

Carburetors Are Here to Stay: GET'M Performance Explains the Technology Behind Better Tuning and More Horsepower

Trevor Wiggins explores how modern design tools, application-specific calibration and track data continue to advance racing carburetor performance.

Carburetor performance starts with understanding what the engine needs—and how those needs change between idle, launch, acceleration and the finish line. During EPARTRADE's recent Race Industry Now webinar, Trevor Wiggins, Owner of GET'M Performance, explained how fuel selection, booster signal, emulsion calibration and fuel delivery work together to determine whether a carburetor produces impressive dyno numbers or delivers winning performance on the track.

Hosted by Brad Gillie from SiriusXM, Ch. 90, Late Shift, "Carburetors Are Here to Stay: Technology, Tuning & Horsepower" examined the engineering behind modern racing carburetors and the details racers and engine builders should consider when selecting, tuning and maintaining them.

For Wiggins, the fundamental operating principle remains familiar: airflow through a venturi creates the pressure differential that draws fuel through the metering system and into the booster. The opportunity for improvement lies in controlling that process more precisely.

With CAD, 3D modeling, 3D printing and modern machining capabilities, GET'M can develop and evaluate changes to venturis, boosters and fuel bowls much faster than was previously practical.

"We can have an idea this morning and say, 'Hey, well, let's make it,'" Wiggins said.

That development speed allows relatively small design changes to move quickly from concept to track testing. During the discussion, Wiggins described fuel-bowl revisions intended to increase volume and provide additional room for higher float positioning.

Why CFM Alone Does Not Select the Right Carburetor

Displacement and airflow ratings provide a starting point, but Wiggins emphasized that carburetor selection requires a much broader view of the combination.

Horsepower, operating RPM, vehicle weight, gearing, fuel type and racing format all influence the calibration. An eighth-mile bracket car, a quarter-mile drag car, a pulling truck and a marine engine can place very different demands on the fuel system.

Wiggins contrasted marine applications operating around 5,000–5,500 RPM with racing engines running approximately 8,500 RPM. Both require fuel delivery matched to their operating conditions, rather than a carburetor chosen simply by its advertised airflow capacity.

Oversizing can weaken the metering signal at lower engine speeds and create fuel-delivery problems. A smaller carburetor may respond quickly but become an airflow restriction as engine demand increases.

The challenge is balancing airflow capacity with the signal and fuel curve needed throughout the usable operating range.

A Dyno Pull Does Not Reproduce Every Track Condition

A strong peak horsepower number does not establish that a carburetor will launch cleanly or accelerate properly in the vehicle.

Wiggins explained that dyno loading and acceleration rate influence how the fuel curve is evaluated. A test conducted over a narrow upper-RPM range may reveal little about what happens when the engine comes onto a two-step, leaves on a transbrake or accelerates from a footbrake launch.

“I can make a dyno queen,” he said. “That doesn’t necessarily mean that it will go down the track.”

Different applications also change the importance of transitional operation. A drag-racing combination places considerable emphasis on launch and wide-open-throttle performance. Circle-track and road-racing engines repeatedly move through changing throttle positions and loads.

For those applications, Wiggins highlighted the interaction among power valves, power-valve restrictions, idle-feed restrictions, main jets and emulsion calibration. The objective is to deliver fuel as the engine needs it during the transition back into power.

Emulsion Tuning Goes Beyond Main-Jet Changes

Responding to an audience question about emulsion jets, Wiggins discussed how air introduced into the main well changes the behavior of the metering system.

Emulsion calibration and main-jet sizing must be considered together. In the examples he described, introducing more air into the main well could require a larger main jet to achieve the desired fuel delivery.

That relationship becomes especially relevant when an engine does not accelerate cleanly or when main-jet changes alone fail to produce the required result.

Wiggins used a farming analogy to explain the different levels of adjustment. Changing the main jet is like mowing an entire field: it makes a broad change. Air-bleed adjustments provide more targeted control, while float level and idle-mixture adjustments help refine the final calibration.

His approach is to identify which part of the system needs correction before reaching automatically for a different main jet.

Float Level Is a Meaningful Calibration Variable

Fuel-bowl level received particular attention because of its influence on fuel delivery.

Wiggins explained that float adjustments can produce a meaningful mixture change without replacing the main jets. In the carburetors he was discussing, moving the float adjuster three flats could have an effect he compared with approximately 0.002–0.003 inch of jet-orifice change.

Those figures were presented as experience-based comparisons for his combinations, rather than a universal conversion between float adjustment and jet size.

The broader point is that bowl level belongs in the tuning discussion. Racers evaluating a mixture problem should consider how the fuel level is set alongside jetting, air bleeds and the rest of the calibration.

When moving between tracks with different elevations or conditions, Wiggins recommended consulting the carburetor builder and beginning conservatively, with a preference for a slightly richer starting point.

Fuel Choice Shapes the Entire Metering Package

GET'M asks about fuel early in the specification process because gasoline, methanol, E85 and oxygenated racing fuels place different demands on the carburetor.

Wiggins explained that some oxygenated-fuel applications require substantial changes in fuel-metering capacity. The main jet and main well must be capable of supplying the volume the combination needs.

He also emphasized atomization and vaporization: delivering liquid fuel is only part of the task. Preparing that fuel for combustion is central to making power.

Consistency matters just as much as the initial fuel selection. Although GET'M builds E85 carburetors, Wiggins urged racers using pump-sourced fuel to test it regularly. A calibration developed around one blend may no longer behave as expected when the fuel composition changes.

He similarly encouraged racers considering additives or octane boosters to speak with their fuel supplier, since changing the fuel can also change the carburetor's calibration requirements.

Data Logging Makes Carburetor Diagnosis More Precise

Modern data acquisition has become an important part of carburetor development and support.

Wiggins described reviewing customer logs to examine launch behavior, shifts and performance later in the run. Oxygen-sensor data helps identify mixture trends, while throttle-position information can reveal problems that might otherwise be blamed on the carburetor.

In one example, a driver reported inconsistent vehicle performance. Reviewing the throttle-position trace showed that the car was reaching only about 85 percent throttle.

That finding illustrates why a tuning diagnosis should begin with evidence. A performance complaint can originate in driver input, throttle operation, fuel delivery or another part of the vehicle.

Wiggins also stressed the relationship between the carburetor and torque converter. Launch, unloading and gear changes alter how the engine encounters load, making communication among the racer, carburetor builder and converter specialist particularly valuable.

Maintenance Protects the Calibration

Fuel-system condition remains essential to repeatability.

Wiggins said GETTM weighs floats during initial assembly and again when carburetors return for service. Comparing those measurements helps identify floats that have gained weight and may no longer control fuel level as intended.

He also discussed deposits around air bleeds and the additional maintenance attention required by methanol applications. Leaving alcohol fuel in a system through extended storage can create corrosion problems throughout the fuel system.

For racers planning engine changes or fuel conversions, Wiggins encouraged early discussion with the carburetor builder. Depending on the application, changes to boosters, metering components and other parts may allow an existing carburetor to be adapted.

Throughout the webinar, his message remained consistent: modern carburetor performance depends on the complete combination. Airflow capacity, metering signal, fuel properties, vehicle loading and maintenance all contribute to the result—and modern design tools and track data give builders more ways to refine each one.

The discussion was presented as part of EPARTRADE's Race Industry Now technical webinar series, connecting racing professionals with suppliers and specialists across the performance and racing industry.

For more information, [watch the full webinar here.](#)

