

**Replacement of Landing Gear Bracket  
RevoLT**

**SD-1001**

**Evolution Trikes**

**August 1, 2019**

**Status: Mandatory**

## ***Background:***

Excessive wear on landing gear bolt has been found on multiple RevoLTs and is below safe operating limits.

## ***Scope:***

The following serial numbers of the RevoLT weight-shift-control aircraft are affected by this safety directive:

001001- 001016

## ***Authorized Persons:***

An owner/operator is allowed to execute this safety directive in accordance with the instructions in this directive.

## ***Tools and Articles Required:***

- 1) Box cutter
- 2) (2) Soft ties
- 3) Towel
- 4) Tire dolly or block (optional)
- 5) Impact driver (optional)
- 6) Drill
- 7) Wire cutters
- 8) Phillips screwdriver
- 9) 3/8" ratchet
- 10) 3/8" Swivel head extension (optional)
- 11) 10 mm wrench
- 12) 7/16" wrench
- 13) 7/16" socket
- 14) 9/16" offset ratchet wrench
- 15) 9/16" wrench
- 16) 9/16" ratchet wrench (optional)
- 17) 9/16" socket
- 18) 3/8" step bit (optional)
- 19) 3/8" drill bit
- 20) Mallet
- 21) Hammer (optional)
- 22) Bungee cord
- 23) Torque Wrench
- 24) Engine hoist, cum-a-long or ratchet straps

**Kit supplied by Evolution Aircraft includes:**

- Landing gear bracket
- (2) 3/8” bolts
- Locktite or equivalent non-permanent medium strength anti-vibration compound

**Compliance:**

Compliance is mandatory and has to be achieved prior to next flight

**This is how to comply with this directive:**

See video link here: [https://youtu.be/xIXFdTwc\\_8U](https://youtu.be/xIXFdTwc_8U)

- Lift RevoLT to where the shocks are relaxed, landing gear can be extended and the weight is off of the bolts (almost weightless).
  - To use engine hoist: attach soft ties to horizontal bar above propeller to the engine hoist hook. Can also use a cum-a-long or ratchet straps.
- Use 9/16” wrench and 9/16” ratchet wrench to remove the landing gear pivot bolt nut in the landing gear bracket. Be cautious of the radiator.
- Tap the landing gear pivot bolt through using screwdriver or punch with mallet, if needed, and remove the pivot bolt. There will be a small Delrin spacer in the back and a large spacer on the front of the landing gear. Do not reverse them.
- Use dolly or wood to prop up the rear tires to get the landing gear clear so there is more room to work.
- Use bungee cord to hold the back seat forward. Remove the quick pins to allow back seat to swivel forward. Place the bungee through the top hole in the back of the seat and through the seat cushion and around the side of mast.
- Use a 10mm wrench to disconnect negative battery terminal followed by positive terminal. Note that there are (3-4) grounds.
- Remove the 1/4” nuts from battery box. Remove battery box assembly from RevoLT. May use optional swivel extension.
- Loosen seat belt bolts. Do not remove.
- Place towel over the top of the gas tank.
- Loosen bolts in landing gear/ main frame connection extruded gusset bracket above landing gear. Do not remove bolts.

- Remove 1/4" bolt from extruded gusset bracket on both sides and discard. Hold landing gear bracket from possibly falling on to tank. May need to tap out with mallet.
- Remove battery tray bolts from original landing gear bracket. Discard original landing gear bracket.
- Cut zip ties on new landing gear bracket and replace with the battery tray bolts.
- Use 3/8" drill bit to open hole in landing extruded gusset bracket.
- Slide the landing gear bracket back into place. Use a Phillips screwdriver or punch to align the hole for the landing gear bolt. May need to tap in with mallet.
- Start by hand the 3/8" bolt, included in kit, into the extruded gusset bracket for alignment on both sides. Hand tighten.
- Pull the 3/8" landing gear bolt out one at a time and use the Loctite, included in kit, on the threads. Start the bolt by hand and then use 3/8" socket to catch 5 or 6 threads. Due this on both sides.
- Remove tire dollies or wood and align the landing gear inside landing gear bracket. May need to raise the aircraft up to align.
- Start the 3/8" landing gear pivot bolt front to back slightly into landing gear bracket. Add thick Delrin spacer (flat part to top), landing gear, thin Delrin spacer (flat part to top) and then through the remaining landing gear bracket. Keep everything loose until both sides are in.
- Tighten 3/8" landing gear/ main frame connection bolts in the extruded gusset bracket to 250 in lb. Tighten remaining extruded gusset bracket bolts until snug.
- Use 9/16" offset ratchet wrench to snug down landing gear pivot bolts. The landing gear needs to be able to rotate. Take out any slop.
- Recheck the torque on the 3/8" landing gear bolts in the extruded gusset bracket.
- Place the battery tray assembly back in. Tighten the bolts. May use optional swivel extension.
- Place seat belt at 45° angle prior to tightening seat belt bolt. Tighten down.
- Reconnect positive terminal of battery and reconnect the (3-4) grounds to terminal of battery by hand starting. Use a 10mm wrench to snug bolts down. Can wiggle cables to note tightness of bolt.

- Remove seat quick pins. Remove bungee from seat. Place into position. Place quick pins back in.
- Double check everything before letting RevoLT down.
  - (2) landing gear pivot bolts
  - (2) battery tray bolts
  - (2) battery terminal bolts
  - (4) extruded gusset bracket bolts
  - (2) seat belt bolts
  - (2) seat quick pins
- Release RevoLT onto landing gear. Disconnect engine hoist, cum-a-long or ratchet straps. Remove soft ties.

See video link here: [https://youtu.be/xlXFdTwc\\_8U](https://youtu.be/xlXFdTwc_8U)

### **Testing:**

- Taxi aircraft and recheck all bolt connections.

### **Logbook Entry:**

Aircraft logbook should be marked with the following entry and dated and signed with mechanic's or pilot owner/operator's license number (if applicable):

*"Safety directive 1001 from the manufacturer satisfied as per instructions. Compliance with ASTM standards is maintained"*