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	SPF, Aircraft System Engineering Department					
Aircraft	A330 MRTT					

Title:

Hatch Subassembly Rigging procedure

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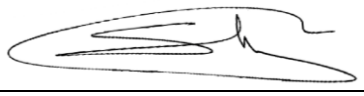
Signature: 	Signature: 	Signature: 
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1 INTRODUCTION

1.1 Object

This document establishes the process to adjust the hatch located at the rear entrance area, between frames C66 and C67 as shown in figure 1, in the A330-200 MRTT aircraft for the Royal Australian Air Force.

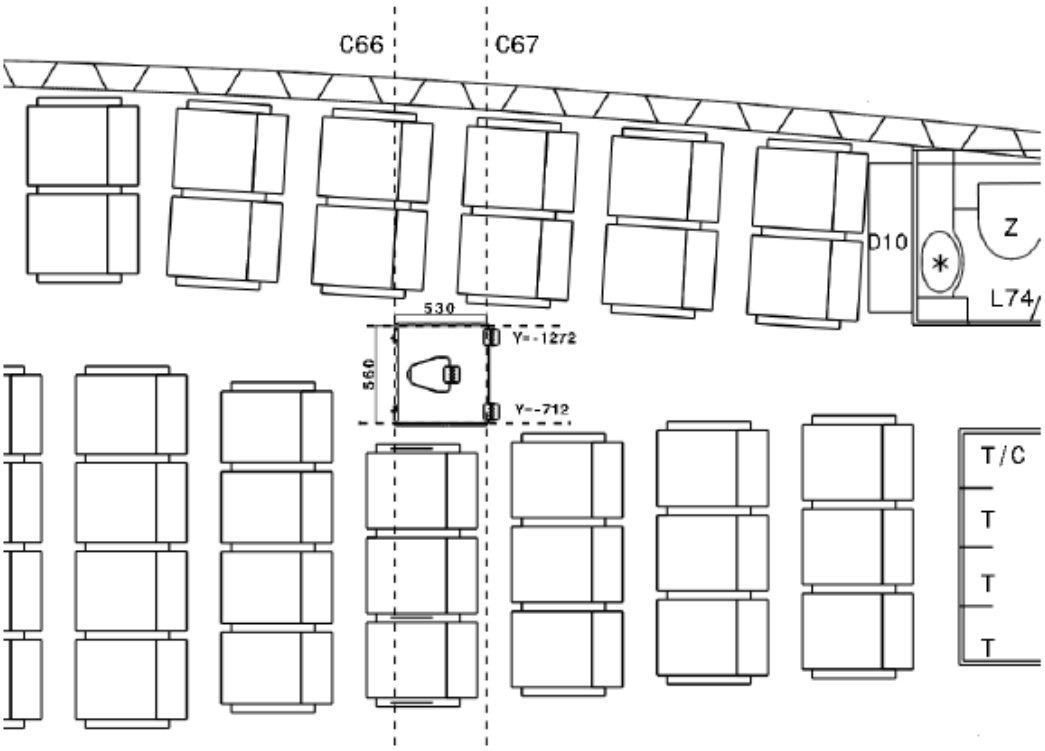

Figure 1. Hatch Location of the new access hatch in passenger compartment.

1.2 List of acronyms and abbreviations

MRTT	Multi-Role Tanker Transport

2 APPLICABLE DOCUMENTATION

NT-FA-AEO-06-267-issue A	A330-200 MRTT Hatch Adjustment
F536A7001	HATCH INSTALLATION
F536A7010	ACCESS DOOR EQUIPPED
F536A7140-01	LATCH HOUSING ASSY
F255A4000	HATCH INSTALLATION
F255A4004	CARPETS MODIFICATION
F53477000	FLOOR STRUCTURE S17

3 REQUIRED EQUIPMENT

- Ruler and gauge
- Lamp/torch
- Screwdriver
- Anaerobic Adhesive Z15.504
- PROO-01-5300-10000-04-A Hatch Rigging Tools

4 DEFINITIONS

N/A

5 PRELIMINARY INSTRUCTIONS

5.1 Hatch Subassembly Configuration.

- The hatch must be finished and it can be equipped with carpet (including trim carpets) or without the carpet (neither the trim carpet)
- Every Hatch component shall be installed.
- No mechanism / adjustable part shall be blocked before the adjustment process.
- The lock assembly must be installed but not blocked:

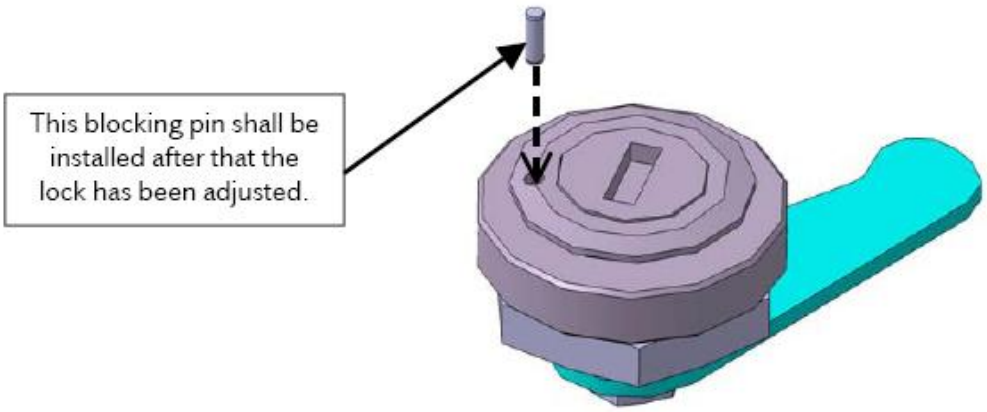

Figure 3. Blocking system of lock mechanism.

