

# Roof Switch Failure Symptoms

by Ed Borland 02/15 Rev 1

## Normal Roof Open Cycle

**Ignition in “Run” or Engine Running, with truck stopped.**

**Brake must be pressed.**

**Console “open” button pressed.**

**Windows start down.**

**Roof tonneau cover unlatches**

**(when windows are past the detent position).**

**Windows open fully**

**Roof tonneau cover opens fully.**

**Tonneau cover extension - extends fully.**

**Roof unlatches.**

**Roof retracts into the storage compartment**

**Roof tonneau cover closes and latches.**

**Two “Dings” indicate the open cycle is complete.**

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## Normal Roof Close Cycle

**Ignition in “Run” or Engine Running, with truck stopped.**

**Brake must be pressed.**

**Console “close” button pressed.**

**Windows go down (if not already down).**

**Roof tonneau cover unlatches and opens.**

**Roof rises to the window header and latches**

**Roof tonneau extension retracts.**

**Roof tonneau cover closes and latches.**

**Two “Dings” indicate the open cycle is complete.**

**If you continue to hold the Close button down, the windows will close.**

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**The roof system has 6 switches:**

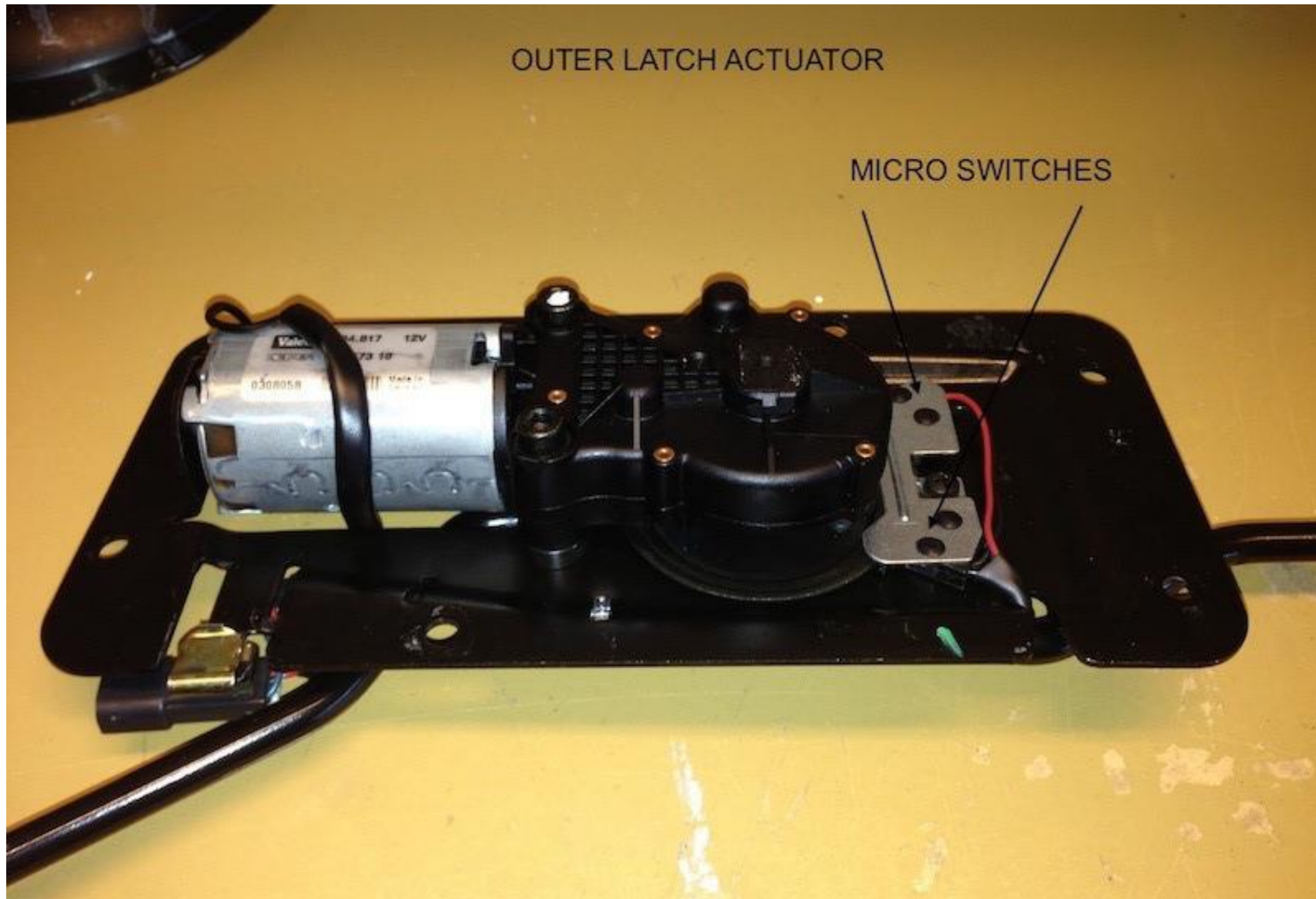
**1- Console switch**



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**2 - Roof “Outer Latch Actuator” micro switches, located in the center of the windshield header.**



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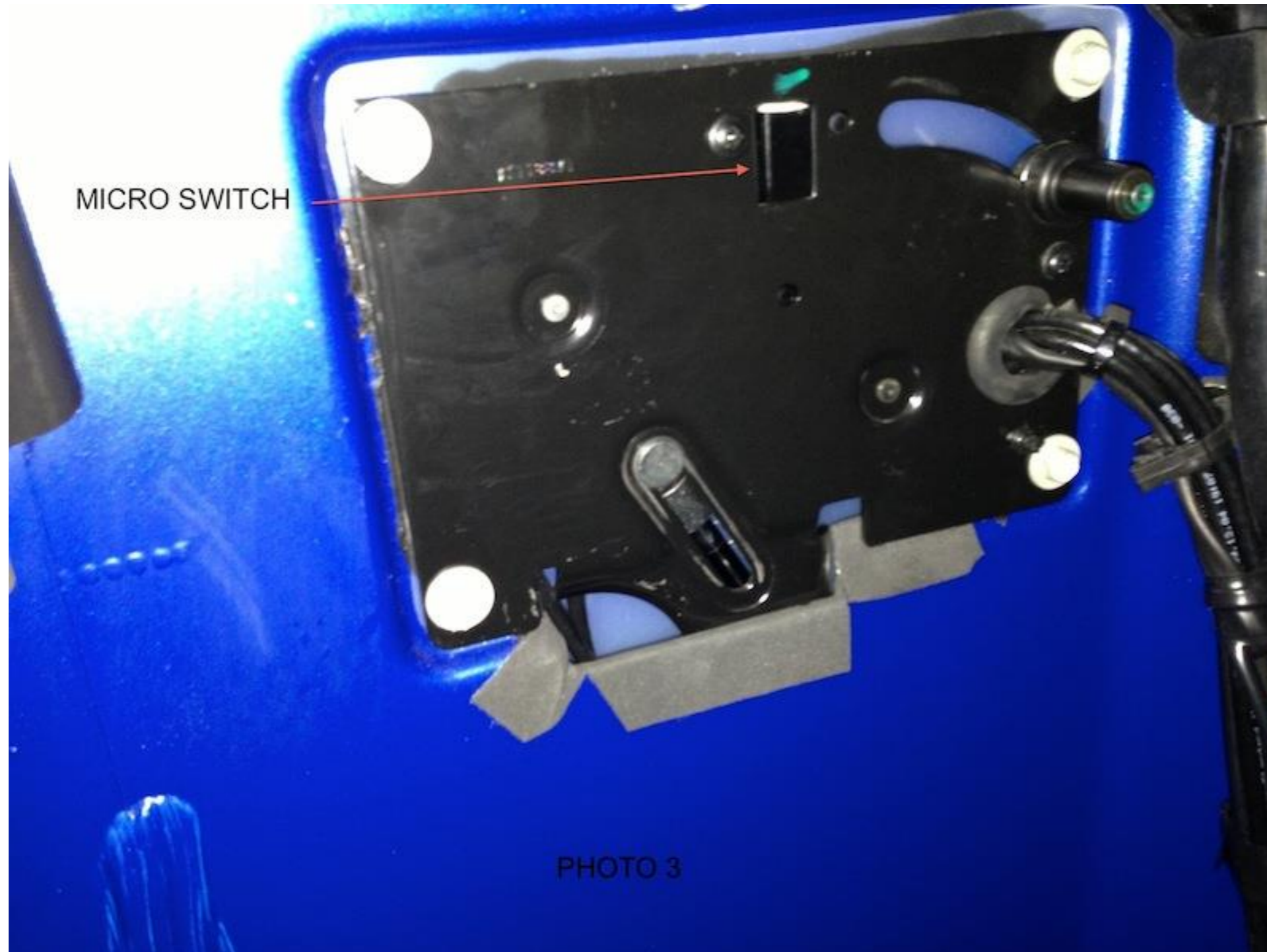
**1 - “Striker” switch, located on the left side of the windshield header.**



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**2 - Storage Compartment Latch/Unlatch micro switches, located in latch assembly on each side of storage compartment.**



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## Symptom 1.

