



## Road Less Traveled

Okay, COVID-19 pandemic disrupted much activity in 2020, certainly impacted the racing season. Still, there have been motorcycles and cars sprinting down the  $\frac{1}{4}$  or  $\frac{1}{8}$ -mile track in head-to-head competition. However, what racing that has happened, [Raptor Performance](#) products have aided those talented riders. For example, Branon White with [Mad Monkey Motorsports](#) uses Raptor Performance products on their Harley Davidson motorcycles and won the [AHDRA National Championship](#) while setting the National Record in Draggin Bagger class. Similarly, [Travis Groff](#) of Soda City Racing took second place in the same class and was less than a tenth off Branon's record. He earned the Rookie of the year award in that same series. Each of these riders use Raptor Performance's soft kill and shift lights. It would have it, that both riders went 1 and 2 and were the only ones using Raptors Performance products in that class. Coincidence? We think not. They took the road less traveled, and Raptor Performance was there for them.

Now, we are not detracting from the driver's talent, but Raptor Performance provides products that will give you a performance edge. Raptor Performance spends time and engineering attention to detail to develop the Ignition Soft Kill that would get you down the road to less traveled to victory faster and smoother than the competition. See the press release at <https://thevirginianewsjournal.com/raptor-performance-launches-new-product-sport-bike-ignition-soft-kill/>.



*Figure 1 The Raptor Performance Ignition Soft Kill*



## Time Setting

The Raptor Performance ignition soft kill box provides inputs to determine the hold time of the kill box just like the competition. The Raptor Performance product has two switches with detents so the user can feel the change, as well as see the pointer location on the dial that has silk-screened numbers across the dial range of rotation, from 0 to 9. Thus, the range of ignition soft kill is from 0 milliseconds to 99 milliseconds, precise, predictable, and repeatable.

The competition uses a potentiometer that requires a screwdriver, placed into the case of the product, with no visibility of the actual time setting. It is not possible to know if the time set for the soft kill has been set to 9 milliseconds or 50 milliseconds. Additionally, this potentiometer has no stopping point, or tactile feedback, meaning it is possible to over screw the potentiometer and thereby destroy any idea or reference of the actual value that is being set for the kill time. Not only do you not see what the time setting is set, it is impossible to set this to a very precise value.

The Raptor Performance Sport Bike ignition soft kill box also quietly disrupts the ignition cycle, with no engine anomalous performance. The ignition signals consist of a controlled disengagement to allow for quick shifting of gears, and then a controlled reengagement. No sputtering or backfiring or other engine degradation of performance like the competition. With Raptor Performance you get you down the road quicker, and smoother. The combustion cycle is completely managed rather than abruptly terminated and abruptly reengaged, which causes backfires and other instantaneous anomalous performance. The Raptor Performance soft kill can thereby be used with nitrous-equipped bikes, without worrying about destroying your engine.

## Size

The logistics of mounting any component on the bike can be a challenge. The larger the product, the more difficult the challenge. The Raptor Performance ignition soft kill box is roughly 1/3 of the size of the competition. This makes it easy to find a location on the bike to mount the component.

## Systems Integrated

The Raptor Performance ignition soft kill box is designed to accept the Raptor Performance shift light or other similar input that provides the signal to initiate the ignition soft kill. Similarly, it is possible to configure the horn button as an input to initiate the ignition soft kill for the prescribed time the user inputs.

## Benefits

As you can see, the Raptor Performance ignition soft kill has quite a few benefits all designed to get you down the track faster. Faster shift times with no anomalies (backfiring and setting of the FI light), that results in a repeatable and smooth shift. As one racer who installed the ignition soft Kill said (who was also running nitrous), **"this bike shifts smoother than owl s\*\*\*t now"**.



	Raptor Ignition Soft kill	Competition
Visible time setting	Yes	No
Settable to a specific time	Yes	No
Backfire and other engine anomalies	No	Yes
Repeatable settings	Yes	No
Size of the product	Small	Large
Compatible With Nitrous	Yes	No
Air Valve Advance Preload Time	Yes	No
Sealed Connectors	Yes	No

### Notes:

1. A fraction of the size and weight compared to the competition - easier to find a place on the bike to mount
2. A computer-based control system developed using automotive design and manufacturing principles
3. Internal RISC processor for precise control of the system.
4. All-solid-state electronics with no relay contacts to wear out over time.
5. Easily know what your kill time is set to with a glance at the rotary switches.
6. The precision time setting of 1 millisecond to 99 milliseconds (in 1-millisecond increments)
7. Interfaces directly with the Raptor shift light (with auto-shift output option) for quick, automatic shifting
8. Ok / Kill LED indication
9. No backfiring or odd ignition and combustion events
10. The Raptor ignition soft kill is compatible with nitrous applications, the critical timing of the ignition events remains under the control of the ECU (electronic control units). Our competitors short the coils to the ground during the kill. When that ground is removed, all ignition coils are energized and fire. This can be detrimental to the engine (especially for a bike equipped with nitrous) because of wrong timing (pre-detonation because of piston locations in the cylinders, open intake valves, etc.)
11. No huge current is drawn from the batteries since the Raptor ignition soft kill does not short the coils to the ground to kill. Unlike the competition that drains the batteries approximately 55 amps (4 cylinders) during every kill event.
12. The air valve preload time is preset to 15 milliseconds. This allows the air valve to open before the kill occurs. (there is no reason to waste kill time if your air valve has not opened yet!). With 15 milli-seconds per shift and five shifts, that's 75 milliseconds not wasted.



13. Engineered to work to a wide range of operating conditions. Potted for vibration and moisture resistance.
14. Does not work with smart coils (where the driver is built into the coil)