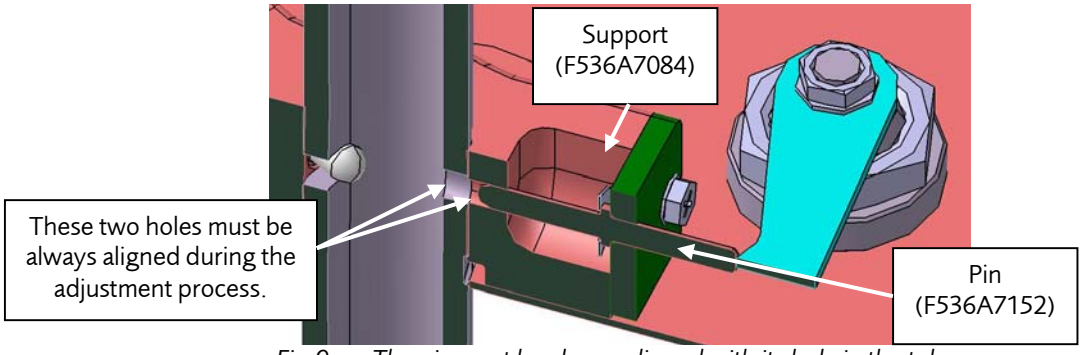

Fig.9. The pin must be always aligned with its hole in the tube.

In order to adjust its position, the plate F536A7151200 has slightly bigger holes for the screws that provide the possibility to move it in its plane.

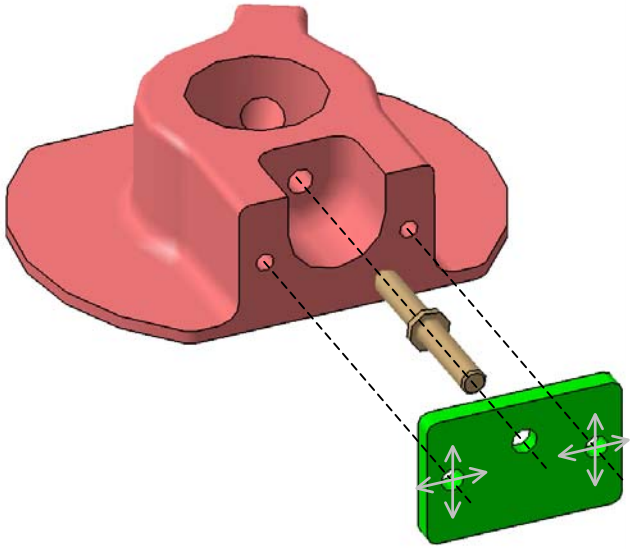

Fig.10. Adjustment of Plate F536A7152200

It is strongly necessary that the Pin F536A7152 can be introduced into its hole before/just the Pin F536A7154 had reached the end of the slot.

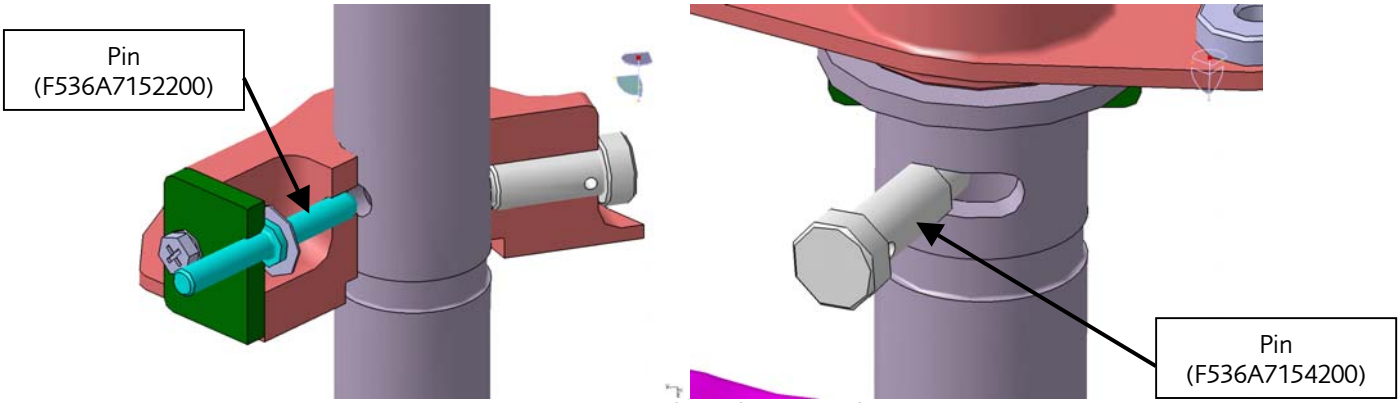

Fig.11. Pins positions with mechanism in close position

3. Press several times the pin F536A7152 to check that it moves smoothly and does not get jammed.

4. Check that the spring restores always the pin (F536A7152) to its original position.

   The pin must protrude **15.5 ± 1 mm**.

