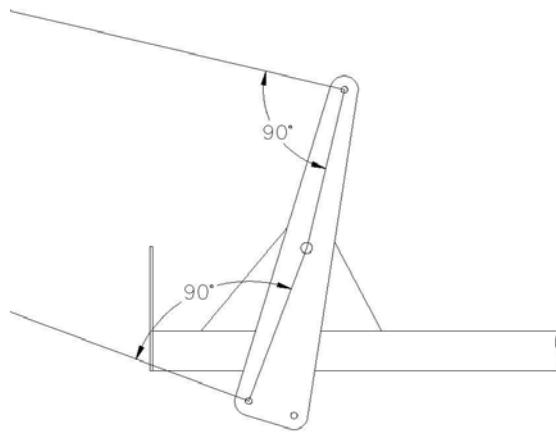


Rigging Elevator Controls

The most common question that I receive, and hear people talking about is, how to keep the elevator control cables from loosening or tightening when the stick is deflected in the STOL series. There are two different contributing factors for the loosening and tightening of the elevator control cables. The major factor is incorrectly orienting the elevator bellcrank. The second factor is over tightening the elevator cables. When the elevator bellcrank is incorrectly oriented the effects are magnified by the cable tension being too high.

To correctly orient the bellcrank is relatively simple. Before you install the elevator bellcrank, this is a little more difficult after but possible, draw a line from the elevator cable attachment holes to the center pivot hole with a marker. When you are ready to rig the elevator controls, set the elevator in the neutral position (the elevator should be level with the top of the horizontal). Tie a string through the elevator horn to simulate the control cable and run it through the fuselage to the elevator bellcrank. I like using a string that will stretch so that it won't move the elevator out of the neutral position when pulled tight. Pull the string tight, but not overly so, through the elevator cable attachment hole on the elevator bellcrank and tie it in place. Using a small square rotate the bellcrank till the string is approximately 90 degrees to the line that we put on the bellcrank between the attachment hole and the pivot hole. Clamp the elevator bellcrank in place so that it can't rotate, this is the correct orientation of the elevator bellcrank and the elevator control cables can be run in place of the string. Wait till after the elevator bellcrank is in and the cables are tensioned before fitting the pitch control rod and stick. This way you can tailor the stick neutral position to be comfortable for you during level flight. The image below is a side view from the CH750 elevator bellcrank in the correct orientation.



When the elevator bellcrank isn't 90 degrees to the cables in the neutral position, the distance between the elevator horns and the bellcrank varies over the throw of the elevator deflection. The change in distance causing the cable tension to change is then amplified when the stick is deflected to the right or left due to the offset of the elevator bellcrank from the center of the torque tube.

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