5.2 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

6 TEST EXECUTION

6.1 HATCH SUBASSEMBLY ADJUSTMENT

6.1.1 Interferences between latches and covers

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

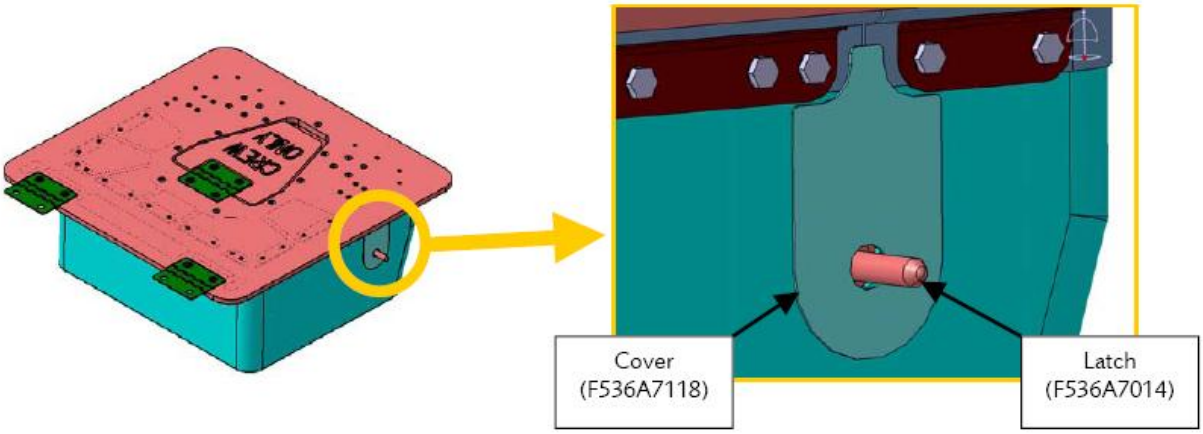

Figure 4. Interference between latch and cover

Inspect visually both parts and 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.
The minimum Gap between the latch and the cover shall be **2 ± 1 mm.** Record the minimum gap for both latches in table 7.1 (dimension A1 and A2)

6.1.2 Lock adjustment

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

Install every part of the lock assembly but do not block the lock until it has been adjusted.

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

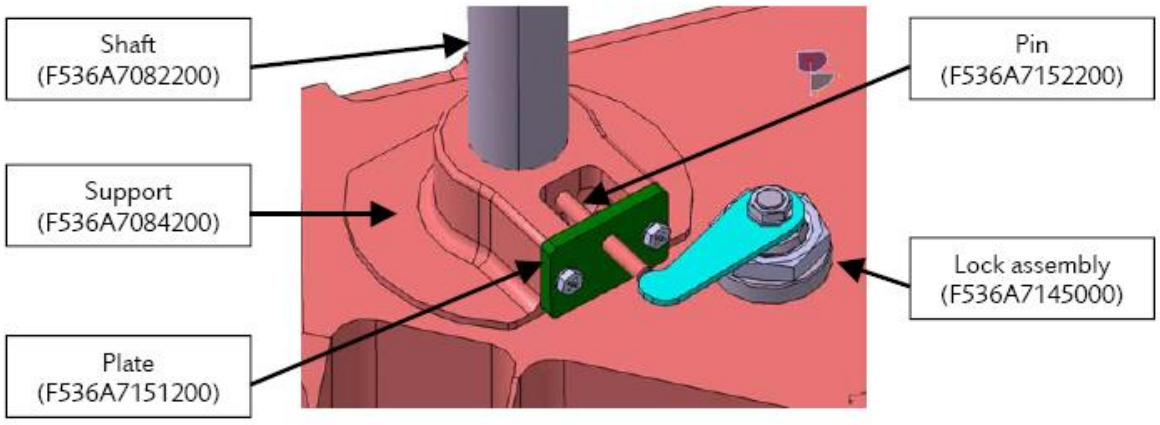

Figure 5. General view of locking system.

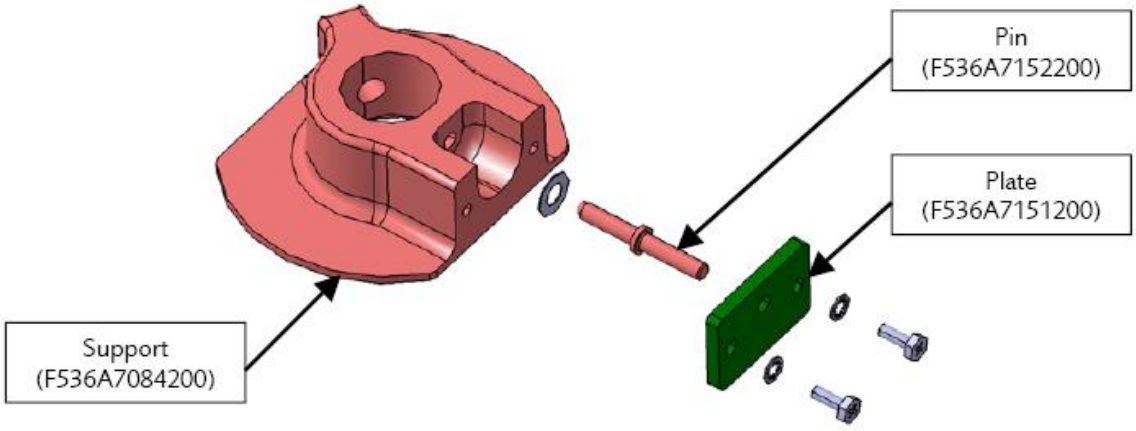

Figure 6. Exploded view of the F536A7150000 assembly (Spring MS24585C146 not showed).

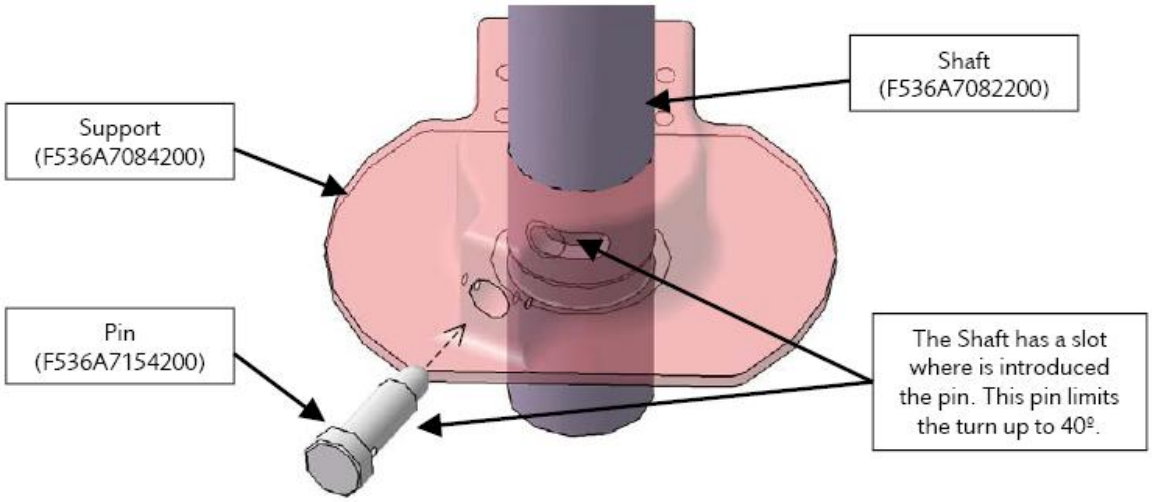

Figure 7. Detail of the slot in the shaft.