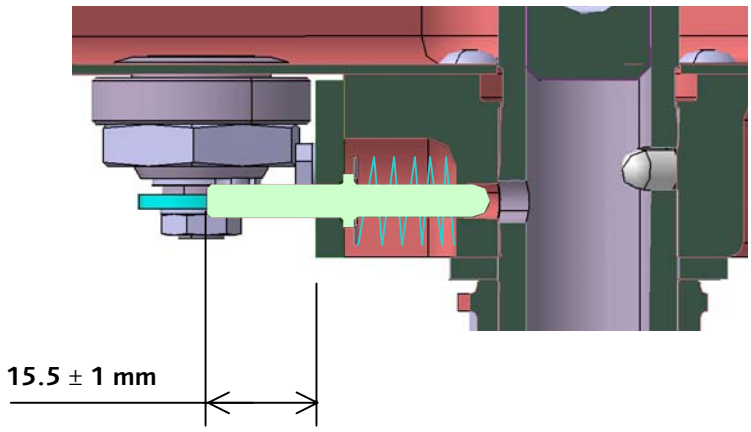

Fig.12. Section view of locking system in open position

5. Once the plate (F536A7152200) is definitively positioned, block the screws with anaerobic adhesive Z15.504 in order to avoid inadvertent movements of the plate.

6. After located correctly the pin (F536A7152), the lock assembly (F536A7145000) can be adjusted.

   Main parts of the locking assembly (F536A7145000) are showed in the following figure:

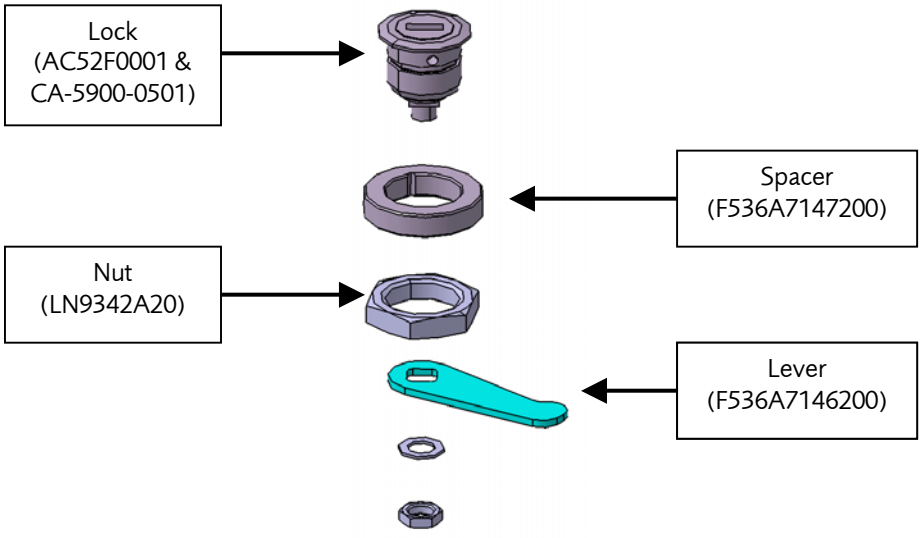

Fig.13. Exploded view of the F536A7145000 assembly

   The lever (F536A7146200) turns 180º.

   If the nut is not tightened, the assembly can be turned around its own axis. Rotate the whole assembly until the lever (F536A7146200) complies with the dimension established in the following point when the lock is in close position.

7. Close the lock using the key in order to achieve the following dimension:

   The pin must be introduced **3 ± 1 mm**.

