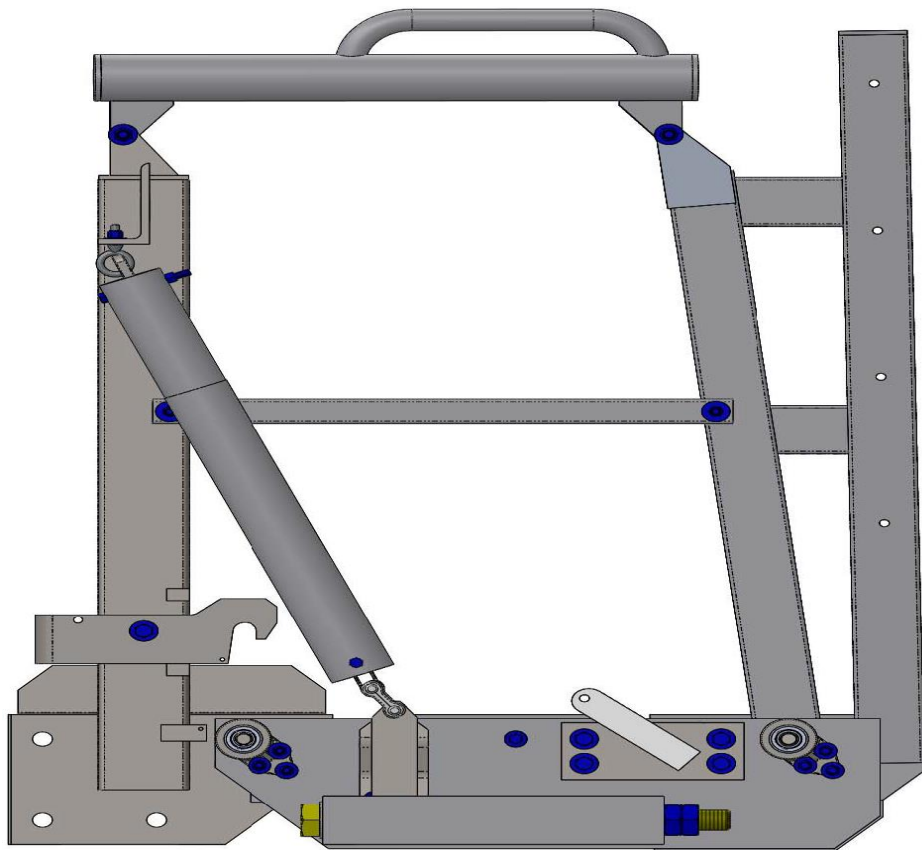


# TCG 3-STEP SPRING ADJUSTMENT AND REPLACEMENT ADDENDUM



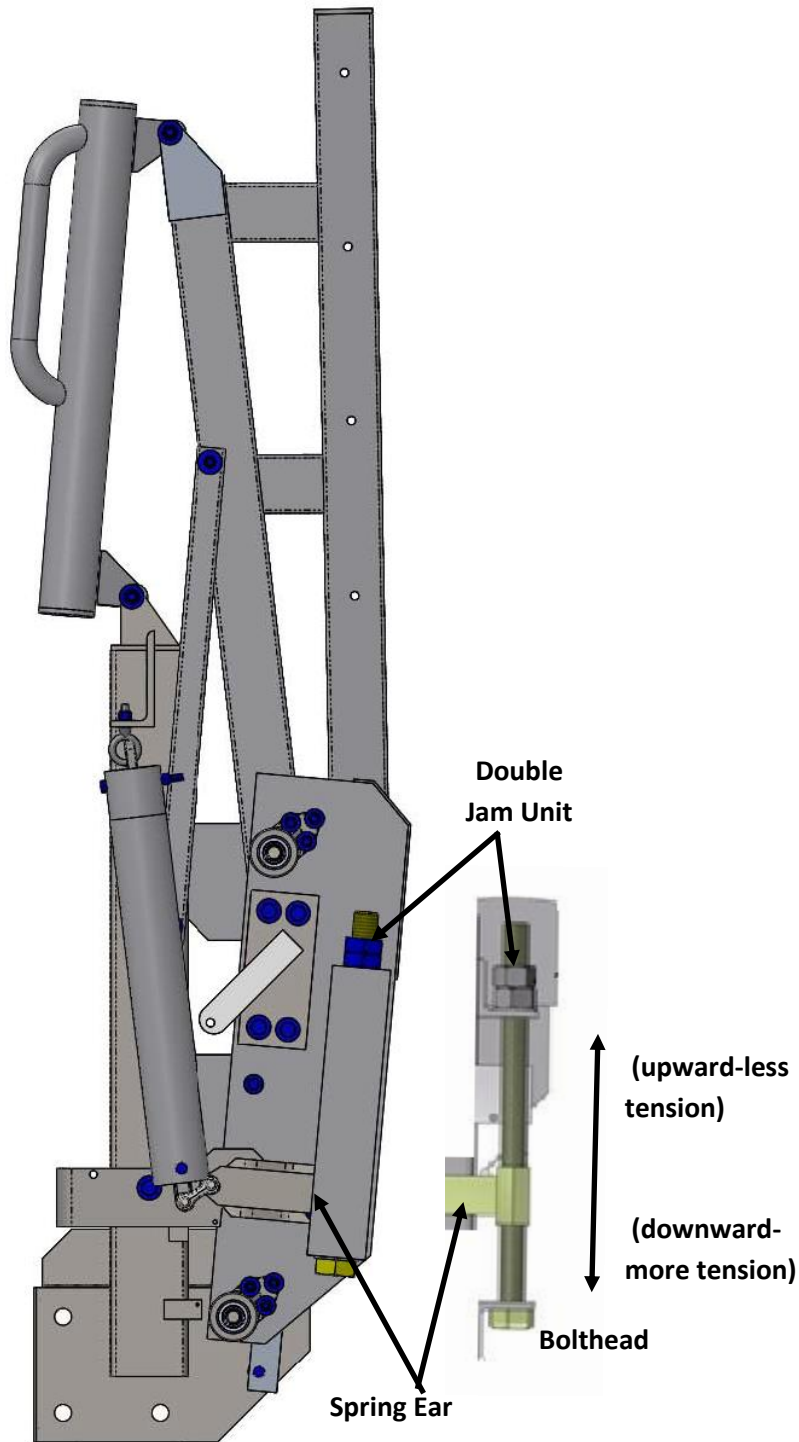
## **1) TCG 3-STEP SPRING ADJUSTMENT AND REPLACEMENT ADDENDUM**

### **a) GENERAL**

- i) This addendum is considered an integral part of the instruction manual for the Carbis equipment to which the addendum applies.
- ii) **⚠ CAUTION** Only qualified maintenance personnel, or skilled craftsmen, trained in safe and proper maintenance procedures should perform the adjustment of the Carbis equipment in accordance with the most recent industry practices. Failure to do so could cause personnel injury or damage to equipment.
- iii) Prior to the adjustment of any component, it is imperative that the system Lockout/Tagout Procedure be performed per company safety regulations and requirements.
- iv) Where applicable, refer to the figures contained within this addendum for additional detailed visual guidance.

### **b) TCG 3 STEP SPRING ADJUSTMENT AND REPLACEMENT (SEE FIGURE 1-1)**

- i) **Spring counterbalance system adjustment may be required for adjusting the amount of force necessary for the return of the gangway to the stored position. The springs are factory set for the gangway weight and any purchased options. These could include a seatainer end tread and/or a cage. All purchased options must be installed and springs adjusted prior to use for the springs to properly function**
- ii) To adjust spring tension or replace a spring, follow the instructions noted below:
  - 1) Prior to adjustment, mark or measure the starting location as reference point. Perform spring adjustments in 1/2" increments while checking the balance by operating the gangway and adjusting the adjustment bolt until achieving a required rope pull of 50 pounds or less.
  - 2) With the gangway in the stored position, the foot lock engaged, and using the correct wrench adjust the adjustment bolt by only turning by the bolt head. Do not attempt to loosen the double jam nuts. If the gangway is difficult to raise, using 1/2" increments adjust the spring ear upward. If the gangway will not stay down when lowered, using 1/2" increments adjust the spring ear downward until proper force is achieved.



