

Drive-by-Wire, Really!

Lokar Performance offers a modern solution to a modern problem

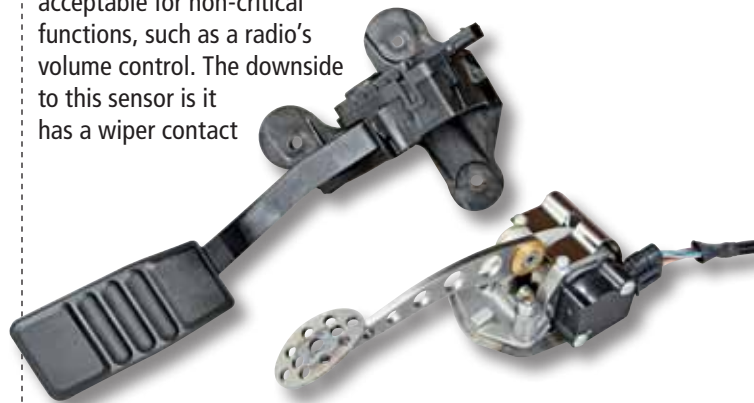
The days of routing a piece of wire from the carb through the firewall are over. Well, it should be! For a long time hot rodders have used mechanical throttle linkage (typically a Bowden cable, movement of an inner cable relative to a hollow outer cable housing) and it will continue to be part and parcel for years to come. But times are a changing and with the use of modular powerplants so come modern problems requiring modern solutions. With these powerplants come the need for new and better ways to control them. The electronic throttle control (ETC), or drive-by-wire system, is just such a modern solution to a modern problem—a modern hot rodding problem.

Lokar Performance is always on the forefront with all things cable; throttle, transmission, and brake. They introduced a short time ago an electronic throttle control device (drive-by-wire) for today's modern motors. (Lokar has partnered with Williams Controls to produce this product.) Most popular of the modern hot rod V-8s that can use an ETC are the Chevy LS and the Ford modular series. Detroit has used ETC for a number of years with their original intent developed to improve fuel economy and to accommodate variable cam timing. By separating the throttle angle (produce engine torque) from the pedal position (driver demand), the drive-by-wire allows the computer to maximize fuel control and transmission shift points, while at the same time delivering the required power to the wheels. Since more and more drive-by-wire-equipped motors are finding their way into street rods, Lokar identified

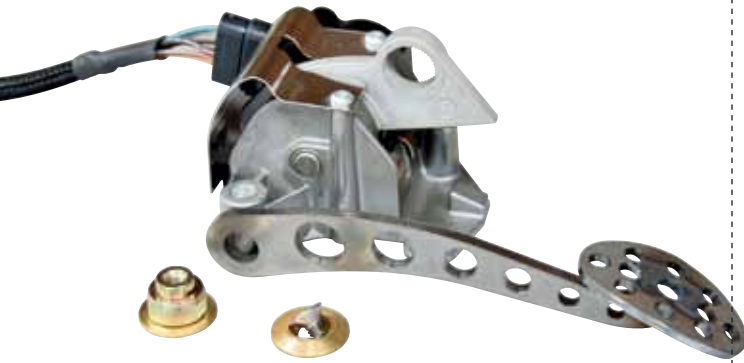


the need for the home or professional builder to have the ability to use this modern technology. (The Lokar Drive-By-Wire Electronic Throttle Control Pedal Assembly was acknowledged with the 2011 Goodguys Best New Electrical Components & Accessories award and it was also credited with one of the 2010 SEMA Best Engineered new product awards.)

