

RECOMMENDED SERVICE BULLETIN**NUMBER:** SB13-01**REVISION:** 00**DATE:** January 16, 2013**SUBJECT:** CARGO DOOR CATCH SWITCH ACTUATOR UPGRADE**EFFECTIVITY:**

As required for KODIAK 100 Series Aircraft Serial Numbers: 100-0001 through 100-0067.

SUMMARY:

This Field Service Instruction provides guidance for installing new switch actuators on the cargo door warning switches.

COMPLIANCE:

Quest Aircraft Company recommends this Service Bulletin be completed on or before the next 100 Hour Inspection or Annual Inspection whichever comes first.

ATTACHED DOCUMENTS:

Document #:	Revision:	Document Title:
FSI-038	02	Cargo Door Catch Switch Actuator Upgrade

FAA APPROVAL STATUS:

The instructions attached to this Service Bulletin have demonstrated compliance with all applicable Federal Aviation Regulations and are approved by the Federal Aviation Administration.

CREDIT AND WARRANTY INFORMATION:Quest Aircraft Company will supply Service Kit FSI-038 at no charge to the customer. Quest is not offering reimbursement for labor associated with this Service Bulletin. To obtain Service Kit FSI-038, contact Quest Customer Service at customer@questaircraft.com.**Quest Customer Service****Service Bulletin: SB13-01****Phone: (208)263-1111 Toll Free: 1(866)263-1112****Email: Customercare@questaircraft.com****SPECIAL INSTRUCTIONS:**

N/A

RECOMMENDED SERVICE BULLETIN***RECOMMENDED SERVICE BULLETIN***



FIELD SERVICE INSTRUCTION

TITLE: **Cargo Door Catch Switch Actuator Upgrade**
SERIAL RANGE: **As Required**
JASC CODE: **5270**

PAGE: **1 of 9**
REPORT NO.: **FSI-038**
REVISION: **02**

SUBJECT

This Field Service Instruction provides guidance for installing new switch actuators on the cargo door warning switches.

AFFECTED MANUALS AND PUBLICATIONS

None

INDUSTRY REFERENCES

None

WEIGHT AND BALANCE

Negligible

MANPOWER

The estimated man-hours and minimum number of persons required to perform this Field Service Instruction are listed below. The "Minimum Persons" refers only to maintenance personnel or installers and, unless otherwise specified within this instruction, does not include additional personnel that may be needed solely to comply with safety requirements (for example, safety observers that are not performing tasks within this instruction). It is the responsibility of maintenance personnel to comply with safety requirements, including having a safety observer available as needed.

Estimated Man-hours: 4 hours

Minimum Persons: 1 person

If more than the minimum personnel perform this instruction, the actual man-hours required may be reduced due to increased efficiencies. As appropriate, Quest encourages the use of additional personnel; man-hour estimates are based on the minimum personnel required.

RECORD OF COMPLETION

Update the appropriate maintenance records.

Quest Aircraft Company, LLC
1200 Turbine Drive
Sandpoint, ID 83864



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REVISION RECORD

REV	PAGE	CHANGE DESCRIPTION
00	All	Initial Release
01	4	Added item 2-1-2, 2-1-3, 2-4-3. Changed item 2-2-1: was 3M 590, is 3M 760 (equivalent for this application).
	6	Changed steps to rotate shims instead of trimming.
	7	Updated text to install new hardware.
02	5	At Section 3.0 "General," changed "trimming the door catch shims" to "rotating the door catch shims."
	6	Changed heading 5.1 from "Trim the Shims" to "Rotate the Shims."
		At Section 5.1, Step 4, changed "two housing screws" to "two screws."
		At Figure 5-1, added part number to read "Remove two (2) screws (P/N MS24694-S113)."
		At Figure 5-1, added part number to read "Current Actuator Arm (P/N 100-260-1841)."
		At Figure 5-1, added part number to read "New Actuator Arm (P/N 100-260-1842)."
	At Figure 5-1, added part number label (P/N MS35275-205) to the figure showing the cargo door catch assembly AFTER Modification.	
	7	At Section 5.2, added Step 3: "Align actuator arm square with switch."
Inserted new Section 5.3, "Perform Functional Check."		
9	Updated cross-references at 5.4 (was 5.3): changed from "Repeat Steps 4 through 5.2" to "Repeat steps in Sections 5.1 through 5.3."	
	At 5.5, Step 3, changed "Using 3M™ 590" to "Using 3M™ 760."	



