Inject Your Horse PART 4, THE SMALL DETAILS

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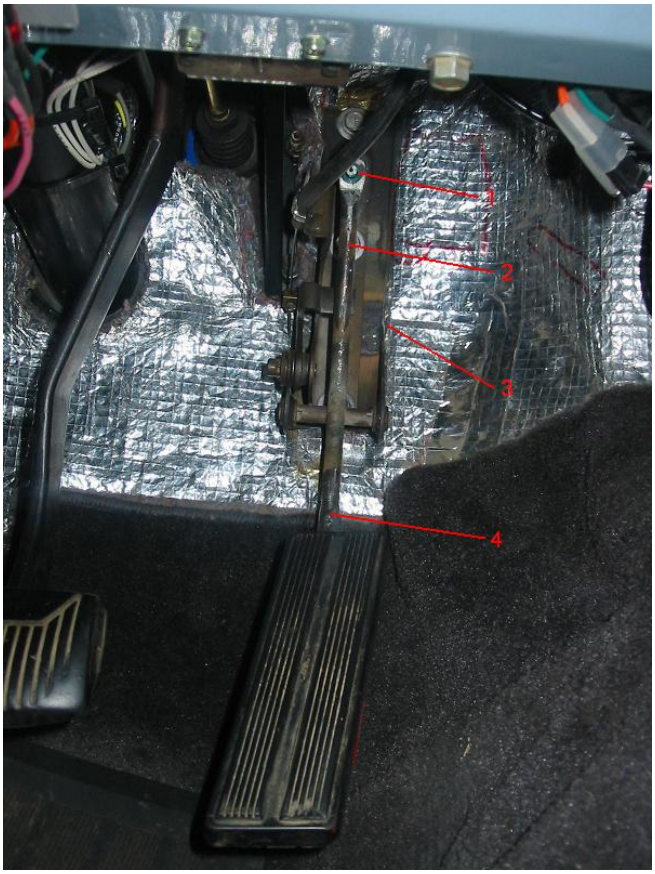
Straight to the bad news friends, we aren't finished with the EFI conversion yet! I know many people want to see a climactic EFI install, pictures of a shiny engine, with an early Bronco moving on its own power with EFI - but we can't install a fuel system, and then use a TV commercial break to hide the small details. We need to get the throttle connected to the pedal and mount the computer. This might not sound very hard, but it's the small details that make every project come together. This month I asked a good friend, Lars Pedersen, to help with these small details. His fabrication skills are superb, and I could not think of a better person for this task.

When Lars installed a SEFI 5.0 a couple of years ago, he referred to Brian Wickert's excellent article at www.broncofix.com describing his swap. Brian described how to modify the stock early Bronco gas pedal to work with the stock Mustang 5.0L throttle cable. That procedure is simple, but you need an acetylene torch or some other means to get the gas pedal rod red-hot. Start by grinding off one side of stock throttle linkage ball, punch it out, and drill the remaining hole to 11/32" (location 1 on the photo). Cut the top of the pedal straight down to the hole. Gently chisel the new slit open to allow the throttle cable to slip into the hole. It will now accept the green plastic end on the Mustang cable. Heat the rod on the pedal just below the newly modified end (location 2 in photo) until it's red-hot, then grab the flattened end and twist the rod 90 degrees. Now the flattened end of the gas pedal rod will be facing the firewall where the cable comes through. The cable housing has a flange on the end. The shank of the flange passes right through the hole in the Bronco gas pedal bracket and one of the holes even lines up. Drill a new hole in the cable flange to line up with the other one in the Bronco gas pedal, and then everything bolts back into the Bronco. Routing the cable around the back side of the EFI intake manifold took some thinking but I eventually wound up with an S-bend. The cable connected up easily and the pedal was even the right height off the floor.



I drove the Bronco that way for over two years. The only problem I had with the gas pedal was that it was too sensitive. The pedal throw was really short, which made the engine rev up too quickly. One day, after I'd run out of other projects (and money) to distract myself with, I was browsing the internet and read about Francois Ellet changing the leverage of the gas pedal to reduce the sensitivity and decided to do something about mine. Francois posted information about his changes to get me started. I measured the distance from the pivot up to where the cable connected and from the pivot to where the pedal attached. Again I don't remember the exact numbers, but all EB pedals are the same- I think it was something like 6 inches and 7 inches respectively. I decided to shorten the distance above the pivot by an inch and lengthen the distance from the pivot to the pedal by 2 inches. If I shortened the upper part by an inch I realized I would have to move the pivot point up by an inch or something similar, in order to be able to connect the cable to the pedal rod. Time to get to work. I unbolted the pedal assembly from my Bronco, and then sawed an inch off the end of the pedal rod. I then heated the end of the rod with my trusty torch and attacked it with my hand sledge (BFH) which flattened it nicely. Drilled a new 11/32" hole through the flat, and slotted it with my hacksaw. It looked exactly like it did before I started, only an inch shorter. The new end is what's shown in the photo. Compare it to a stock pedal end, it looks about the same. Now, to deal with the pivot. I hack-sawed an inch out of the pedal bracket (at location 3 in the photo), and then used my ever-handy acetylene torch to weld it back together. I drilled a new hole at the bottom of the bracket 1 inch below the old one. Then, I held it up to the firewall to make sure everything lined up, which it did. Now I needed to lengthen the lower part of the rod. I cut it at location 4, then scrounged around the garage looking for something to use as a spacer. I stumbled on a piece of 1/4" steel water pipe, which has a true OD of .54 inches and an ID of .364 inches. Perfect. I cut a piece about 3 inches long and drilled it out to 3/8", which is the true diameter of the Bronco pedal rod. I slid each cut end of the pedal rod into the pipe and welded everything together. It took some fitting and bending to get the pedal comfortable. I had to bend the tab under the pedal so it could rotate down more, as it was otherwise too horizontal for my liking. I also needed to bend the rod so I could get full throttle before the pedal hit the floorboard. The whole job took less than 2 hours including head scratching, and throttle response was improved greatly. It's now much easier to feather the throttle, especially handy in tricky off road situations, or when getting started in heavy traffic.

Broncos have such potential that you simply can't zip tie the computer anywhere and expect it to be safe. Ford computers are very durable; but they don't like water or temperatures above 185°F. Inside the cab with the passengers is the ideal place to locate the computer. There are a few options, remove the cold air inlet and it can be bolted to the kick panel. But you loose the cold air inlet, and hosing mud off the floor might be a $150 mistake. No, you can't wrap the computer in duct tape or cover it in silicone; those are heat sinks on the outside for cooling. Inside the glove box is also a great option, it's higher up in case you take a bath, but you lose that storage area. There is a sweet spot right behind the factory speaker in the center of the dash, nice and high, and we don't loose the glove box. Lars Pedersen has designed the perfect bracket just for that location. You can build it yourself or take the diagrams to a metal shop.