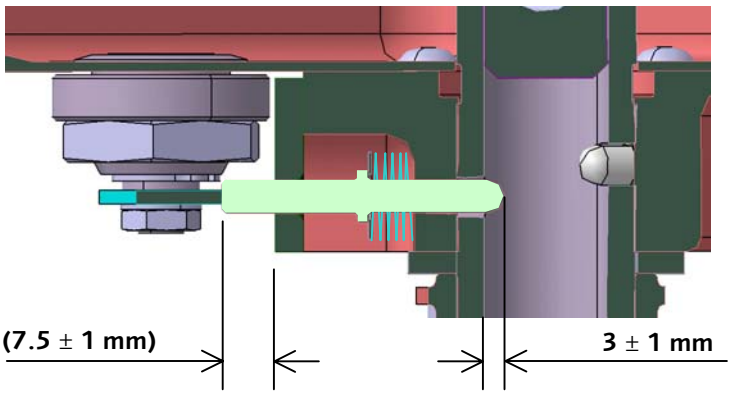

Fig.14. Section view of locking system in locked position

8. Once achieved these dimensions, tighten the nut (LN9342A20).

9. Lock and unlock several times using the key. Check that there is no interference and all parts can move smoothly.

   The hatch is open turning rightwards, and closing leftwards.

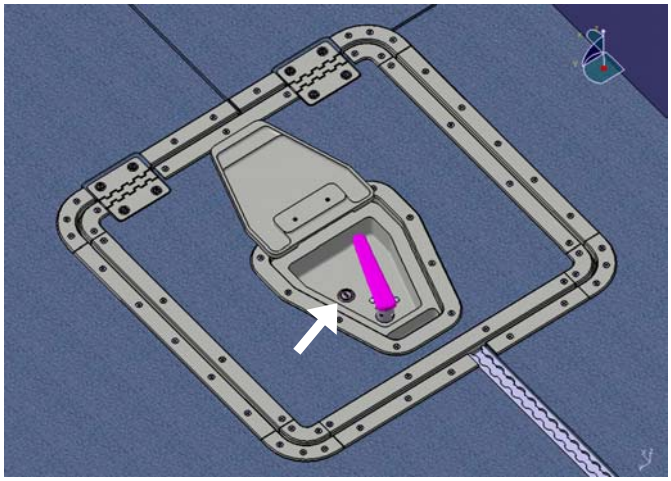

Fig.15. Lock location

10. Open and close the hatch several times. Lock and unlock the hatch with the key several times, too. Check that there is no interference and all parts can move smoothly.

4.2.3. Mechanisms adjustment

Support the hatch in a place where it can not be moved inadvertently and check the opening mechanism as follow:

1. Check that there is no element that could produce interferences when the mechanism is operated.

2. Turn the mechanism to open and close positions several times. Repeat the process using both handles. During these processes check that the mechanism moves smoothly.

3. In case that the mechanism does not move smoothly, stop the check and find and correct the problem. Disassemble the mechanism if necessary. Do not follow the adjustment until the mechanism does not operate properly.

4. Lock the mechanism using the key. Do not continue with the adjustment if the mechanism is not correctly locked.

5. Adjust the mechanism until the latches comply with the following mandatory dimensions:

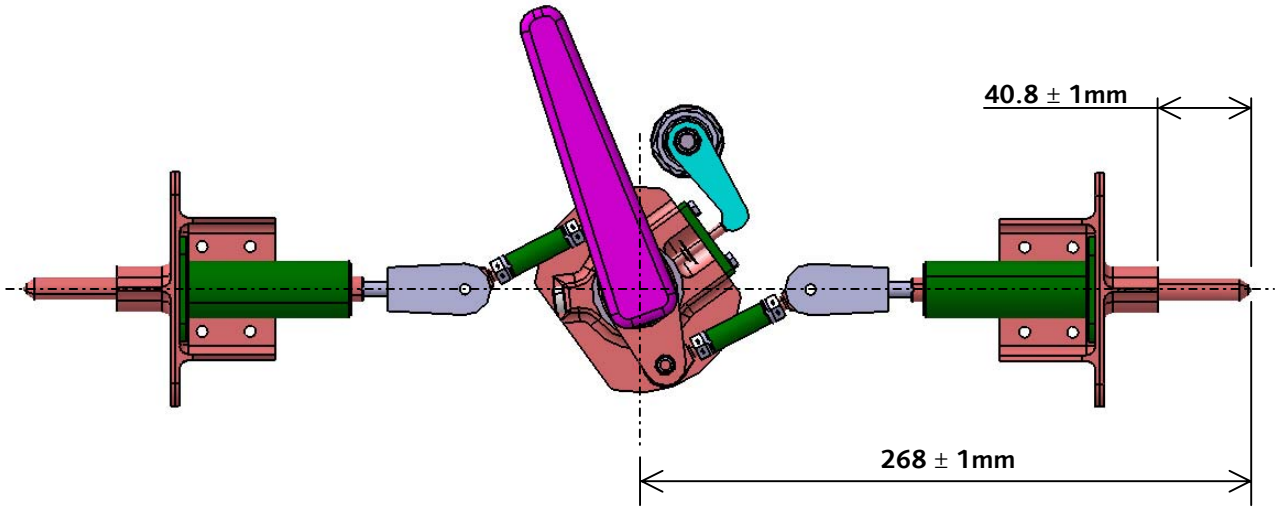

Fig.16. Mechanism dimensions in extended position

The mechanism has adjustable rods to achieve these dimensions:

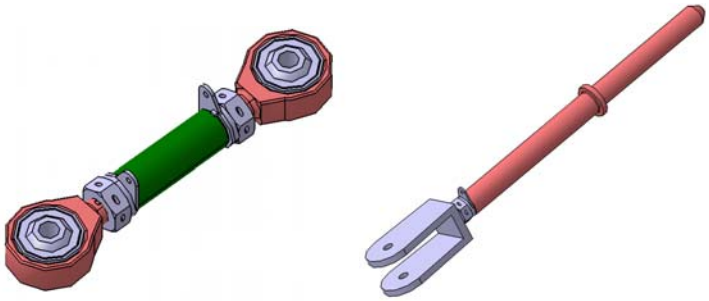

Fig.17. Adjustable rods of the mechanism

6. Unlock the mechanism and turn it to close position. Check that the rods do not interfere with the lever and check that the pin F536A7154 is what limits the turn of the handles.

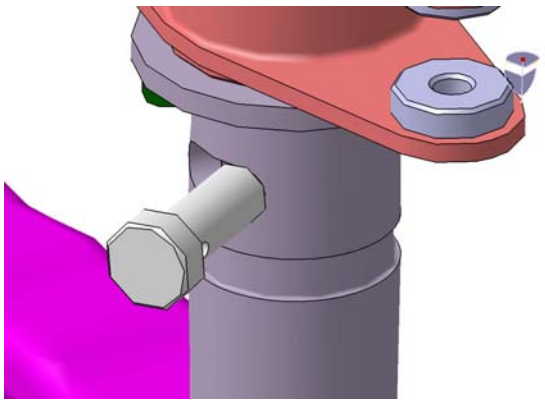

Fig.18. Pin position with mechanism in open position (Support F536A7084 not showed)

7. Check that the following dimensions or smaller can be achieved during the closing process.

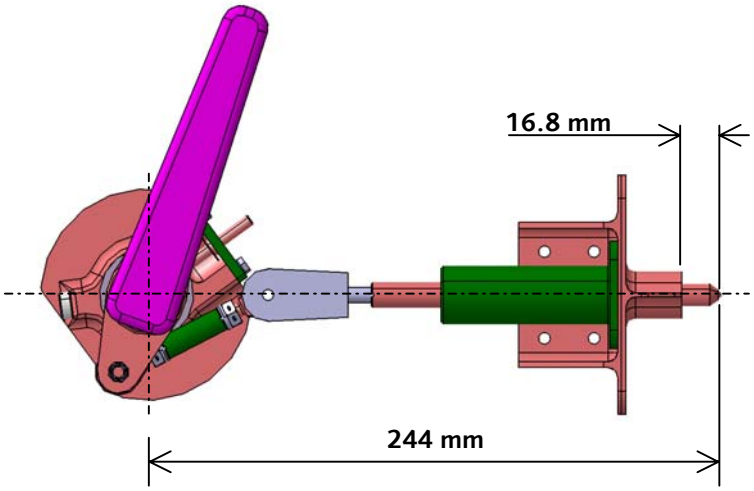

Fig.19. Mechanism dimensions in retracted position

8. Once the mechanism is adjusted, turn the mechanism to open and close positions several times. Repeat the process using both handles. During these processes check that the mechanism moves smoothly.

9. Do not block any component. They will be blocked at the end of the adjustment process.

4.3. HATCH INSTALLATION

4.3.1. Positioning in main cabin

1. Rest the hatch on its structure and attach it to the floor panels.

   The gap between trim-carpets in vertical direction shall be ±**1 mm.**

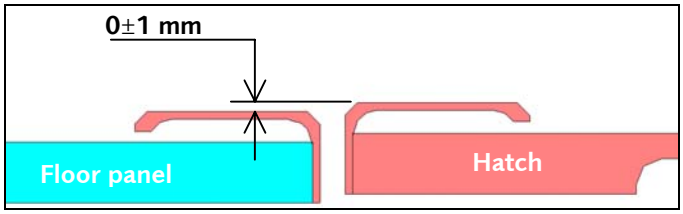

Fig.20. Vertical gap between hatch and floor panels (carpet not represented)

As indicated in document F536A7001, there must be a gap of **4±1 mm** around the hatch boundary (including the trim-carpets).