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1. Special Safety Instructions

1.1 Warnings

Failure to comply with “Warnings” contained in this instruction may result in financial loss, significant delay in the completion time, and/or serious injury to personnel.

1.2 Cautions

Failure to comply with “Cautions” contained in this instruction may result in the destruction of components, unnecessary complications, the need to reverse completed work, and/or delays in the completion time.

1.3 Notes

“Notes” are provided when additional information may lead to an increase in efficiency.

2. Parts, Tools, and Equipment

The following tables describe the parts, tools, and equipment necessary to successfully complete this instruction. Where applicable, reference to drawings provided with this instruction is provided.

Table 2-1: Parts and Tools Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-1-1	100-260-1842	4	Switch Actuator	N/A	N/A
2-1-2	MS35275-205	8	Actuator Arm Screws	N/A	N/A
2-1-3	AN525-832R7	16	Housing Screws	N/A	N/A

Table 2-2: Consumables Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-2-1	760-BLACK	1	3M™ 760 Adhesive/Sealant ¹	N/A	N/A

1: Consumables may be shipped separately from the primary kit.

Table 2-3: Serial-Number-Specific Parts Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-3-1	N/A	N/A	N/A	N/A	N/A

Table 2-4: Parts and Tools NOT Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-4-1	Commercially Available	1	Sharp-Edged Tool	N/A	N/A
2-4-2	Commercially Available	AR	Screwdriver Set	N/A	N/A
2-4-3	Commercially Available	1	Caulking Gun	N/A	N/A

3. General

This Field Service Instruction provides guidance for installing the four (4) new catch switch actuators on the cargo door warning switches, as well as rotating the door catch shims to prevent interference with the new actuator arm.

4. Preparation

Perform the following steps to gain access to each door catch assembly (P/N 100-260-1800). Refer to **Figure 4-1** for a general overview of the switch locations.

1. As necessary, remove screws from the door sill and cut the door sill adhesive in the area surrounding the door catch, using a flat, sharp-edged tool.

⚠ CAUTION ⚠

Be very careful to only cut the adhesive and not to damage the door seal or structure. If damage to the door seal does occur, contact Quest Aircraft Company for further instructions.

2. Peeling back the door sill, remove the four (4) screws (P/N AN525-832R7) attaching the door catch assembly to the door frame.
3. Remove screws from the interior, as necessary, in order to pull the interior panel back far enough to gain access to the door catch assembly.
4. Disconnect the Molex plug and carefully remove the assembly by sliding it between the airplane structure and the interior.

