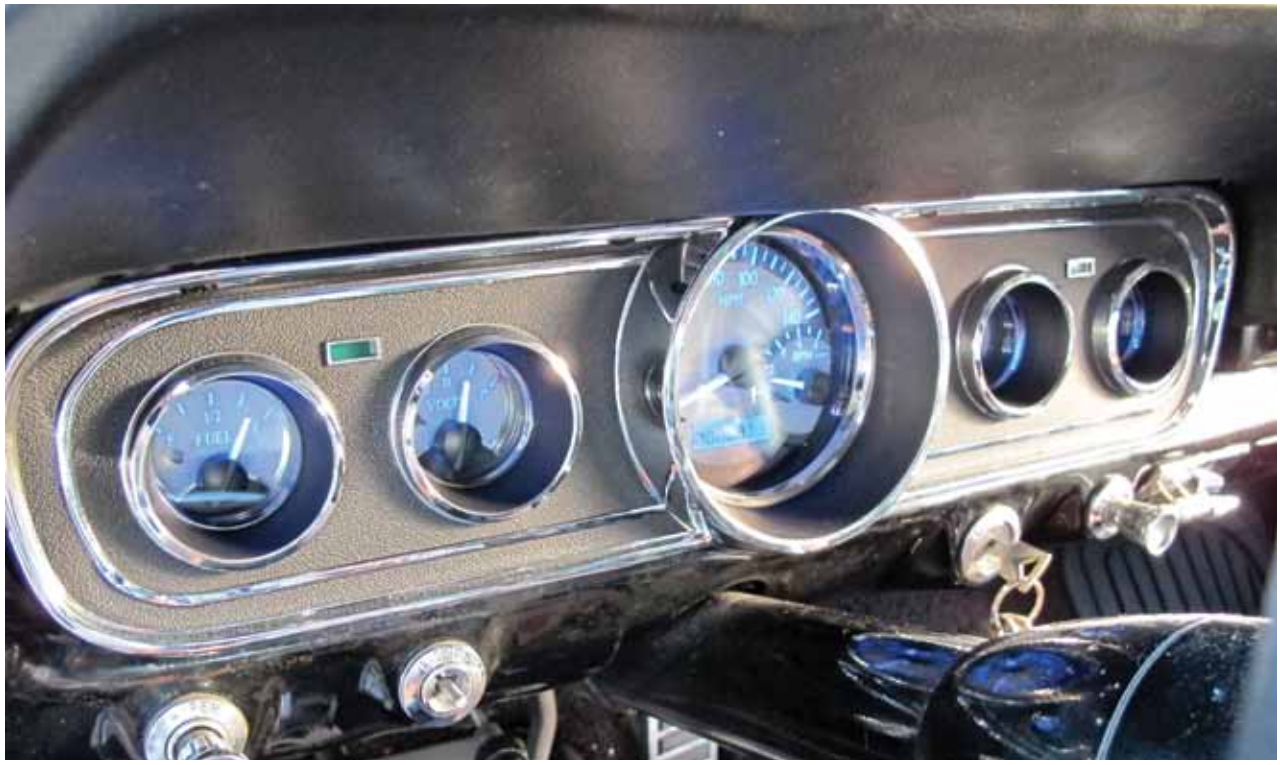
Install Dakota Digital's New VHX Gauge System

