



## 2-33 Elevator Rigging Procedure (With Ratchet Trim System)

1. Install horizontal stabilizer, elevator and connect elevator pushrod to elevator. With elevator and control stick in a roughly neutral position and the trim system disengaged, equally adjust both elevator cable turnbuckles to obtain a cable tension of  $30 \pm 5$  lbs.
2. Engage the trim control lever into the forward most tooth on the ratchet.
3. With the trim still engaged into the forward most tooth, move the pilots (fwd) control stick fully aft until the clevis on the trim spring assembly contacts the body of the spring cartridge. While continuing to hold the stick full aft, adjust the aft stop bolt until it contacts the torque tube, then turn the bolt out  $1/4$  to  $1/2$  additional turns so there is no contact between the trim clevis and cartridge. Lock the stop bolt in place with the jamb nut.
4. Move the pilots control stick to the full forward position. Adjust the forward stop bolt so the bottom of the stick tube clears the torque tube by  $.040$  to  $.060$  inches as shown below. Secure lock bolt with jamb nut.



Gap Should Be  $.040''$  to  $.060''$

5. With the trim still engaged in the forward most tooth, move the stick fully aft against the stop and check up elevator travel. The up travel for aircraft with a 1040 pound gross weight is  $21^\circ$  to  $25^\circ$ . For 1080 pound gross weight the travel is to be  $25^\circ$  to  $26^\circ$ . If the up elevator travel is not within limits, adjust the cable turnbuckles equally to obtain proper travel. Be sure to maintain cable tension of  $30 \pm 5$  pounds.

Note: Tightening the aft turnbuckle and lengthening the forward turnbuckle increases up travel

6. Move the control stick fully forward to the stop and check down travel. Down limits for both 1040 and 1080 gross weight aircraft is  $21^\circ$  to  $25^\circ$ . If the travel exceeds the limits, adjust the forward stop bolt as required.

Note: If both the up and down elevator travel is within rig at this point the rigging should be biased to get full up elevator travel at the cost of full down elevator travel if possible. (i.e. if you have  $25^\circ$  up and  $23^\circ$  down, adjust to get  $26^\circ$  up and  $22^\circ$  down.)



Note: It is permissible to cut down the stop bolt mounts on the forward control stick in order to achieve proper up or down control travels. The nominal factory dimension is 2.34" long from the intersection of the stick stub. That dimension can be cut down to a minimum of 2.00".

7. After adjustment, with elevator travel and cable tensions within limits, verify that neither turnbuckle has no more than three threads showing on either end. If a turnbuckle has more than three threads showing, the 22113-3 link located between the turnbuckle and the rear control stick may be replaced with the .25" longer 22113-13 link or the .50" longer 22113-15 link to provide proper thread engagement. In the event that turnbuckle fails to have enough "in" adjustment before becoming bottomed, the cable will need to be replaced with a custom cable. Contact K&L Soaring for corrective action and procedure.
8. Disengage trim and return elevator to neutral 0° position.
9. Measure the angle of the rear stick relative to the torque tube. The stick is to be perpendicular or biased up to 5° forward relative to the torque tube. If the angle exceeds 5° forward contact K&L Soaring for corrective action.  
Note: Measurement taken on rear stick based on to meet required clearance from front seat back and for ease of measurement.
10. Re-Verify all stick, trim, and elevator travel limits. With elevator and control stick in a roughly neutral position and the trim system disengaged, re-verify cable tension. Safety cable turnbuckles and all control connection.