

Wheels: An e-mail from Barry says, "I have a 1984 Chevy G-10 van with a 5-liter engine. It has 191,000 odometer miles, but only 73,000 miles on a completely rebuilt engine. It has a nearly-new catalytic converter and passed E-check in 2004 by a huge margin. I recently replaced the muffler. The original equipment muffler had one 2.5" input pipe and two 2" output pipes and cost \$90 plus \$15 for each tailpipe. The one-size-fits-all muffler had one 2.5" input pipe and one 2" output pipe and cost \$24 plus \$15 for one tailpipe. I installed the cheaper muffler. I have two questions:

1. How much will increased backpressure decrease gas mileage and at what speeds will this be most noticeable?
2. Are emissions likely to increase enough to prevent passing E-check?

Thanks very much for your help."

Halderman: The new muffler and tailpipe will not affect the exhaust emissions at all. Because you changed the factory sized pipes, I think there will be a slight increase in backpressure but this would only occur at high engine speeds. If you are towing and driving in hilly areas where the engine will be operating at high speeds (RPM), then this increase in backpressure may be noticed. I doubt that the change you made will be noticed at all in normal driving and should not affect the fuel economy.

It is normal for the outlet of a muffler to be smaller in diameter than the inlet because the exhaust loses heat in the muffler and the exhaust gases are then more dense when they leave the muffler compared to when they entered the muffler.