Update your Mustang with high-quality analog gauges that bolt right in

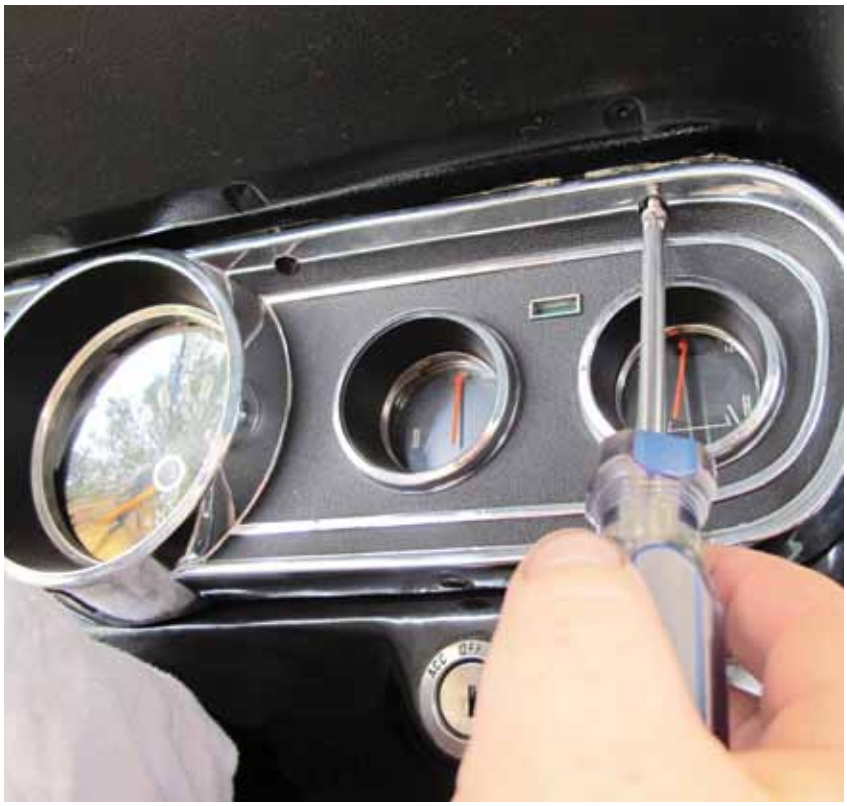
Your Mustang's gauges are an important and vital part of monitoring your car's engine vitals, your fuel level, and, of course, your speed going down the road. Many factors come into play that can turn your stock gauges into inaccurate "guesstimates" at best and sometimes completely non-functional at worst. Often, modern tire sizing or aftermarket wheel sizes play havoc on the accuracy of your speedometer, a situation that is not always an easy fix via a speedometer gear swap. Age also takes its toll on gauges, causing them to read lower or higher than the actual level the sender is telling it. Modern drivetrains with high-output alternators aren't kind to the stock ammeter found in the early Mustang gauge cluster as well (not to mention the ammeter itself is a hazard). The early Mustang gauge clusters were often sans a tachometer option, especially the '65-'66 five-dial setup, were there was no physical location in the cluster for the tachometer to reside. Lastly, age also affects the gauge's readability. Four decades of sunlight fade gauge faces and needles, and the stock incandescent perimeter lighting is tough on the eyes during nighttime driving.

Finding a replacement gauge solution just got a lot easier thanks to the folks at Dakota Digital. You might remember the all-digital gauge options for the Mustang that the company has been offering for years, well it now offers a new line called the VHX (a loose acronym for Vehicle Hybrid Instrument Systems). The VHX system takes the best of digital gauge accuracy and electronic dashboard technology, and utilizes precision stepper-motor-driven analog gauges to give your classic Mustang an easy-to-read and easy-to-install full gauge solution. Backlit faces and lighted pointers, just like your modern daily driver, make the gauges easy to read, day or night, while the LCD information panel offers supplemental

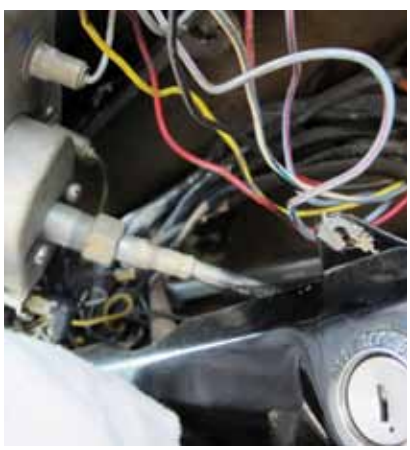


warnings like low fuel indication, over temp warnings, quarter-mile and 0-60 times, and much more, all while fitting directly into the Mustang's dash with the stock gauge bezel with no modifications.

We didn't have to look far for a volunteer for our installation either. The blue '66 Mustang coupe we used in our engine bay detailing story that appeared in our May '12 issue has its share of wiring issues; and when we drove it, we found an inoperative temperature gauge and a speedometer pointer that waved a "range" of speed, versus an actual indication. The dash lights didn't work and we were a little concerned his new high-output alternator would set his ammeter on "kill." The best solution for this mildly-modified coupe was an all new gauge solution and the Dakota Digital VHX system will solve this Mustang's entire gauge issues in one simple install.