Starting with the Roof open or closed.

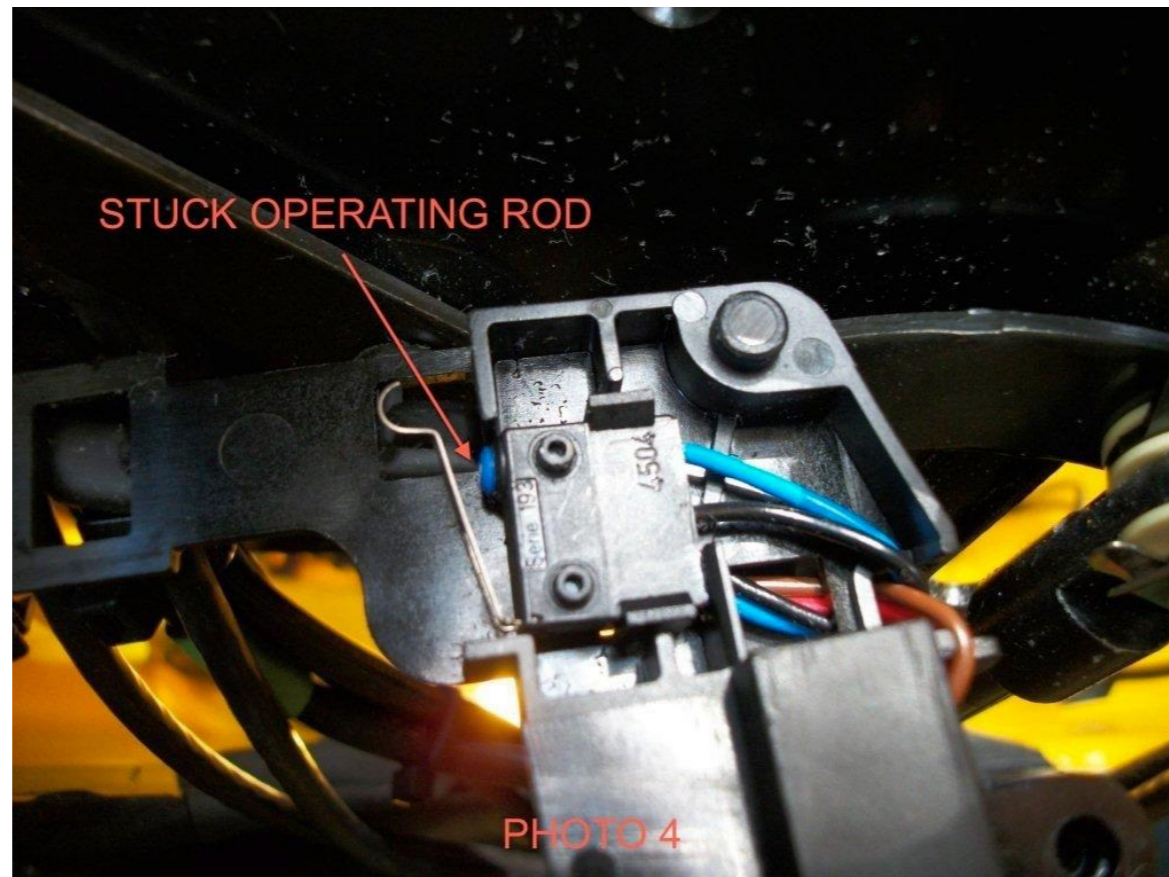
The tonneau cover unlatches.

The tonneau cover does not move at all.

Roof operation stops.

Cause – A Storage Compartment Latch micro switch circuit failure.

This is the most common roof system failure.



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## **Symptom 1 - Corrective Actions**

**Open the tonneau cover manually.**

**Cut the tie wraps & open the cable clamps (if any) on the 2 tonneau latch assemblies.**

**Unbolt the latch assemblies & wiggle out of their mounting.**

**Unscrew the Micro switch from the bracket.**

**Lubricate the micro switch operating rod with WD40.**

**Exercise the micro switch until the operation rod operated freely.**

**Remount the latch assemblies.**

**Reclamp the cable clamp. (if any)**

**Reinstall the tie wraps**



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## Symptom 2

The tonneau cover unlatches, **moves slightly and stops.**

DIC indication - “Roof Timeout”.

