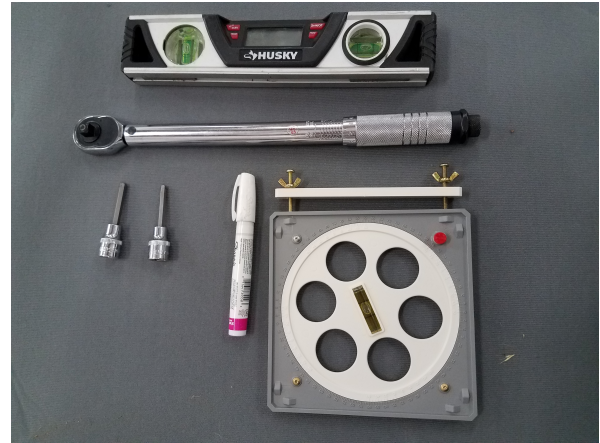


# Adjusting HTC Propeller Blade Angle

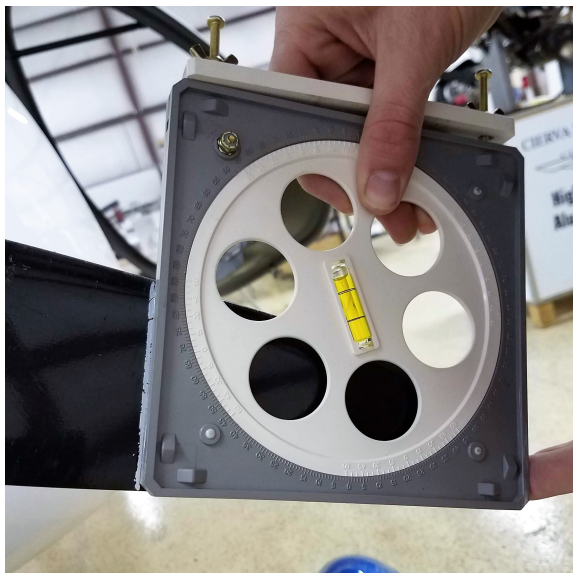
## ***Necessary Tools***

1. Torque wrench with 5mm and 6mm heads.
2. Blade pitch protractor
3. Grease/Paint pen.



## ***Instructions***

1. Loosen (but do not remove) both the inside M8 bolts connecting the hub to the spacer and the M6 bolts on the outside circumference of the propeller hub until the blades are able to rotate with light resistance.
2. Use a level to bring the blade you intend to adjust horizontal.



3. Using a paint or grease pen, mark a line 6.5" from the tip of the propeller blade (the length of the blade protractor) perpendicular to the flat edge. A simple way to draw this line is by aligning the protractor to the end of the blade and using its side as a guide.

4. Open the wing nuts on the blade protractor slightly and slide the blade between the white retaining bar and the body of the protractor so that the bar is towards the aircraft and the protractor is pointing out towards the tail. Align the edge of the protractor with the reference line drawn earlier, with the bottom of the protractor flush with the flat edge of the blade. Tighten the wing nuts.



5. The blade angle is indicated by the degree marker indicated by the zero marker on the white wheel directly above the level on the side of the protractor with the red locking bolt and on either side of the level on the opposite side of the protractor. Turn the blade gently by hand until the blade is at the desired angle. As an initial angle,  $22^\circ$  is recommended.
6. Tighten one of the outside M6 bolts enough to prevent the blade angle from changing while working on the others. Watch the level on the protractor to ensure the blade angle does not change while tightening this bolt.
7. Turn the propeller hub so that the next blade is level. If this blade cannot rotate, loosen the bolt tightened in the previous step slightly.
8. Repeat steps 3-7 until all blades are the same angle.
9. Tighten the larger inside M8 bolts to 15nm/11ft-lb using a torque wrench. In order to distribute stress equally, tighten them in a pattern such that after tightening one bolt you next tighten the bolt opposite it.
10. Tighten the smaller outside M6 bolts to 10nm/7.4ft-lb using a torque wrench. Use a pattern to tighten these such that one bolt on each side of each blade is tightened before moving on to the others, again tightening bolts to distribute stress equally.
11. Check each blade to ensure they have remained at the desired angle. If they have changed, repeat the entire process. If during test flights climb rates are unexpectedly high at low speeds, repeat this process for each blade, decreasing the blade angle slightly. If engine rpm readings are too high at higher climb rates, increase blade angle.





### Torque Specs.

M8 – 15nm/11 ft-lb



M6 – 10nm/7.4 ft-lb