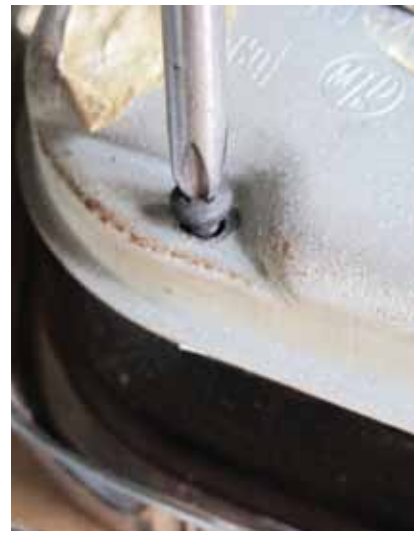


▲The Dakota Digital instructions are in two parts; a wiring and programming manual, and an assembly manual, so there's plenty of documentation to help you. The factory gauge cluster will need to be removed of course and this '66 only had four chrome screws holding the bezel to the dash (we'll fix that too).



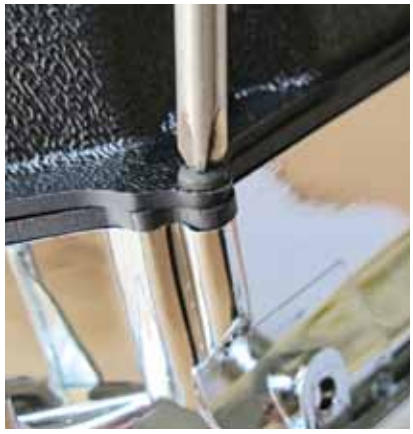
▲Protect your steering column's paint with a thick towel and pull the gauge cluster out far enough to access the speedometer cable drive and remove it from the speedometer head by unscrewing the end of the cable.

▲Disconnect all wiring to the gauges so that the gauge bezel can be completely removed. Most of the original wiring will not be reused except for the left and right turn indicators, the high beam indicator, the fuel gauge sender wire, one dash illumination wire, and the key switched power leading to the instrument voltage regulator. Tape or note these wire colors for later.