1. Turn the lock to open position and the mechanism to close position (latches extended). This position shall be a relax position.

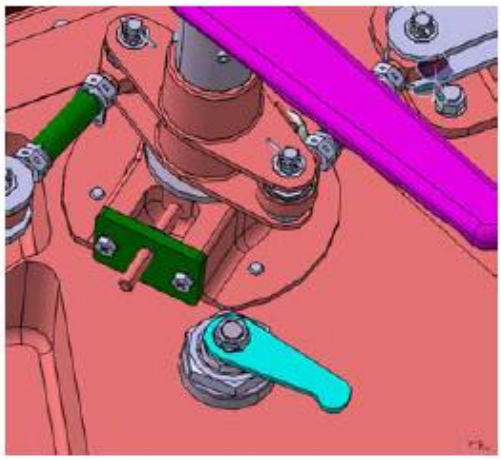

Figure 8. Lock open.

2. A perfect alignment between the shaft hole, the support hole and the alignment plate hole is required.

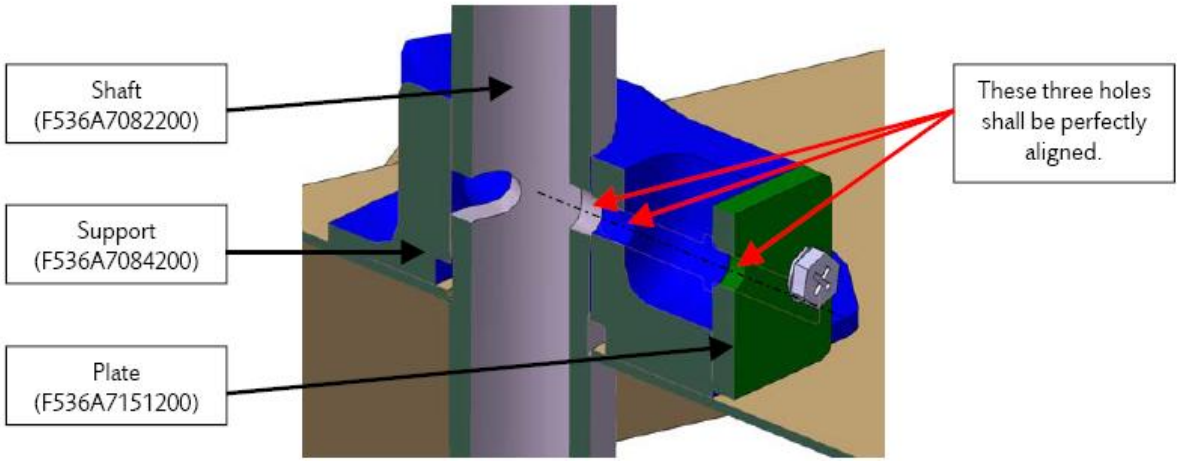

Figure 9. Alignment between Shaft, Support and Plate.

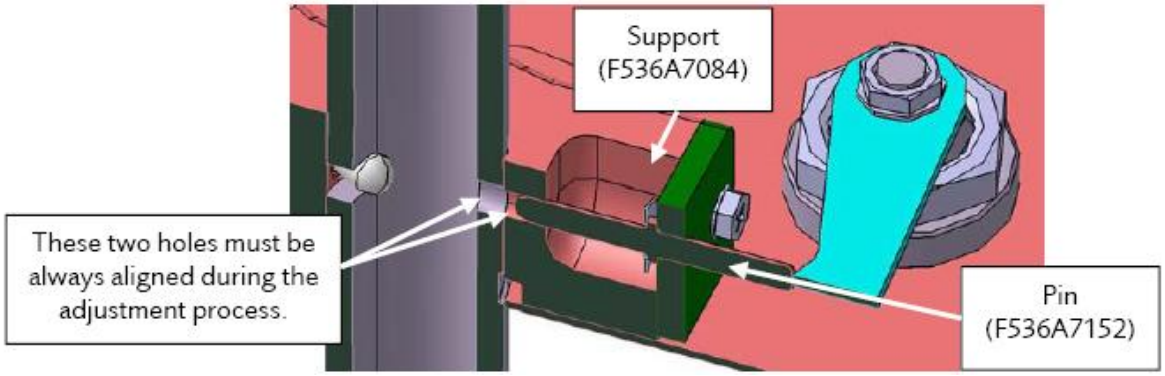

Figure 10. Alignment between Pin and Hole.

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.

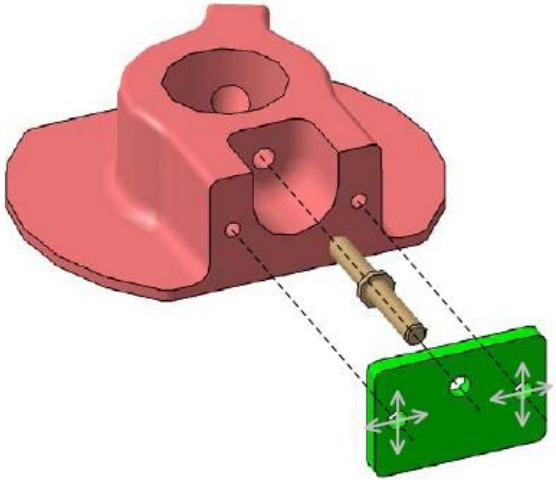

Figure 11. Adjustment of Plate F536A7152200.

