

Wheels: An e-mail from Brian says, “I am a long-time reader of your “Straight Talk” column but a first-time writer. I am curious: I’ve heard about “turbocharged diesel” engines but I’ve never heard of a “supercharged diesel” engine. Could you explain why an automaker would turbocharge a diesel engine in the first place. Isn’t that just for high-performance cars? And why don’t they also make supercharged diesel engines?”

Halderman: Diesel engines operate differently from gasoline engines. A diesel engine does not use a throttle to control airflow through the engine but instead increases the amount of fuel to increase engine speed. The more air that can be forced into the cylinders, the more power the engine produces. A turbocharger uses the wasted heat in the exhaust to spin a turbine, which is connected to an impeller that forces additional air into the cylinder. A supercharger is engine driven and takes some power away from the engine and is not normally used on most diesels except on Detroit diesels, which operate on the two-stroke instead of the four-stroke design. A turbocharger along with an intercooler to cool the compressed air together can double the power and torque output of a diesel engine.