The tonneau cover linkage is **binding**, causing it to timeout.

### Causes of binding:

**Bent bracket hitting the tonneau cover extension hydraulic cylinder.**

**Wire/tubing bundle interfering with travel.**

**Lack of hinge lubrication.**

**Bent hinge.**

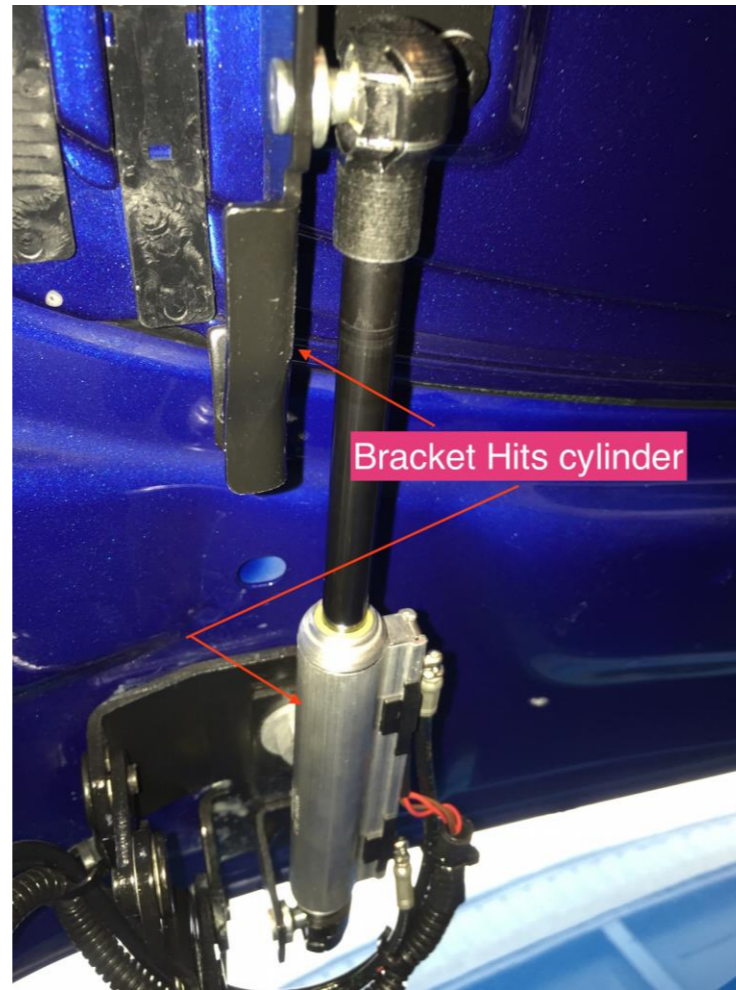
**A latch bracket out of adjustment.**

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## Symptom 2 - Corrective Actions

**Check the tonneau extension cylinders for bracket binding.**



**Inspect wire/tubing bundles, latch brackets for binding**

**Inspect latch bracket adjustment. Inspect hinges.**

**Lubricate hinges**

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## Symptom 3.

