

## EASY NO. 1 CYLINDER ID

Just finished the Rescue article on Diane Williams' 1965 Mustang (Sept. 2014). You missed a point on an easy way to find the No. 1 cylinder. Here's the deal: The No. 1 piston on any V-configured engine from a V2 to a V16 or even larger *always* matches the head that is farthest to the front of the block. Since the connecting rods cannot occupy the same space on the rod journal, one rod will always be slightly more forward-located. The head on the side of a V-block will correspondingly be located more forward to match the rod location. That was how my high school shop teacher taught us 50 years ago.

Len Cossey  
St. Ann, MO

Great tip! Sometimes I overlook the forest for the trees.

## "SPUTTERING" CARB

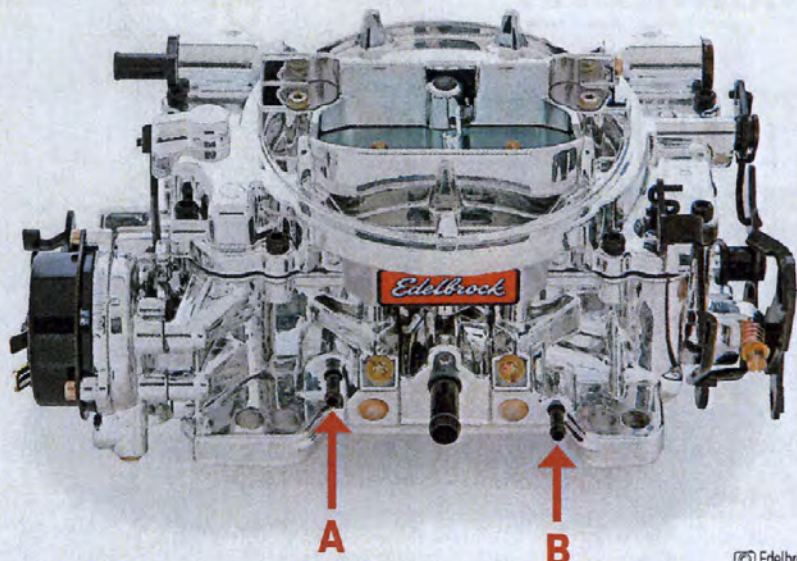
I have a 1961 Corvette with an 8.5:1 350 engine. My car has a Comp Thump cam, Comp springs, Edelbrock Performer RPM heads, and an Edelbrock 2x4 manifold with two 500-cfm Edelbrock carbs. It also has headers with a 2½-inch exhaust and a four-speed. On acceleration from a standing start, or when accelerating from takeoff, it runs great. But if I stomp on it from 40 mph, 50 mph, or any speed while rolling, it sputters for a few seconds, then takes off. Could it be too much fuel at once? I just changed the plugs: no help.

Bruce Maurice  
Via email

The rear gears, the trans gear the car is in, and the rpm range where the problem manifests itself all have a bearing on a driveability problem like yours. Not knowing them, I have to make several assumptions, but I'll give you my best shot.

I'll assume that your basic carburetor adjustments, as explained in the instructions that came with your carbs as well as in widely available books and manuals, are correct. These include the float level, the idle mixture, the idle speed, the accelerator pump rod, and the dual-carb throttle linkage. The fact that you reported no idle-quality issues and say the car runs fine at wide-open throttle (WOT) from a standing start provides me with reasonable confidence that this assumption is correct. Of course, you can also get a clue by "reading" the spark plugs: black (rich) or white (lean). Ideally, the center porcelain should be reddish-tan in color.

If it was me, I'd take a close look at the ignition curve. Your 350's extremely low compression ratio, Thump cam, and aluminum heads call for a fairly quick advance curve and lots of timing, even with pump gas. Start by determining the cruise rpm (or rpm range) where the Vette hesitates when



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[On the Edelbrock carb, location A is the spark-ported (timed) vacuum port and B is the manifold vacuum port. Usually, but not always, ported vacuum is preferred. Sometimes a car runs better with no vacuum advance, especially if it "hunts" in and out of vacuum advance at cruise near the WOT tip-in point. Hopefully, Bruce's Vette rear-axle ratio is at least 3.55–3.73:1 or even numerically higher.

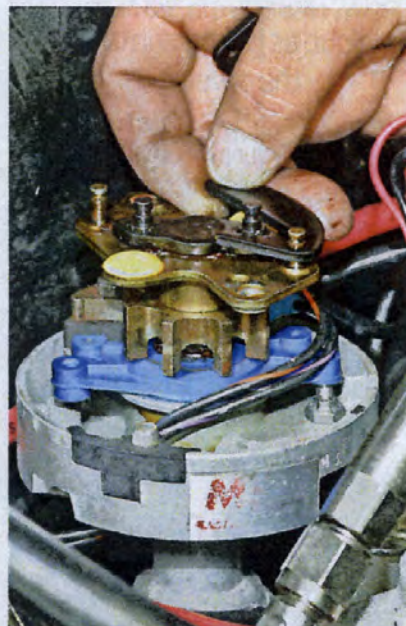
you step into it. Then check the amount of ignition advance at that point—you'll need either a dial-back timing light or a degreed balancer to do this. Initially, it's OK to have the vacuum advance hooked up, because what you want to observe first is not only the total timing (in this case, the sum of base timing, centrifugal advance, and vacuum advance) at the onset of lay-down, but also if and how much the timing decreases during the tip-in process (because the engine vacuum decreases at tip-in to WOT).

With your combination, at around 2,500–2,800 rpm I'd like to see no less than 25–30 degrees of advance. If it's under 20 degrees at or under 3,000 rpm, for sure you have a problem. If the observed total advance is less than this during or just after tip-in, temporarily disconnect and plug the vacuum advance. See if the car runs better. If the car does run better, and the vacuum advance was previously hooked up to a manifold (full-time) vacuum port, try connecting it to a ported vacuum port. Timing fall-off will be less when the advance is connected to ported vacuum, but any such fall-off during tip-in still must not reduce total advance below the 25–30 degree threshold. If advance still is insufficient, add more base timing into the motor. Depending on your gearing, you may not be able to run vacuum advance if the "sour spot" occurs at your WOT tip-in point rpm at cruise.

Whether or not you ultimately run vacuum advance, the proper timing with your combination would be about 15-degrees initial, with a total of 36–38 degrees of centrifugal (mechanical) advance by 3,000 rpm (as read at the balancer). You may need to play with the distributor springs, weights, and (if used) internal distributor advance stop-bushing to achieve this.

If none of this helps, you will need to take a serious look at the internal carburetor transition circuit and calibration. At that point, I strongly recommend biting the bullet and consulting a tuning shop with a chassis dyno. Good luck.

There's also the cop-out solution: Have you tried downshifting to a lower gear when you step into it?



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[My money's on a timing issue on this one. Low-compression, heat-rejecting aluminum heads and a Thump cam call for lots of initial timing and a fast-opening centrifugal advance curve. Don't be afraid to play with the distributor weights and springs.