

The Honda Factor

Honda Vehicles with the Center O2 Port

This article focus on three vehicles that have developed a reputation for triggering the check engine light (CEL, P420) and being difficult to resolve with anything short of a new dealer part. Several manufacturers are researching the problem in an effort to find a solution. So far the best solutions they have come up with is to make a larger hotter brick. This helps to some extent, but the parts they come up with often involve relocating the O2 sensor behind the converter, or otherwise tampering with the design. Even the latest implementation of high efficiency converters have not succeeded in consistently keeping the CEL off. In this issue, I will tell you why their best efforts have not succeeded and why the part that we supply from stock solves this problem.

Is the engine really tuned?

We should all understand that catalytic converters only function properly when the vehicle is properly tuned. However, there are circumstances where the converter has failed for no apparent reason. This baffling phenomenon has become more common on today's OBD-II vehicles. One can replace sensors, plugs, wires, and do all the required tune up items and despite this, the vehicle often continues to trigger the CEL even after tune up work is performed and the converter is replaced. What is really happening is that the fuel air mixture is not burning completely. Inside the combustion chamber, carbon can build up, as the fuel/air mixture is compressed in the chamber this carbon build up absorbs fuel and oxygen like a sponge, thus a portion of the mixture does not burn along with the rest of the mixture. Instead, it gets released when the combustion chamber depressurizes. The primary O2 sensor detects the excessive oxygen content in the mixture (remember, it didn't get used for combustion) and richens the mixture. This causes several problems, including additional carbon build up.

How Does this Affect Catalytic Converter Function?

The converter depends upon a proper fuel to air ratio to operate properly. The extra oxygen saturates the cerium in the catalytic converter. (See Catalytic Converter Theory Operation and Testing pg.6) If the converter cannot store oxygen properly, it does not cycle properly. The rear O2 sensor measures for proper oxygen storage and an overall drop in oxygen content of the exhaust gases. Since the converter cannot operate efficiently under these conditions, the computer sets a P420 code. Replacing the converter may temporarily clear the light, but unless the underlying cause is corrected, the issue will continue to return. The initial solution is to remove the carbon build up from the combustion chamber. This can be done with a number of products and methods, but is basically performed by metering a solvent into the into the engine through a vacuum line or direct injection into the fuel rail. This removes the carbon build up and restores the engine to original operating specifications.

How does the Bear River Converters Part Differ from Other Parts on the Market?

Every competitive product we have seen on the market today has one crucial flaw. They are designed as a one-size-fits-all, and instead of building them to a quality standard, most of them are manufactured to a price standard. The product we supply is manufactured specifically for these applications. It is not available as a weld-in, and likely never will be available as a weld-in type unit. The converter that was selected by our supplier was chosen because it is very efficient, and has a high cerium content. It was also selected because it does not have a center O2 installed from the manufacturer. Instead, the center O2 is installed during assembly and is placed at a very specific position and angle to mimic the operation of original equipment. To my knowledge, no other product is available on the market today that accurately duplicates the correct placement of the O2 sensor. Because of this the failure rate of competitive parts will typically be higher than the BRC part. (As of the date of this writing, we have not received any reports of failures since we have supplied these parts.) We feel confident that these parts will perform according to the intended design.

What Parts are Available and What Models are Covered?

We carry parts for the Honda Accord, Odyssey, Acura TL series, and several other models as well. The Accord 4 cylinder models use part# HON-1660 and the Accord 2.3L 6-cylinder models, Acura TL series 3.2L 6-cylinder models, and Honda Odyssey 3.5L 6-cylinder models use part# HON-1680. The Honda 6-cylinder models, especially the 3.2L and 3.5L applications are much less tolerant than the 4 cylinder models.