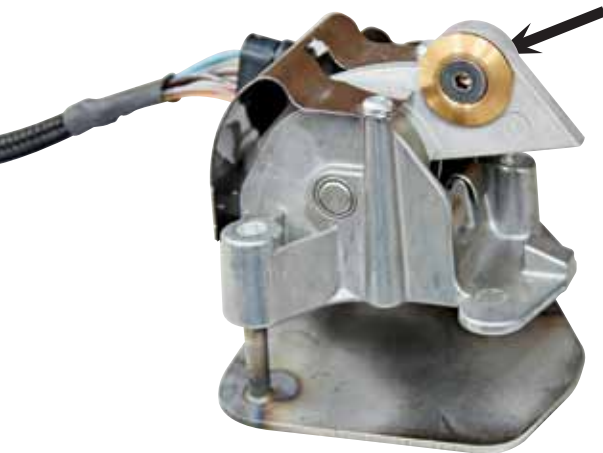
The Lokar ETC is the first programmable drive-by-wire for the automotive aftermarket and it features a programmable non-contact (solid state) Hall-effect sensor for most GM, Ford, and Mopar applications. There are two primary types of throttle position sensors: a potentiometer and a Hall-effect sensor (magnetic). A potentiometer is acceptable for non-critical functions, such as a radio's volume control. The downside to this sensor is it has a wiper contact



At the top is a typical Ford (Mustang) electronic throttle control (drive-by-wire) with the Lokar Performance ETC (with Hall-effect sensor) with a Lakester-series pedal assembly attached.



The pedal assembly and the bushing are both splined, allowing the pedal pad to end up in a driver comfortable position.



The Delrin bushing is an Acetyl Nylon with a low friction property, making this an ideal bushing.



The Lokar ETC with the Lakester pedal assembly in position. Once mounted in the car you can adjust pedal pad to final adjustment to suit your foot position needs.

rubbing against a resistance element; and dirt and wear between the wiper and the resistor can cause erratic readings. The more reliable solution is the Hall-effect sensor that's magnetic and makes no physical contact, thereby not subject to failure through wear. Additionally, the Lokar pedal arm is splined, allowing for multiple mounting positions. The Lokar drive-by-wire has three basic part numbers (Ford, Corvette, and GM truck) and the sensor comes in a brushed or black finish. There are also several dozen different pedal combinations compatible with the Lokar ETC.

We used the Lokar Lakester throttle assembly with the "raw" metal pedal pad. The lower arm is splined for versatility and can be mounted to the right or left of the mounting bracket. The Lakester pedals have a curved pad and arm. The Lakester series comes in a chromed or black finish along with the raw appearance. We coupled the Lakester pedal to the Lokar ETC to work with our Ford Coyote motor in our Brookville Roadster's stretched '31 Ford roadster pickup at Hot Rods by Dean. The Lokar ETC allowed us to place the pedal where it would be most comfortable for the driver; an immediate advantage of the drive-by-wire system. You will have to decide upon your own mounting, as you would do with any throttle pedal assembly, but once that's done you are ready to go. Remember you are drive-by-wire, which allows for the throttle position to be determined by the driver's comfort—a really good thing when it comes to the often-cramped confines of a hot rod interior.

The fact is Detroit wanted ETC to be unnoticed by the driver, allowing for a seamlessly consistent throttle response irrespective of prevailing conditions, such as engine temperature, altitude, accessory loads, and so on. Because of this a dynamic, such as acceleration, response may not "feel" the same to a driver of a traditional mechanical linkage versus an ETC system. However, just as you are comfortable with your daily driver, which more than likely has drive-by-wire, you may sense that the throttle response of a drive-by-wire may be slightly slower than the traditional mechanical throttle. The ETC allows for dramatic improvement, which you as a driver can feel in shifting gears and dealing with torque changes normally associated with rapid acceleration and deceleration.

The times have changed and for those rodders wishing to use the latest in powerplants then the ability to have the "rest of the modern solution" is something of real advantage. Drive-by-wire isn't entirely new to the automotive industry but now it's something hot rodders can include in their problem-solving arsenal. **SR**

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You will have to configure your own mounting bracket. In our case we made a baseplate with a pair of mounting studs.



The plug snaps into the Hall-effect sensor and seals against moisture and dirt.



Our baseplate was permanently attached to the interior portion of the firewall just above the toeboard. The Lokar ETC then bolts to the pair of studs and is secured via washers and Nylocks.



The baseplate and the ETC are ready for installation.



The Hall-effect sensor is visible along with the wiring loom from Lokar.



The wire loom attaches on one end to the Lokar ETC and the other end splices into the engine wire loom. In our case the three wires are the same color code as the Ford motor that the ETC will be used with.