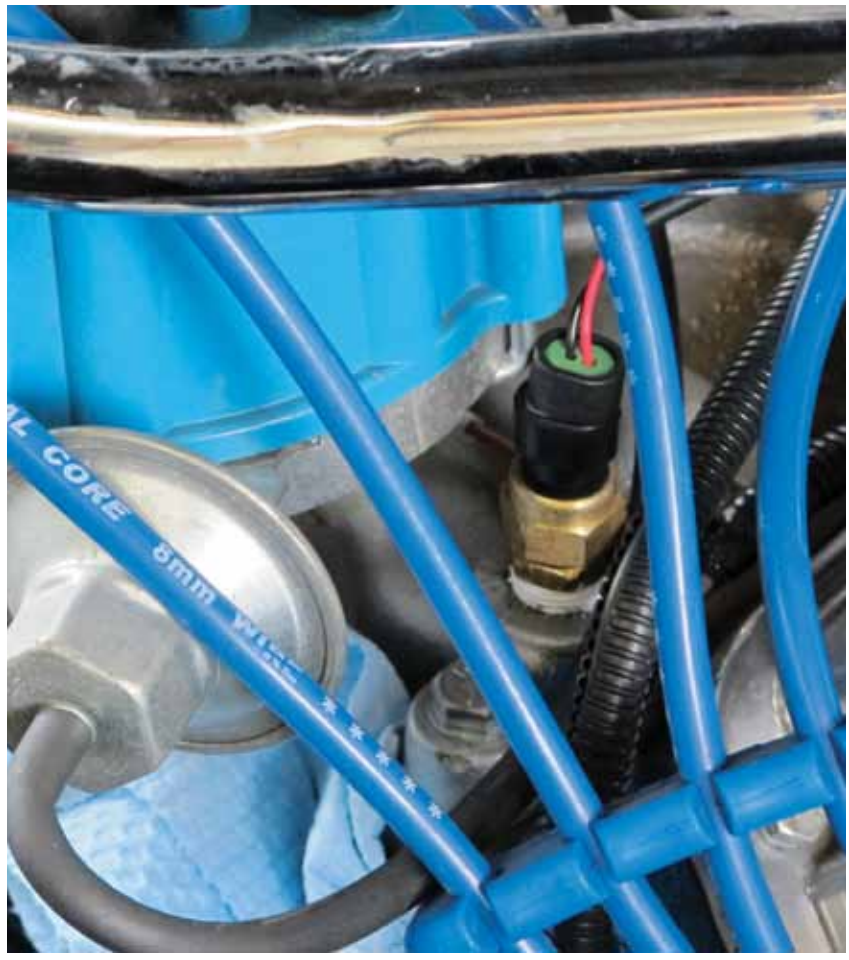


▲The VHX gauge display bolts directly into the gauge bezel with no modifications. Simply remove the eight screws that retain the gauges to the bezel along with the lenses. If you're planning a new bezel (which this owner purchased) you simply need to remove four of the original retaining screws for the new bezel and you can set aside the original assembly for storage.

▲The VHX gauge display for the Mustang comes completely assembled and internally wired. There's nothing you really need to do to prepare the assembly short of removing the protective plastic from the gauge lenses. We recommend doing this right before installing the bezel to prevent wayward scratches.



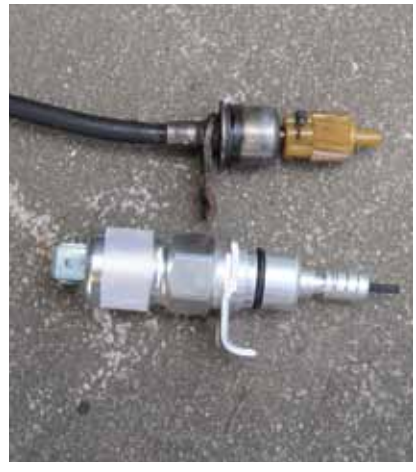
▲Slip the gauge display into the gauge bezel and ensure the assembly is seated. Dakota Digital provides four longer mounting screws for the bottom of the new gauge assembly to mate with the gauge bezel, while four of the original mounting screws secure the top of the assembly.



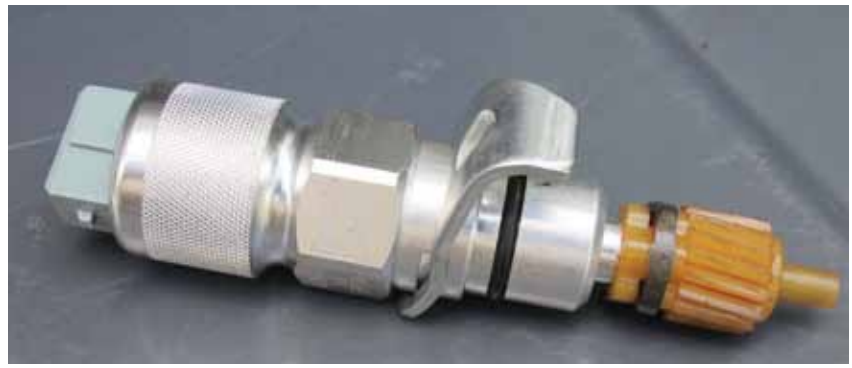
▲Dakota Digital includes new wiring for their senders with a water sealed connection. Simply slide the connector into the sender until it locks in place. Your original single sender wire can be removed if you like, or you can discreetly tuck it into the OE harness and tape it up, which is what we did.

▲The VHX system uses a set of high-resolution solid-state sending units that will replace the standard senders on your engine now. Up first, we're taking care of the temperature sending unit. Simply unthread the old sender from the intake and install the supplied VHX temp sender (it's the one with a two-wire connector) and any required thread adapter, provided.

▲The oil pressure sender is installed in the same manner using one of the included thread adapters and the provided wiring harness. We carefully routed the wiring up to the intake and secured it to the factory wiring, routing both new sender harnesses to the firewall area.