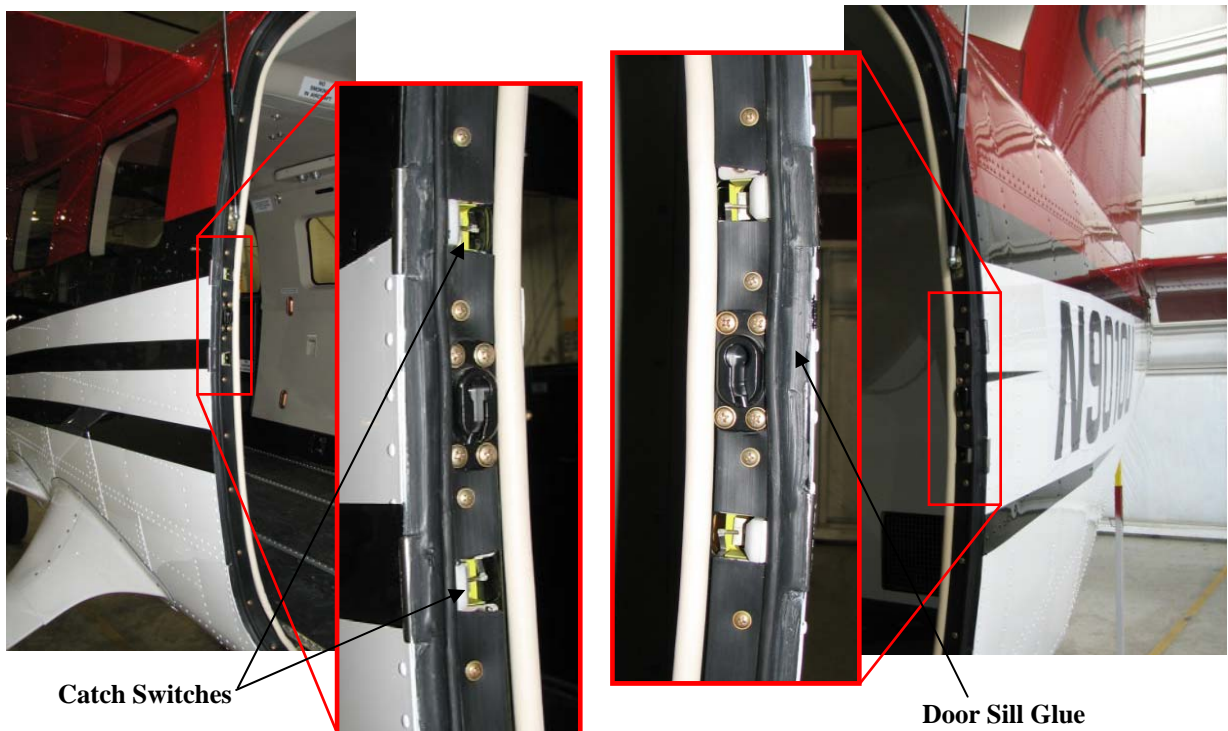


Figure 4-1: Location of Catch Switches

5. Instructions

Reference **Figure 5-1** while performing the following steps on each door catch assembly.

5.1 Rotate the Shims

1. Remove the two (2) screws (P/N MS24694-S113) holding the door catch assembly together.
2. Remove the shims located on the top side of the assembly.
3. Rotate the shims 180° and install as shown in **Figure 5-1**. This will allow clearance for the new actuator arm.
4. Reinstall the shims into the housing and reinsert the two screws (P/N MS24694-S113).

