

**First, check & adjust the timing of the SureFly Ignition Module (SIM) on the engine:**

1. Obtain the following tools:
  - a. An inexpensive dial indicator (example, Amazon B07HFV25M9, or Harbor Freight 63521.)

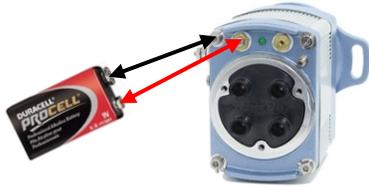


\*\*\*Make sure to Loctite and tighten the probe tip to prevent it from falling into cylinder\*\*\*

- b. A 9V battery
  - c. 2x alligator clip leads (example, Amazon B072174XRB or Harbor Freight 66717)



2. Remove the inline fuse from the power wire connecting the SureFly to the battery.
3. Using the 1st alligator clip lead, attach the battery positive terminal to the TIMING post on the SureFly.
4. Using the 2nd alligator clip lead, attach the battery negative terminal to a case bolt on the SureFly.



5. Clear the propeller and turn the ignition key or toggle switch to enable (un-ground) the SureFly (L if SIM on LHS, R if SIM on RHS).
6. Witness the LED on the SureFly illuminate and stay lit.
7. Remove the top sparkplug from #1 cylinder. Using your thumb to find compression, turn the propeller to bring the #1 piston to compression stroke.
8. Using a flashlight to see into the spark plug hole, turn the propeller and witness #1 piston crown at TDC.
9. Turn the propeller backwards by approx. 10 degrees to bring the piston back down before TDC.
10. Insert dial indicator probe into spark plug hole so that dial indicator probe touches the top of the piston. Brace the body of the dial indicator to prevent it from moving.
11. Slowly turn the propeller in direction of normal rotation and witness dial indicator pointer move.
12. Continue turning the propeller until dial indicator pointer stops and begins rotating in opposite direction. Note reading on dial indicator bezel where this occurs – this is TDC.
13. Turn the propeller backwards by approx. 5 degrees to bring the piston back down before TDC.
14. Slowly turn the propeller in direction of normal rotation and stop when dial indicator pointer reaches TDC reading on bezel. If propeller is accidentally turned past TDC reading on bezel, start over at step 13 to ensure backlash in all gears is taken up in direction of normal engine rotation.
15. #1 cylinder is now positioned exactly at TDC. Do not move propeller if SureFly needs adjustment.
16. If the LED on the SureFly does not extinguish exactly at TDC, slightly loosen the nuts holding the SureFly to the engine and rotate the SureFly until the LED does extinguish.
17. Tighten the SureFly back down ensuring the LED stays extinguished. Torque nuts to 150-160 inch-lbs.
18. Remove dial indicator, 9V battery and clip leads.
19. Turn ignition key switch to OFF, reinstall spark plug and SureFly power wire fuse.

**Second, sync the legacy magneto to the SureFly Ignition Module (SIM):**

\*\*\*Do not readjust the SureFly (SIM) in this step – it should be accurately timed to the engine per instructions above and is now the baseline.\*\*\*

20. Ensure the legacy magneto is installed and timed per manufacturer's instructions.
21. Run the engine and perform mag check as per POH.
22. If the difference in RPM drop between Left and Right ignition systems is within POH specification, no additional action is required.
23. If the difference in RPM drop between Left and Right ignition systems is beyond POH specification, perform the following:
24. Shut down engine and allow to cool.
25. Lightly loosen the hardware attaching the legacy magneto to the engine.



26. Rotate the legacy magneto CW in its seat by 1°.
27. Tighten the hardware attaching the legacy magneto back to manufacturer's specification.
28. Run the engine and perform mag check as per POH.
29. If the difference in RPM drop between Left and Right ignition systems is now within POH specification, no additional action is required.
30. If the difference in RPM drop between Left and Right ignition systems is still beyond POH specification, but **better** than previously recorded, **repeat previous steps** until RPM drop falls within POH specifications.
31. If the difference in RPM drop between Left and Right ignition systems is still beyond POH specification, and now **worse** than previously recorded, **repeat previous steps but turn legacy magneto CCW** until RPM drop falls within POH specifications.