▲The VHX system uses an electronic programmable speedometer for easy calibration no matter what driveline/tire size/gear ratio is being used. The electronic speedometer and its sensor is also how the performance calculations like 0-60 are made. As such, the stock speedometer cable will need to be removed from the car. The new speed sensor is shown here below the stock (and well-burnt) cable.



▲The only prep for the speed sensor is to swap the speedometer cable's driven gear over. Carefully pry the retaining clip off the gear with a pick or small screwdriver and then slide the gear off of the end of the cable. Transfer the gear to the speed sensor and secure it with the original clip, as seen here.

▲The speed sensor bolts into the side of the transmission just like the old cable. The included sensor harness snaps onto the end of the sensor and then must be routed to the interior. We ended up routing it over the top of the transmission, joining up with the coolant and oil sensor wiring, and then routing all three harnesses through the old speedometer cable hole in the firewall.

▲Since the VHX display includes a tachometer (both in the face of the speedometer and available as a digital readout in the odometer window) a tach lead wire is required. This wire is not provided, so you'll need a sufficient length of 16-18 gauge wire to route from the coil's negative terminal (shown here as the "TACH" terminal on this HEI conversion distributor) to the dash area.

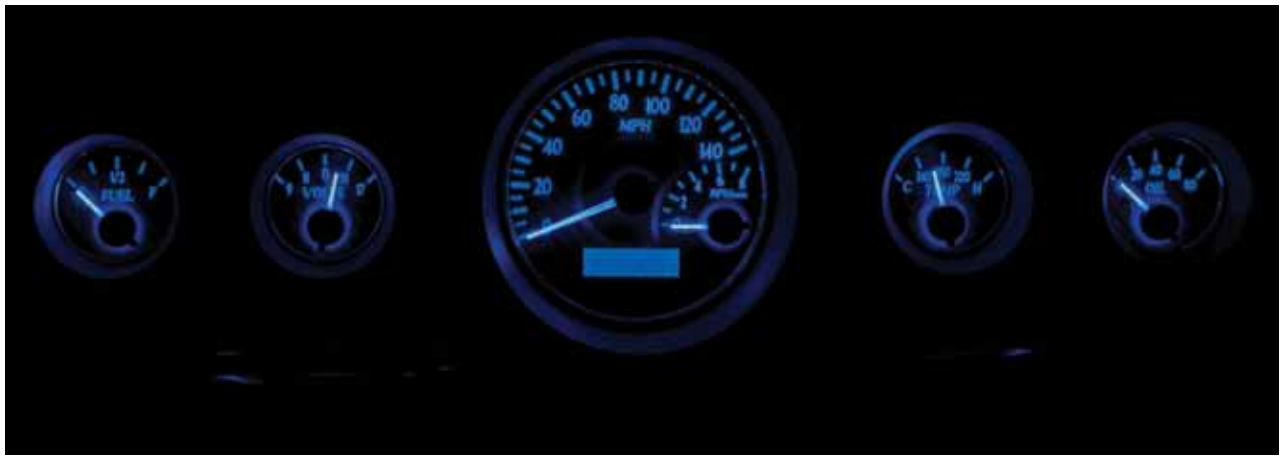
▲The VHX system includes two momentary push buttons to control functions of the LCD screens. The '65/'66 VHX system only has one such screen so we mounted the button in an existing hole in the bottom edge of the dash; easily reachable while driving. The '67-'70 VHX system utilizes two LCD displays and you'll have to mount the second button if you wish to cycle through the second display's available readouts.

▲The brains, quite literally, behind the VHX gauge system is the Dakota Digital VHX control box. This box allows for all system wiring to be handled away from the main display panel, which is really great if you're custom wiring your whole project. It also makes installation of the display easier with a single multiplex connection. The sender wires are attached to the control box, while the aforementioned turn signal, high beam, and power wires are stripped and connected as well. The box doesn't require solid mounting or a ground so hook-and-loop tape or tie wraps are perfect mounting solutions.