Introduce the Pin F536A7152 into its hole and check that it is possible just before that the Pin F536A7154 had reached the end of the slot.

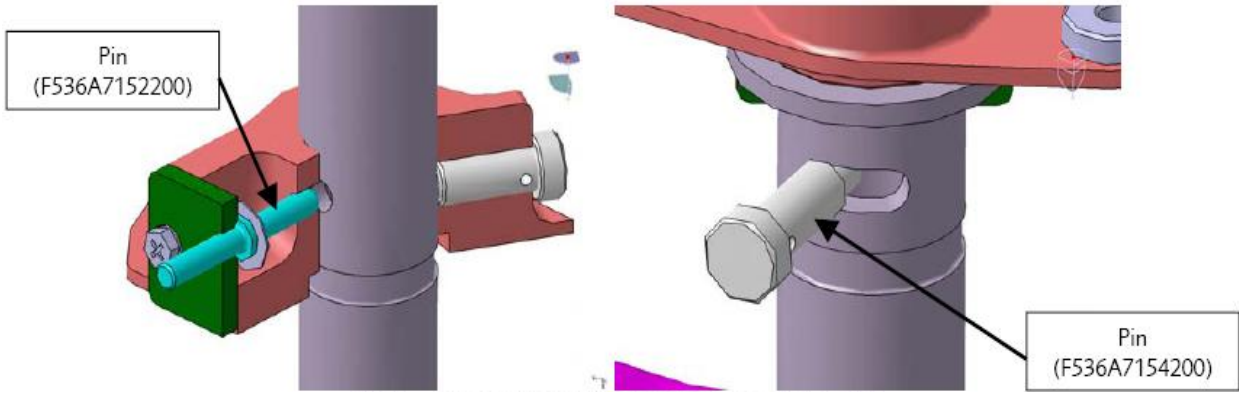

Figure 12. Pins positions with mechanism in close position.

3. Press several times the pin F536A7152 to check that it moves smoothly and does not get jammed. Note down the result in table 7.1 point "smooth movement of lock pin"

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

   The pin must protrude **15.5** ± **1 mm** (dimension B). Measure this dimension and record it in the table 7.1.

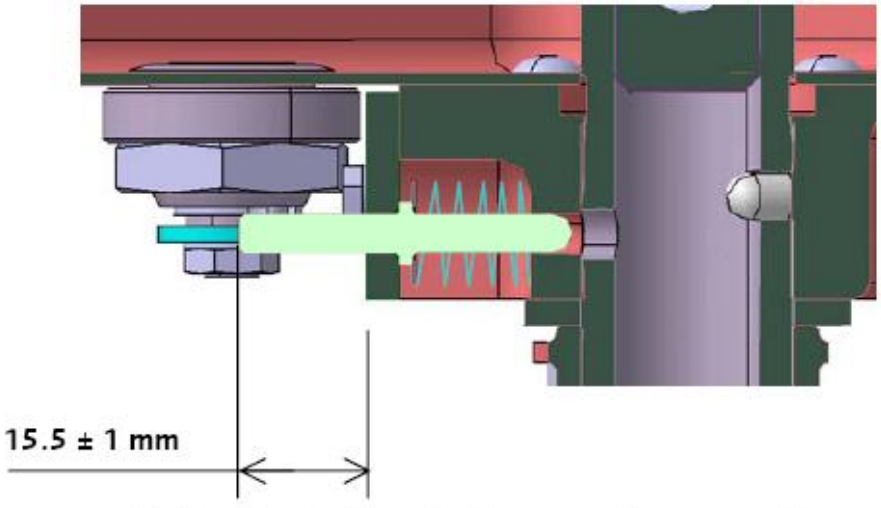

Figure 13. Section view of looking system in open position.

5. Use the gauge with PN PROO-01-5300-10001, as showed in the picture, to check maximum and minimum dimensions.

To check maximum dimension, be sure that the latch is not longer than the gauge dimension showed in the picture.

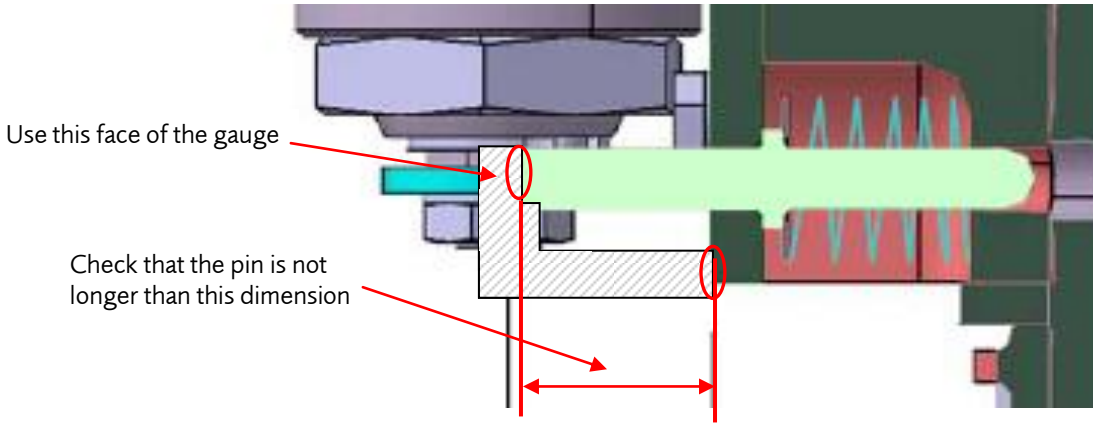

Figure 14. Maximum dimension for Extended locking Pin Gauge.