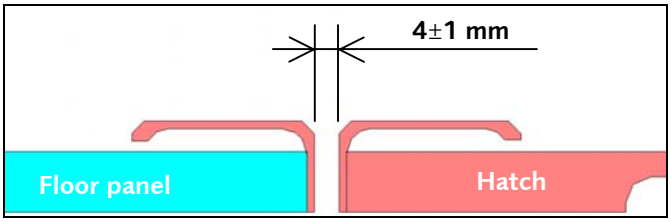

Fig.21. Gap between hatch and floor panels (carpet not represented)

2. Check these gaps in all the following points:

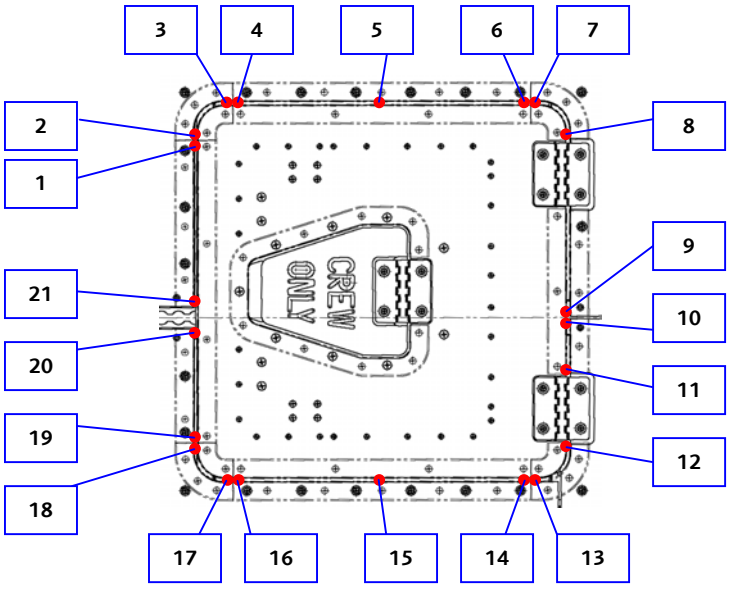

Fig.22. Checking points in hatch contour

4.3.2. Alignment of latches and trims

Once positioned the hatch, it is necessary to align the hole of the trim F255A4032202 with the latch, to avoid any damage on the trim when the latch moves.

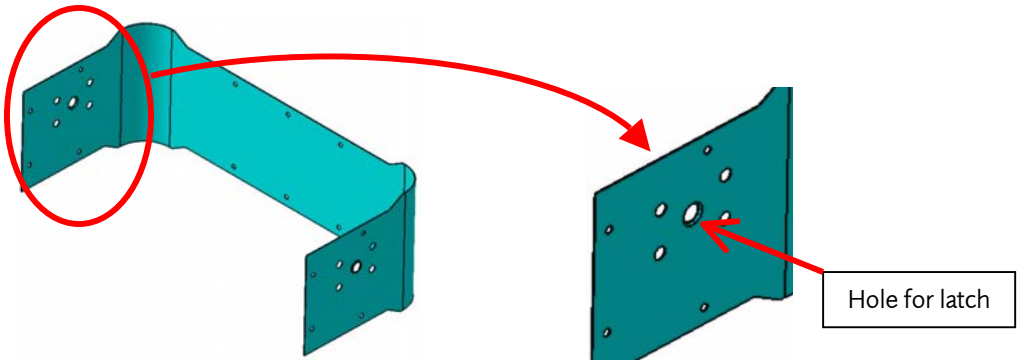

Fig.23. F255A4032202 Trim

This trim is attached to the structure by means of anchor nuts, so it can be moved **1mm** upwards and downwards.