**FIGURE 1-1 GANGWAY ADJUSTMENT PERFORMED IN STORED POSITION (CUT AWAY VIEW)**

- 1) If the gangway requires any spring counterbalance system component replaced, **adhere** to the following the procedures below. If any questions or concerns understanding the procedures, discontinue maintenance and contact call Carbis for technical assistance.
- 2) With the gangway in the stored position, using a cargo strap or rope secure the gangway ensuring the gangway does not inadvertently deploy during maintenance.
- 3) Using a paint marker, mark the current ear location on the threaded rod.
- 4) Adjust the spring ear upward until relieving all spring tension.
- 5) Continue by following the supplied spring counterbalance system replacement instructions.
- 6) Reconnect hardware as instructed.
- 7) Adjust the ear to its original position.
- 8) Untie the gangway and test the unit.
- 9) If adjustments are required, see **b) Spring Adjustment**

iv) Unlocking the Spring Adjustment Nut:

If gangway spring adjustment has not been performed for a long period, under certain environmental conditions, the spring adjustment nuts may seize on the threads. If this condition occurs, to unlock the nut perform the following steps:

- 1) Ensure the gangway is locked in the stored position, foot lock engaged, and the chain taut and engaged in the chain locks.
  - 2) Mark the current nut location on the long-threaded adjustment bolt.
  - 3) Spray a penetrating lubricant catalyst onto the threads of the bolt each side of the nut and let it sit for approximately 20 minutes.
  - 4) Using a 2"/50 mm wrench, turn the nut ear into the gangway base tread upright securing the nut. After securing the nut, apply sufficient torque to turn the bolt while the nut remains fixed. **NOTE:** Pneumatic power can be used if available.
  - 5) Once the nut freely turns on the bolt threads, adjust the nut thread position to the original mark.
- v) For any assistance, replacement parts, comments, or questions, call Carbis' Customer Service Department at 1-800-845-2387. Please have your model number, serial number, or drawing number available to expedite your request.