6. To check minimum dimension, be sure that the latch is not shorter than the gauge dimension showed in the picture.

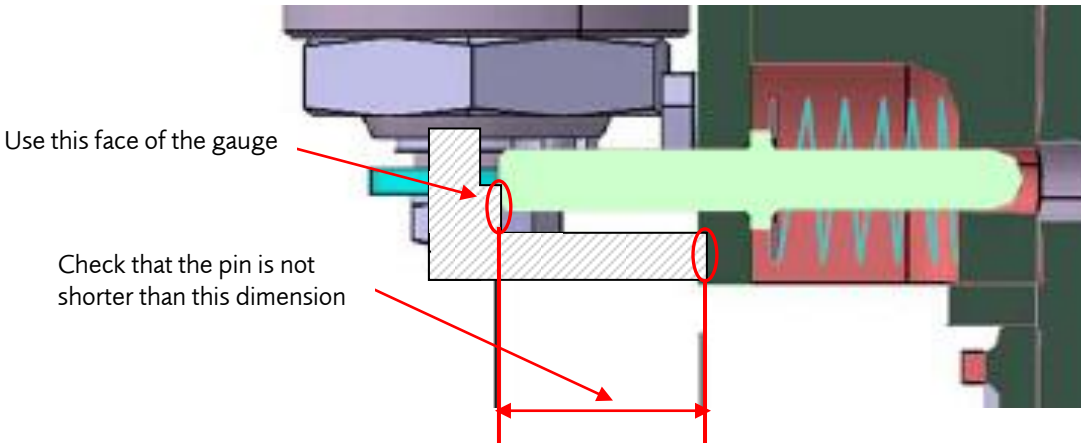

Figure 15. Minimum dimension for Extended locking Pin Gauge.

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

8. After located correctly the pin (F536A7152), adjust the lock assembly (F536A7145000).

   Main parts of the lock assembly (F536A7145000) are shown in the following figure:

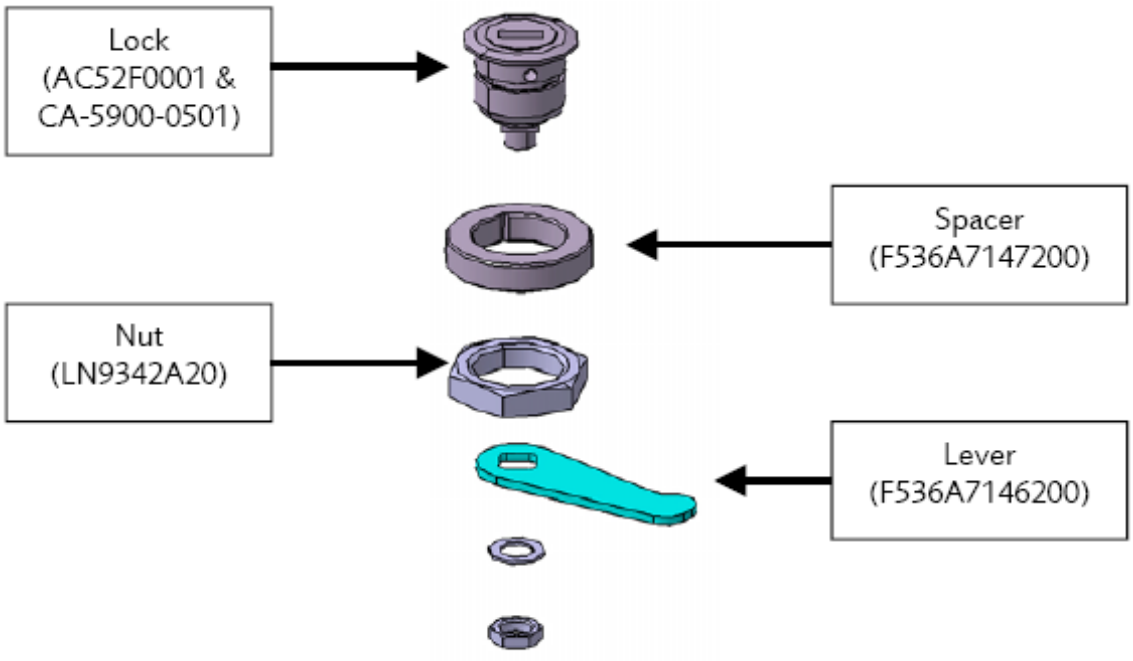

Figure 16. Exploded view of the F536A7145000 assembly.

The lever (F536A7146200) shall turns approximately 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.

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

   Check that the other dimension (dimension C) is **7.5** ± **1 mm** and record it in table 7.1.

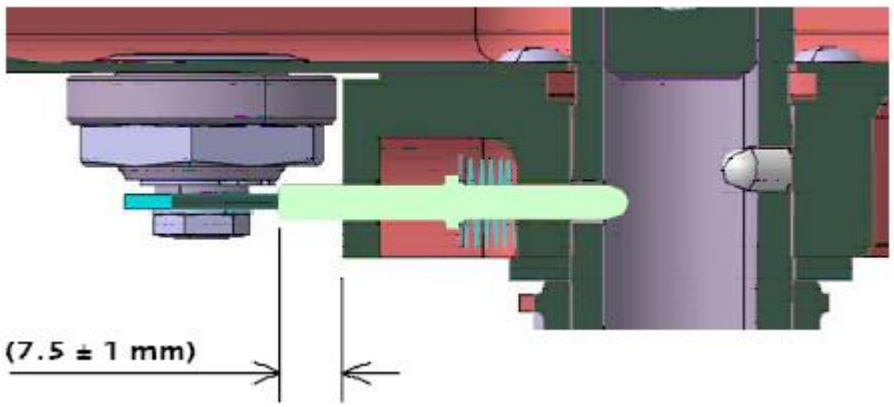

Figure 17. Section view of locking system in locked position.

10. Use the gauge with PN PROO-01-5300-10002, as showed in the picture, to check maximum and minimum dimensions.

To check maximum dimension, be sure that the latch is not longer than the gauge dimension showed in the picture.