**Starting with the roof closed**

**The Roof Open cycle operates normally until roof unlatches.**

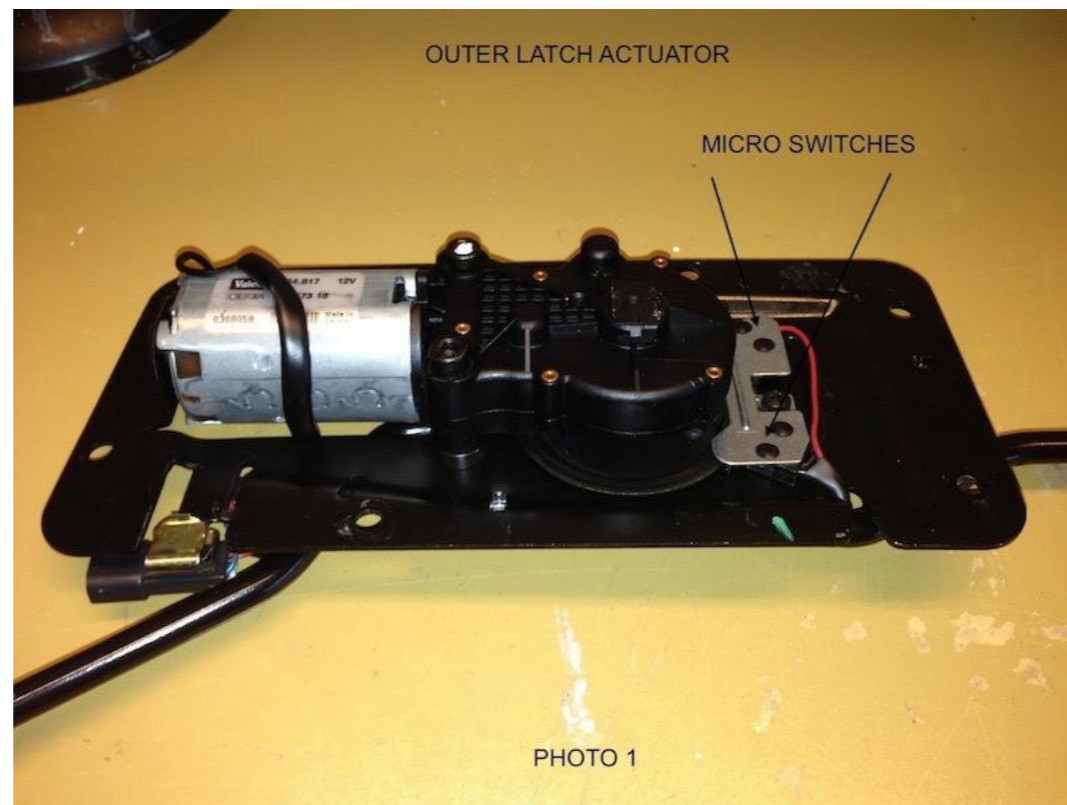
**Roof stops operating.**

**Roof does not separate from the header.**

**The Console switch will re-close the roof fully.**

**DIC indication – none**

**Cause – Outer Latch Actuator “Latched” micro switch circuit failure.**



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## **Symptom 3 - Corrective Actions**

**Remove the sunvisors rotation clips**

**Remove the windshield header center black molding & unplug the seat belt light.**

**Unplug the Outer Latch Actuator Motor & contact electrical connectors.**

**Inspect, test the electrical connectors for good contact.**

**Unclip the operating arm ball clips.**

**Unbolt the OLA**

**Test the micro switches and replace as needed.**

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## Symptom 4.

Starting with the Roof closed.

The Roof “open” cycle operates normally until roof is unlatched.

The roof opens a few inches and stops.

The Console switch will re-close roof fully.

DIC indication – “Roof Cycle Timeout”

Cause – Striker switch “Over Center” contact circuit failure.



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## **Symptom 4 - Corrective Actions**

**Remove the sunvisors rotation clips**

**Remove the windshield header center black molding & unplug the seat belt light.**

**Unplug the Striker Switch electrical connector & inspect for good connections.**

**Remove Striker Switch & inspect and test**

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## SYMPTOM 5.

Starting with the Roof open.

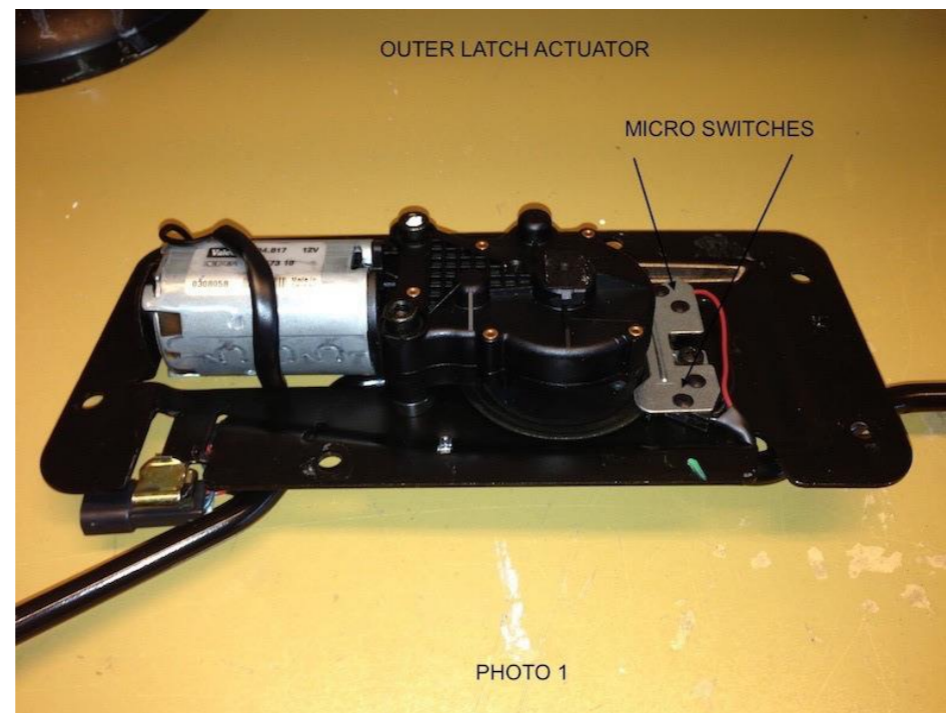
The Roof will close normally until the Roof latches - the Roof operation stops