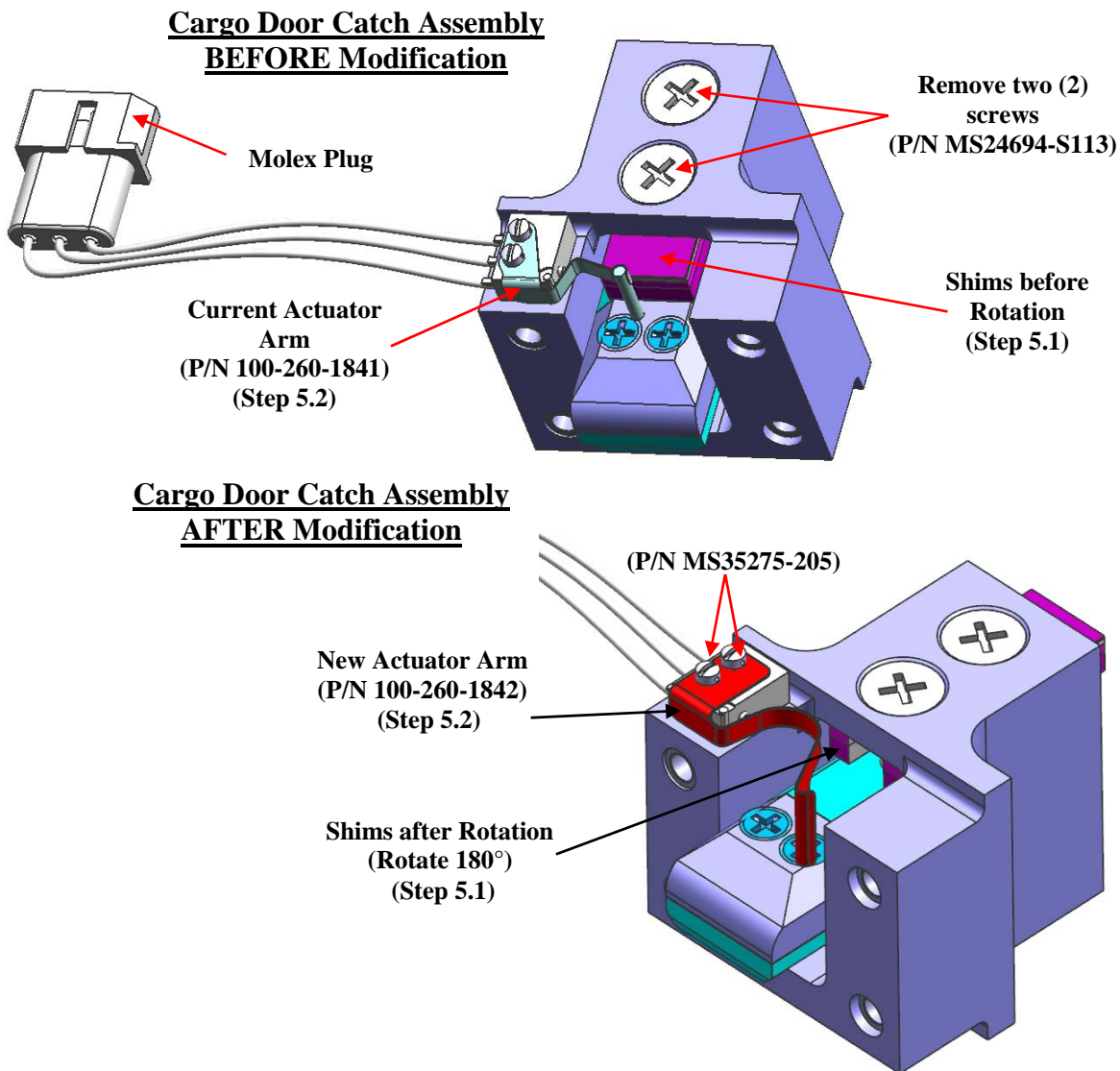


Figure 5-1: Illustration of Cargo Door Catch Assembly Before/After Modification

5.2 Install the New Switch Actuator

1. Remove the two (2) screws (P/N MS35275-205) attaching the switch actuator arm (P/N 100-260-1841) to the snap action switch (P/N 100-260-1840).
2. Replace the existing actuator arm (P/N 100-260-1841) with the new actuator arm (P/N 100-260-1842) and install the new screws (P/N MS35275-205). Refer to **Figure 5-1**.
3. Align actuator arm square with switch.

5.3 Perform Functional Check

Perform a functional check as follows:

1. Connect multimeter to cargo door switch plug (Molex plug) pins 1 and 2 (**Figure 5-2**).
2. Using a ruler, depress actuator arm until multimeter reads a closed circuit (**Figure 5-3**).

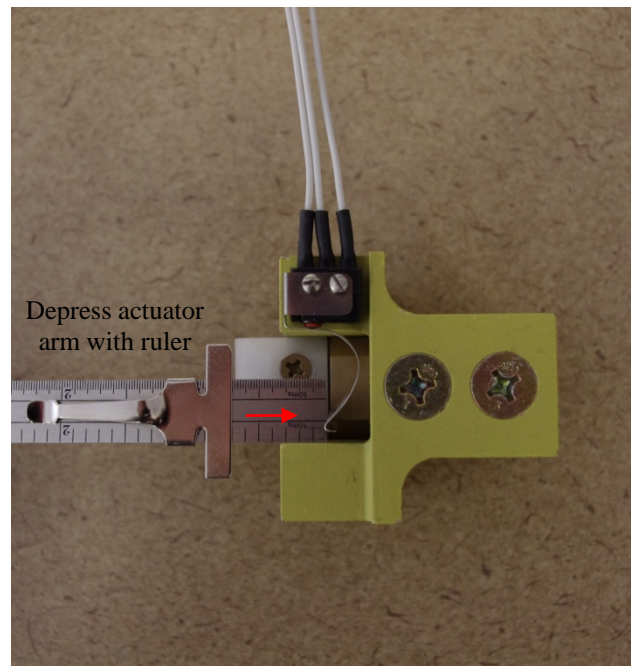
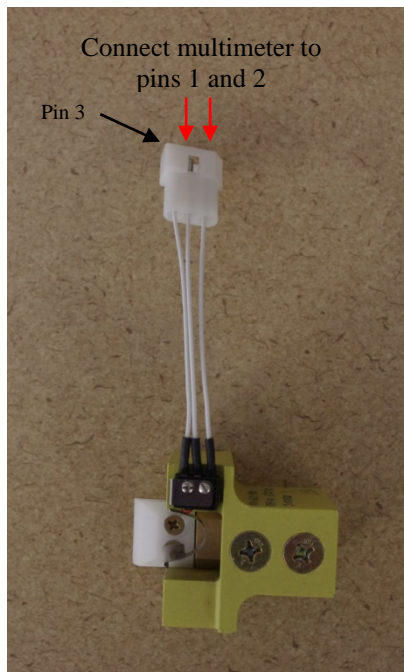