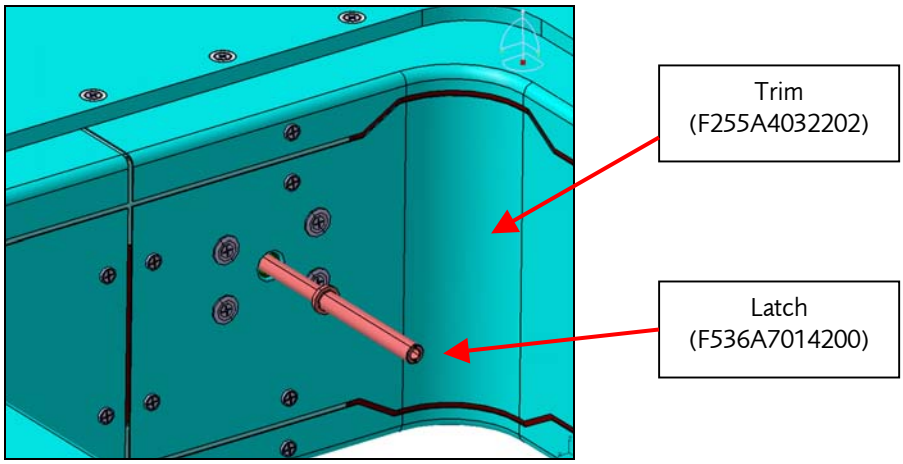

Fig.24. The latches and the holes in the trims must be aligned

The gap between the latch and the hole is **2 ± 0.5 mm**:

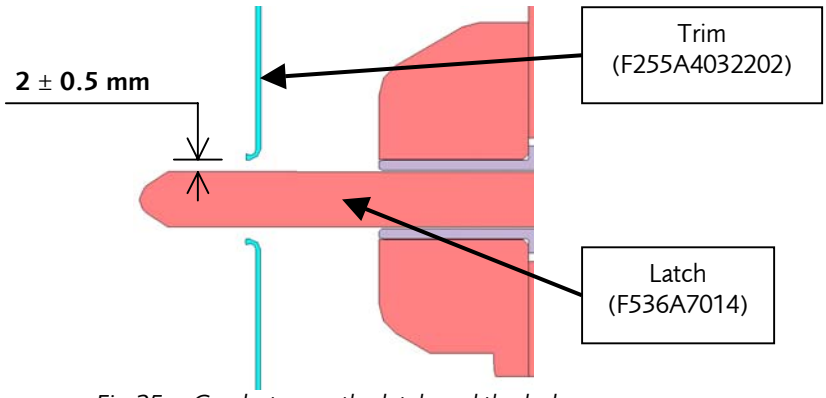

Fig.25. Gap between the latch and the hole

4.3.3. Adjustment of the latch housings

The latch housing adjustment implies the following parts:

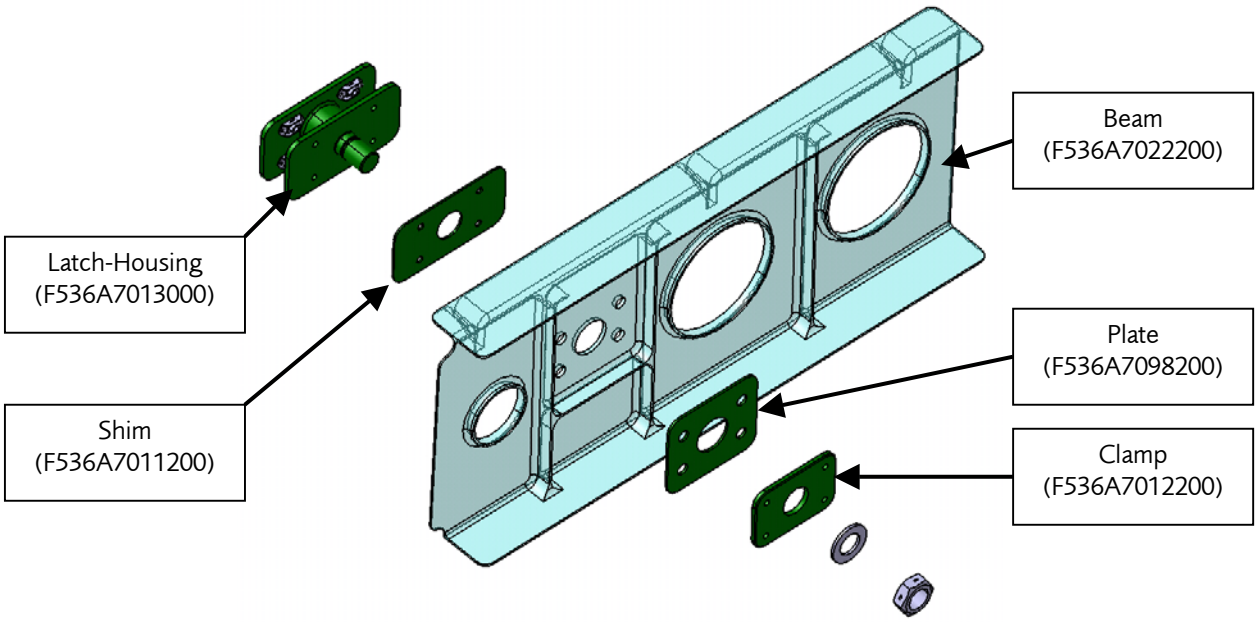

Fig.26. Explode view of the latch-housing

1. In order to achieve the correct position in Y-direction, there is a peel able shim (F536A7011200) between the latch-housing and the beam. The following dimension shall be achieved using the shim:

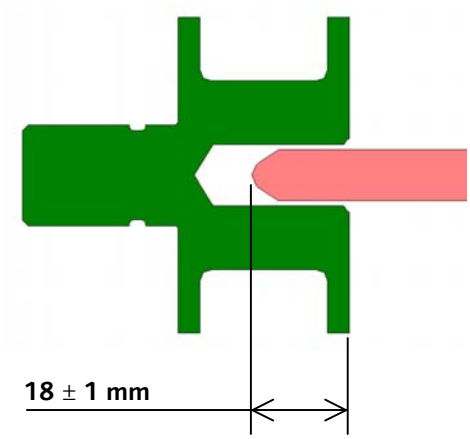

Fig.27. Latch position inside the latch-housing

2. Install all the parts showed in the figure 15, using only the big nut to keep them fixed. This nut is for adjustment only. It is not necessary to tighten the nut too much.

3. Move the latch-housing in Z and X directions in order to achieve the following gap:

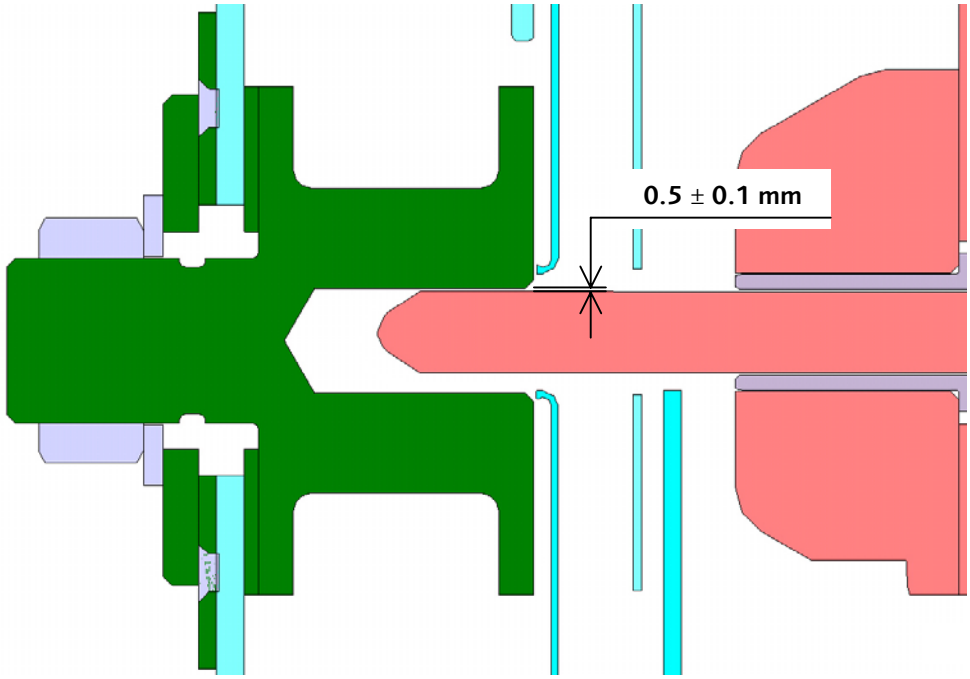

Fig.28. Gap between the latch and the latch-housing

4. Once achieved the previous gap, tighten the nut in order to prevent any accidental movement of the latch-housing.

5. Install the four bolts according to the F536A7140-01 drawing (do not install yet the lock wire MS20995C41. All blocking processes shall be done at the end of the adjustment process).

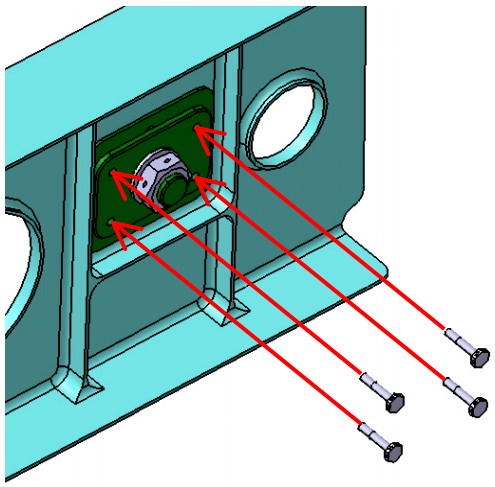

Fig.29. Bolts installation

6. Once the mechanism is adjusted, turn the mechanism to open and close positions several times. Repeat the process using both handles. During these processes check that the mechanism moves smoothly.