**The Roof storage compartment is left open.**

DIC indication – Roof cycle timeout

The Console switch will re-open roof fully

**Cause – Outer Latch Actuator “Released” micro switch circuit failure.**



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## **Sympton 5 - Corrective Actions**

**Remove the Sunsize rotation clips**

**Remove the windshield header center black molding & unplug the seat belt light.**

**Unplug the Outer Latch Actuator Motor & contact electrical connectors.**

**Inspect, test the electrical connectors for good contact.**

**Unclip the operating arm ball clips.**

**Unbolt the OLA**

**Test the micro switches and replace as needed.**



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## Symptom 6.

**Starting with the Roof open**

**Roof close cycle operates normally until tonneau cover is unlatched.**

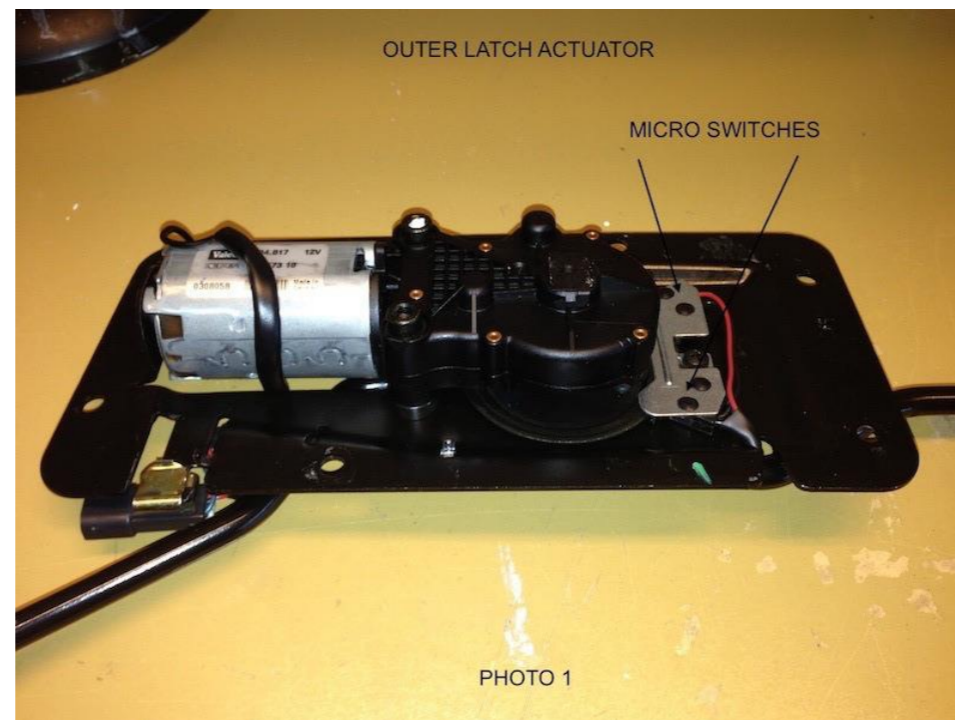
**Roof operation stops.**

**The Console switch will re-open roof fully.**

**DIC indication – none**

**Cause – Outer Latch Actuator “Latched” micro switch failure.**

**Symptom 1 & 6 are identical - Symptom 1 is most likely the cause.**



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## **Symptom 6 - Corrective Actions**

**Remove the Sunvisors rotation clips**

**Remove the windshield header center black molding & unplug the seat belt light.**

**Unplug the Outer Latch Actuator Motor & contact electrical connectors.**

**Inspect, test the electrical connectors for good contact.**

**Unclip the operating arm ball clips.**

**Unbolt the OLA**

**Test the micro switches and replace as needed.**