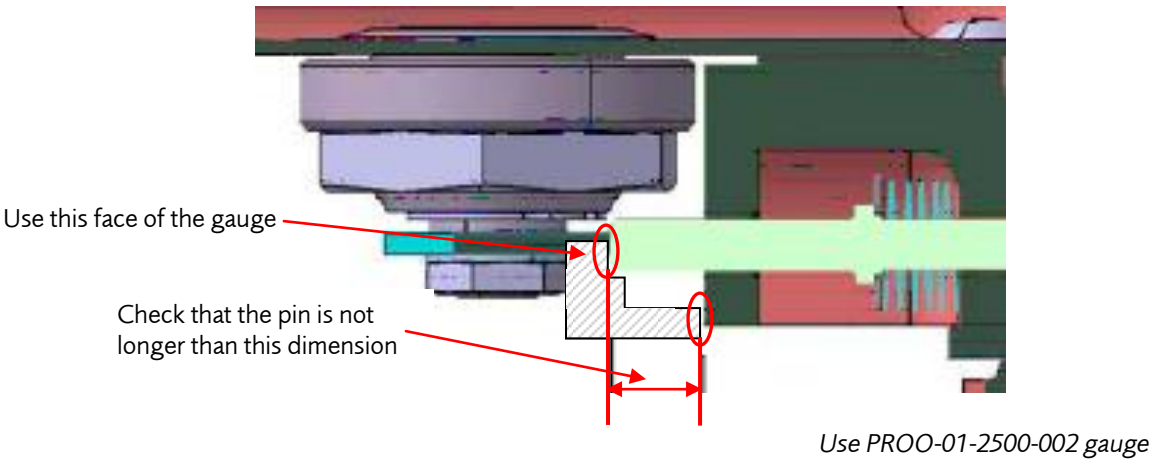

Figure 18. Maximum dimension for Retracted locking Pin Gauge.

11. To check minimum dimension, be sure that the latch is not shorter than the gauge dimension showed in the picture.

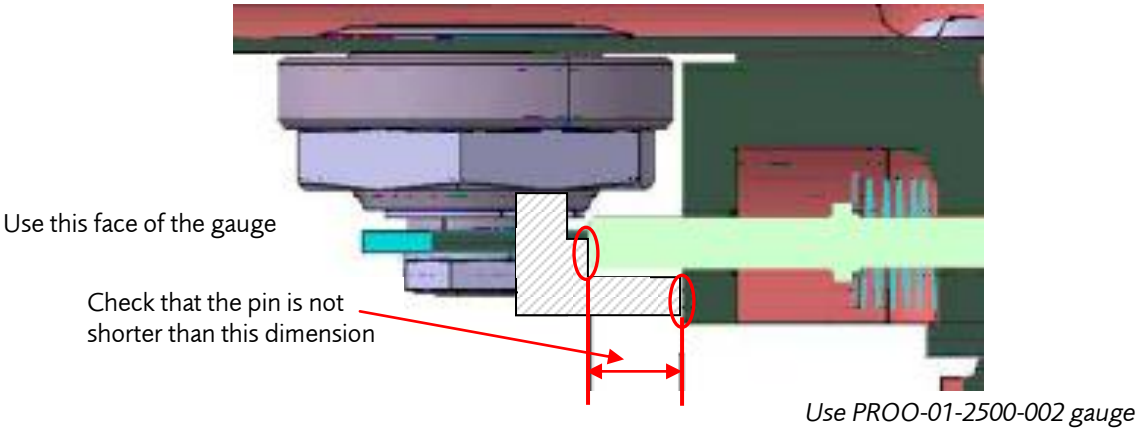

Figure 19. Minimum dimension for Retracted locking Pin Gauge.

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

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

    The hatch opens turning rightwards, and closes leftwards.

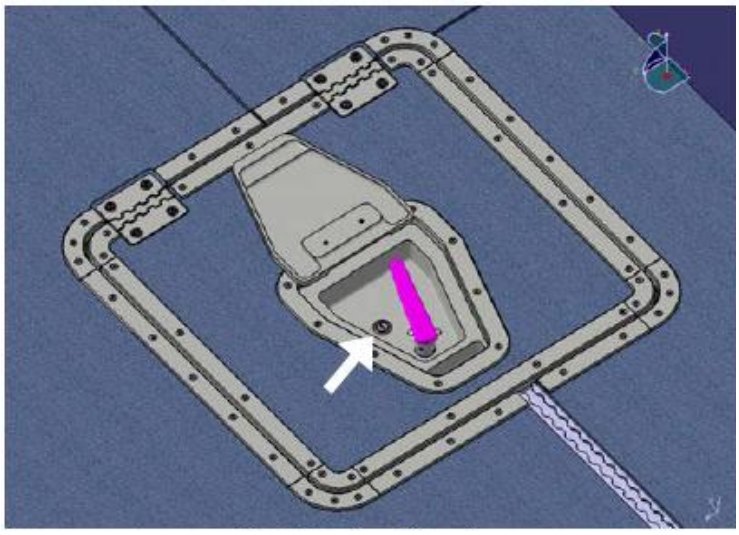

Figure 20. Lock location.

14. 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.

6.1.3 Mechanisms adjustment

Support the hatch in a place where it cannot 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 checking 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. Remove the cover (F536A7152200) and adjust the mechanism (using the adjustable rods) until the latches comply with the following mandatory dimensions. Measure dimension D1 and D2: **40.8±1 mm** for both latches and record it in table 7.1. Use the Latch Gauge with PN: PROO-01-5300-1003, as showed in the picture, to check maximum and minimum dimensions.

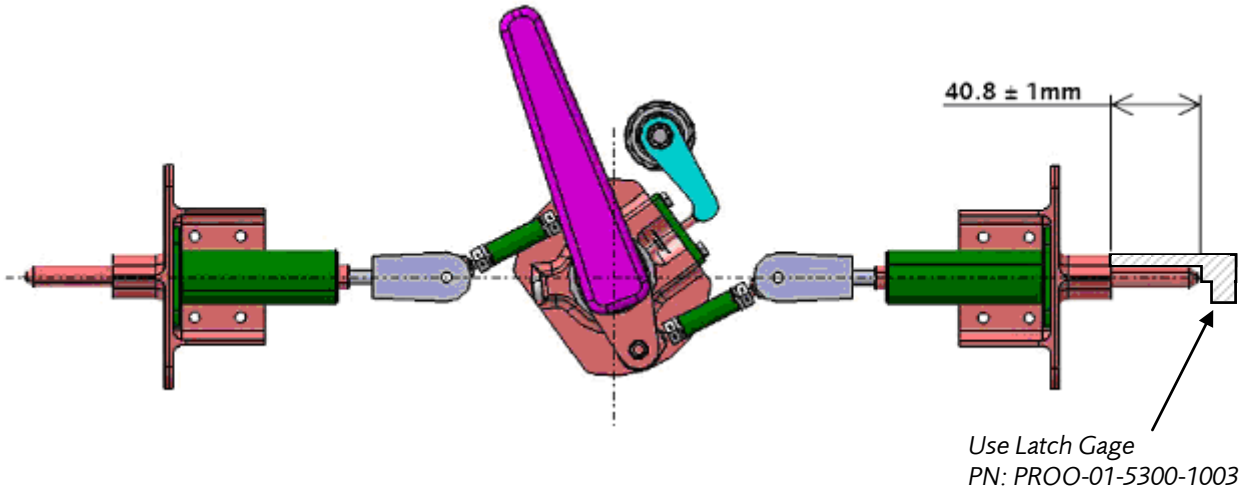

Figure 21. Mechanism dimensions in extended position.