4.4. BLOCKING

After the adjustment of all parts, they shall be blocked.

4.4.1. Opening/Closing Mechanism

Use MS20995C20 lock-wire and bend the cotter pins in order to block the adjustable rods.

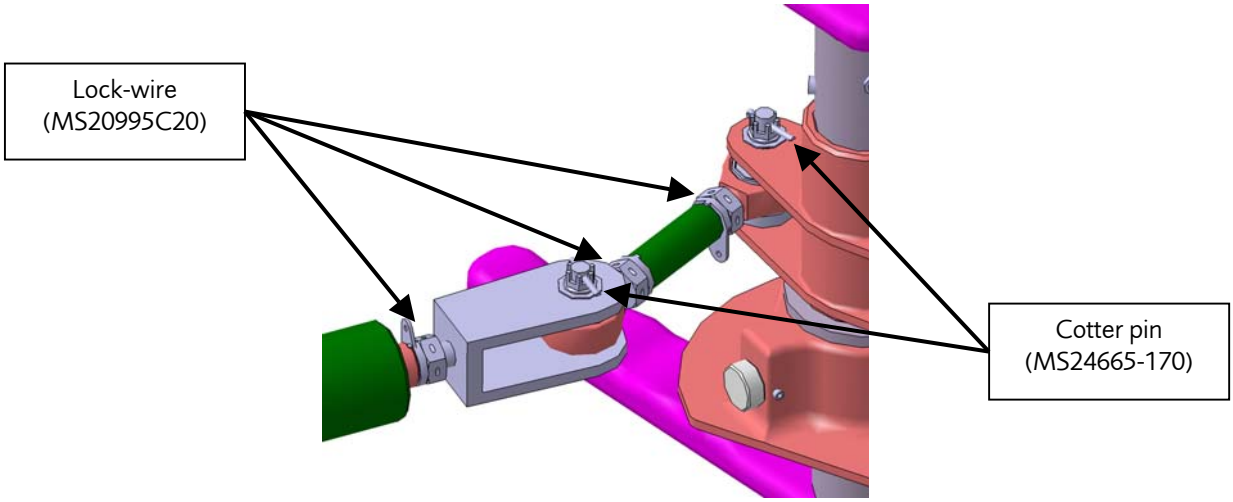

Fig.30. Blocking of opening/closing mechanism

4.4.2. Latch housings

Use lock-wire MS20995 as shown in drawing F536A7140-01.

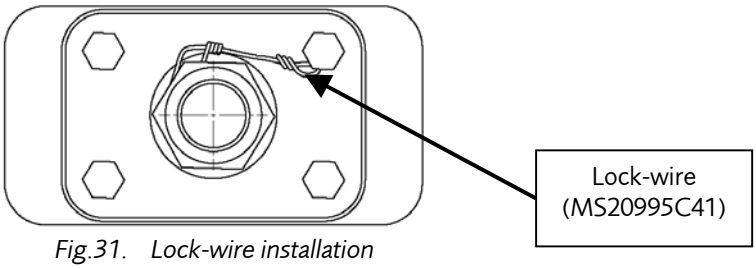

Fig.31. Lock-wire installation

4.4.3. Lock assembly

It is strongly necessary to check that the lock has been adjusted properly, due to it has a cylindrical pin for blocking which, once installed, produces a small slot in the fitting F536A7086202.

The lock shall be blocked after that the entire hatch had been correctly adjusted and blocked.

Install the pin into its location.

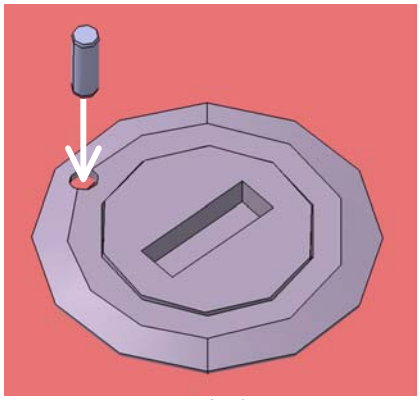

Fig.32. Blocking pin

5. SKETCHES