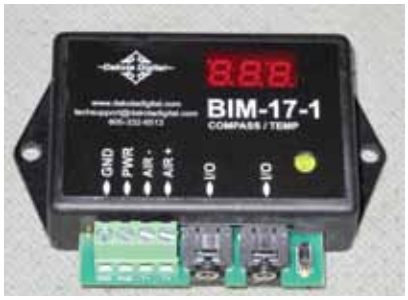
The multiplex cable is simply a standard RJ-45 Cat5 network cable and just slides into place with a reassuring "click." If you want to mount the control box farther than 3 feet from the display, you can purchase general Cat5 network cables in longer lengths from your local computer supply store.

The assembled display is secured to the dash with the proper black mounting screws in all six locations. The owner picked up the fasteners when he bought the new gauge bezel, which is smart thinking!

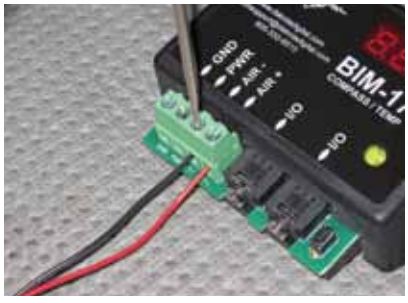
The VHX system powered up at the first turn of the key and the first thing the LCD display will warn you is that the speedometer and fuel level type need to be set/calibrated. There are a plethora of features—too many to go through here—that the VHX system can do, including warnings for all gauges (low fuel, high temp, low voltage, and more), the ability to use the LCD display for a secondary signal indicator, and much more. The instructions are very detailed on how to go through all of the settings using long and short pushes of the momentary switch we mounted earlier.



▲Besides all of the great warning features and modern accuracy, probably one of the most welcome features for our tired eyes is the illumination. You can't beat backlit needles and through-the-gauge lighting like newer cars. Illumination can easily be adjusted with a momentary button or an optional rotary dimmer. Best of all, you can set the control box to illuminate the gauges during the day and dim them when the headlights are turned on.



▲The LCD information panel in the VHX display can also play host to several add on modules called BIMs, or Bus Interface Modules. Shown here is the BIM-17-1, which offers an outside thermometer and compass heading function in the gauge panel's LCD display.



▲Wiring of the BIM is straight forward. The temperature sensor wires are secured to their terminals and the other two terminals receive power and ground wires. The included mounting bracket makes securing the module a simple job, but note the module must be level and oriented and you have to go through the VHX setup menu to select the proper compass location.

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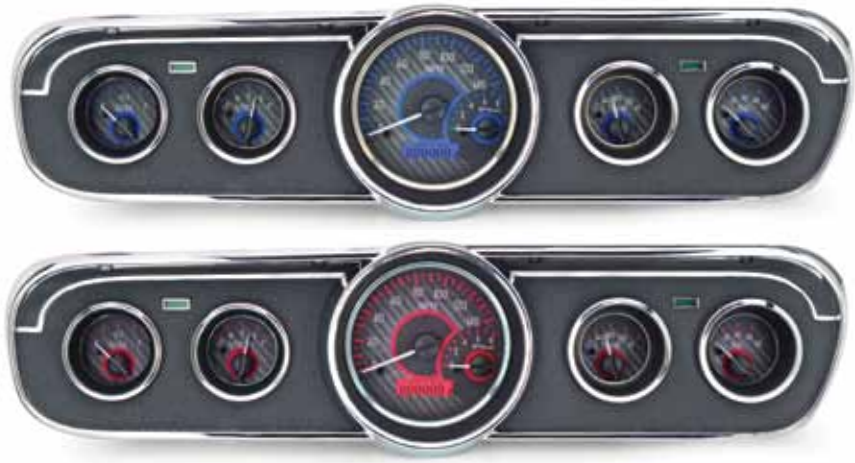
▲Once secured, the outside temperature sensor is routed to the front of the car. The instructions state to ensure the sensor is in the car's regular airflow path going down the road. The small hole in the end of the sensor makes it easy to secure the sensor to the grille with a small tie-wrap.



▲While we installed the silver alloy-style gauge face with blue illumination (PN VHX-65F-MUS-S-B, $795), Dakota Digital does offer a carbon-fiber look gauge face as well. Both gauge styles can be had in blue or red illumination to match your vehicle. Additional VHX systems are currently available for '67-'68 and '69-'70 Mustangs as well, with a separate round clock available for Mach 1, Grande, and Deluxe Décor interiors available on the '69-'70 Mustang.