Figure 5-2: Molex Plug and Pin Location

Figure 5-3: Wear Pad/Actuator Arm Distance

3. Note the distance between the edge of the wear pad and the tip of the switch actuator arm.
 - a. If distance is less than .700 in., verify actuator arm screws are tight and proceed to step 4.
 - b. If distance is greater than or equal to .700 in., perform the following:
 - Loosen actuator arm screws.
 - Rotate the actuator arm slightly (**Figure 5-4**).
 - Perform a functional check.
 - Repeat as needed.
4. Verify clearance throughout full travel of actuator arm, ensuring that it does not catch on the wear pad or other components (**Figure 5-5**). Adjust actuator arm as needed.

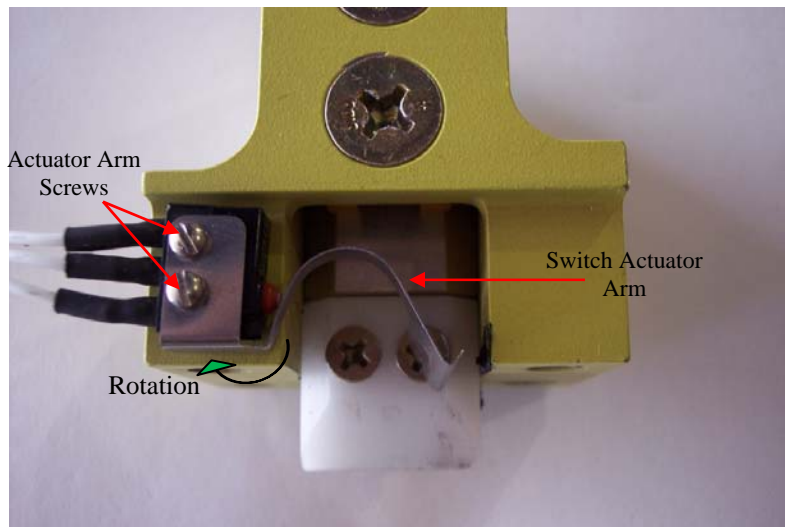


Figure 5-4. Rotation of Switch Actuator Arm

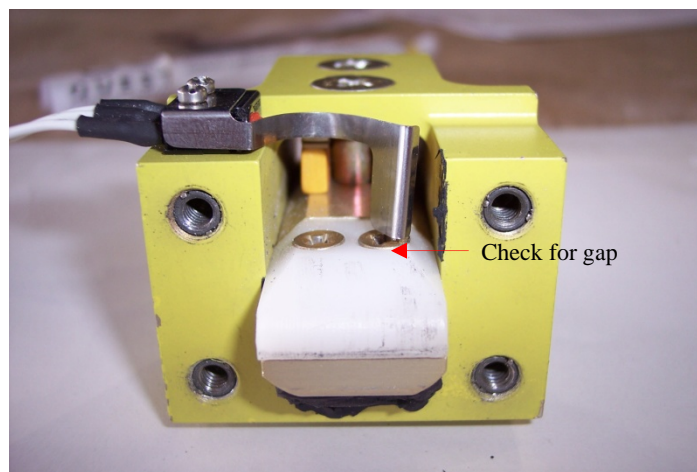


Figure 5-5. Actuator Arm/Wear Pad Clearance



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5.4 Repeat Steps

Repeat steps in Sections 5.1 through 5.3 on the three (3) remaining door catch assemblies.

5.5 Reinstall Components

1. Reinstall all cargo door catch assemblies. Plug in each switch Molex connector (P/N 03-09-2032) and install four (4) new housing screws (P/N AN525-832R7).
2. Perform an operational check of the Cargo Door Annunciation system in accordance with the *KODIAK 100 Maintenance Manual*, Chapter 52.
3. Using 3M™ 760 sealant, adhere the door sill back into its original location. Follow all of the manufacturer's safety and cure time instructions.

▲ NOTE ▲

Ensure a continuous fillet of sealant around the removed sill area.

4. Reinstall all screws previously removed from the door sill and interior.

6. Completion

Record all work performed in the appropriate maintenance records.

---END---