6. To check minimum dimension, be sure that the latch is not shorter than the gauge dimension showed in the picture.

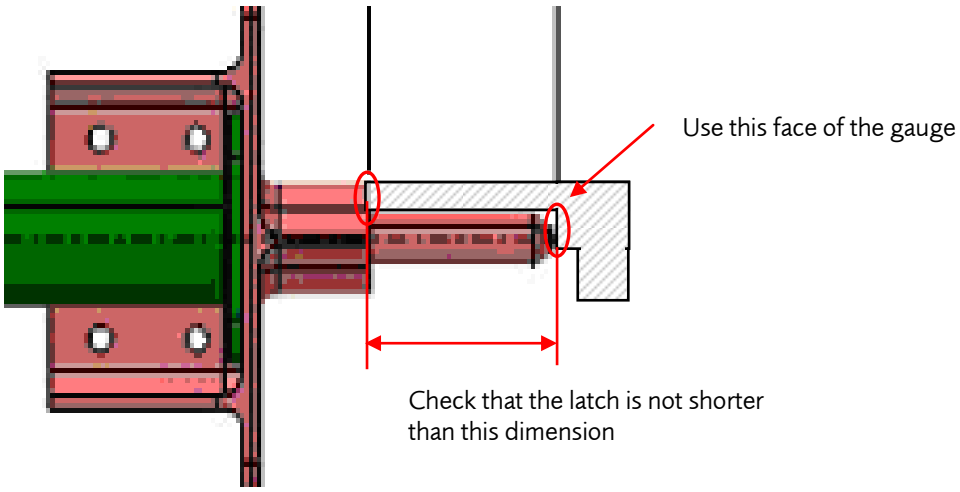

Figure 22. Detail of mechanism dimensions in extended position.

7. To check maximum dimension, be sure that the latch is not longer than the gauge dimension showed in the picture.

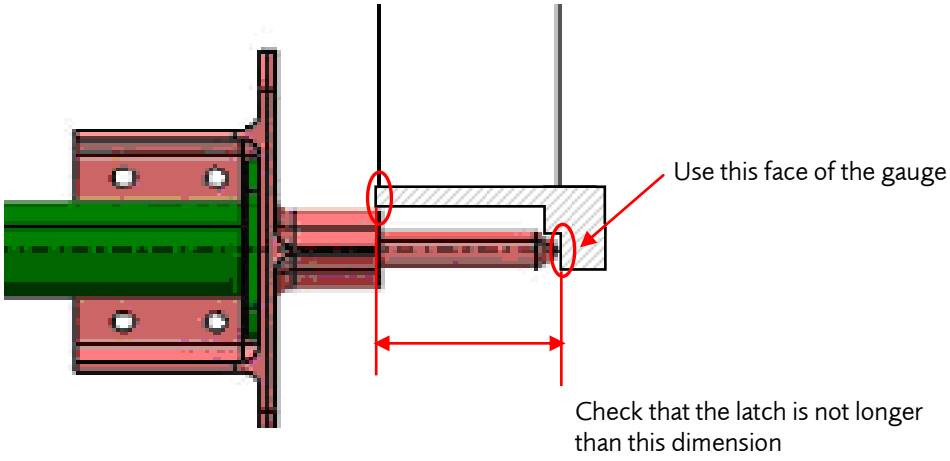

Figure 23. Detail of Mechanism dimensions in extended position.

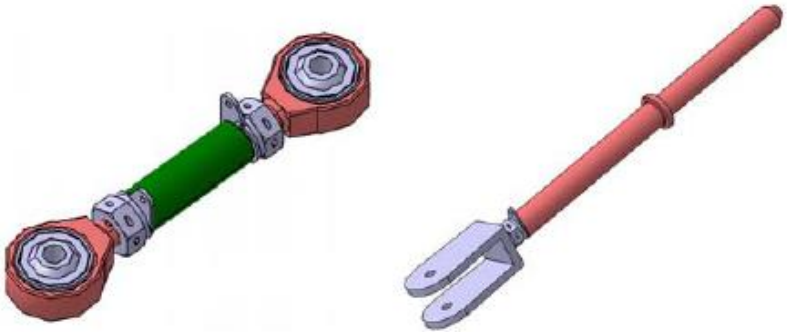

Figure 24. Adjustable rods of the mechanism.

8. Unlock the mechanism and turn it to open 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.

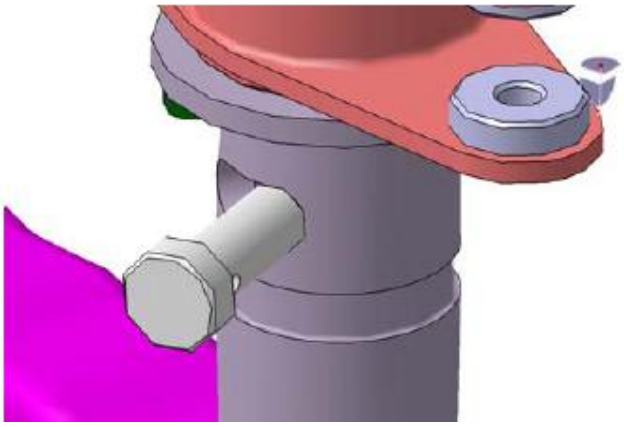

Figure 25. Pin position with mechanism in open position (Support F526A7084 not showed).

9. Check that dimension E1 and E2 for both latches: **16.8mm** or smaller can be achieved during the closing process. Record them in table 7.1. Use the Gauge with PN: PROO-01-5300-10004 as showed in the picture, to check that the latch is smaller than the dimension of the gauge.

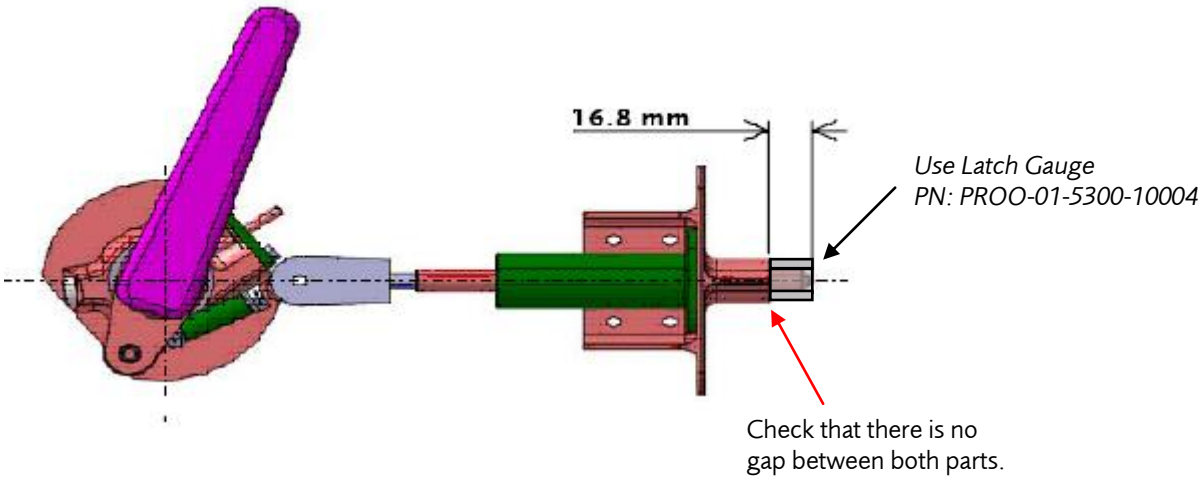

Figure 20. Mechanism dimensions in retracted position.

10. 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.

11. Install the cover (F536A7152200)

12. Block the adjustable rods using MS20995C20 lock-wire and bending the cotter pins

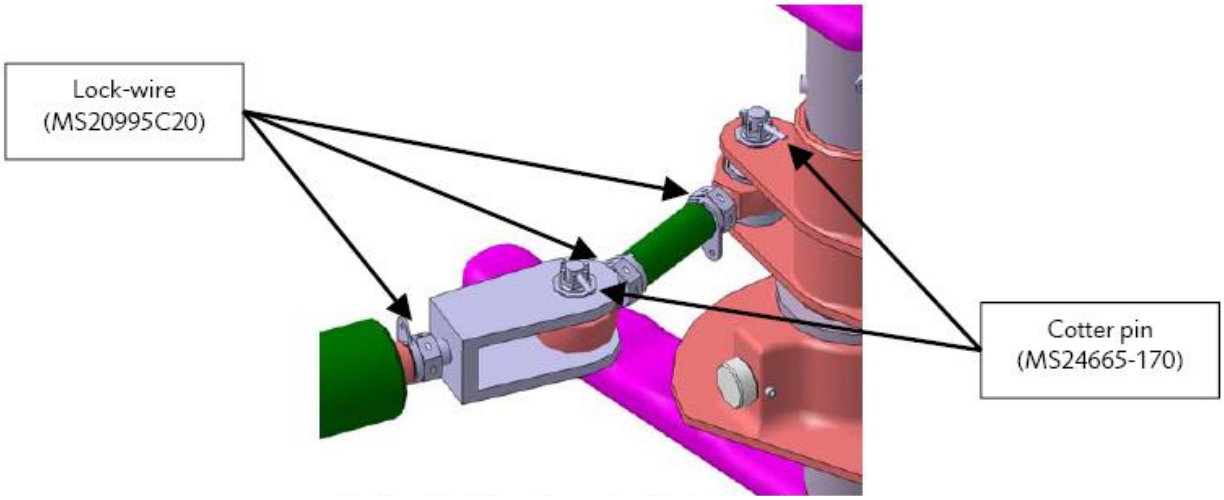

Figure 31. Blocking of opening/closing mechanism.

6.1.4 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.

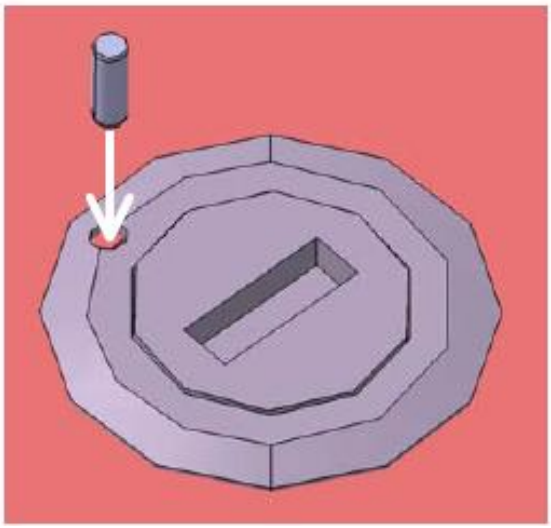

Figure 33. Blocking pin.

7 TEST RESULTS

Test readings have to be logged on Table 1 and any additional observations have to be recorded.

Measurement	Required value	Measured value	Date
Dimension A1	2 ± 1 mm		
Dimension A2	2 ± 1 mm		
Dimension B	15.5 ± 1 mm		
Dimension C	7.5 ± 1 mm		
Dimension D1	40.8 ± 1 mm		
Dimension D2	40.8 ± 1 mm		
Dimension E1	≤ 16.8 mm		
Dimension E2	≤ 16.8 mm		
smooth movement of lock pin	N/A	OK / FAIL	

Table 7.1. List of measurements Hatch Adjustment

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

Equipment	Manufacturer	Model	Tool identification	Calibration date	Next calibration date
Ruler and gauge					

Table 7.2. List of test equipment used

IMPORTANT NOTE: Any comments or remarks arisen during test execution shall be written down here and send to Engineering Department. Non-conformities shall be processed according to MP22501

NOTE: In Case of NCS, write down its number on Table 7.1

N.C.S Number	Date

Table 7.3

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

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

STAMP:	
DATE:	