

Pac Brake Exhaust Brake Review

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I've always felt that light duty trucks just don't stop very well when pulling any type of load down hill. With the popularity of off road recreation growing, I've noticed diesel trucks towing our big toys all around the country. It's a little scary knowing that the majority of those trucks cannot stop very well, and neither could my Dodge truck. The brakes on my 2006 Dodge 3500 are simply inadequate when towing my loaded 30 foot 5th wheel down long grades.

After doing a little research on the Internet, I found that I wasn't the only one having problems stopping and prematurely wearing out the brakes. I made many phone calls to diesel shops looking for a solution, and came to the conclusion it was time to get an exhaust brake. Exhaust brakes don't seem to be a product that get much attention these days, as you typically see ads plastered all over the magazines for making your diesel truck faster, and bigger. But it wasn't until I had driven a friend's tow vehicle with one did I really understand the benefits and safety. Exhaust brakes are not new to truckers, as they have been around for many years. Does the term "Jake Brake" sound familiar? Think of an exhaust brake like this; it's very similar in function to putting a shut off valve on the exhaust. Pretty simple in theory and very effective, which is why they have been used for so many years on big rigs.



The Cliff's notes - an exhaust brake is a butterfly valve in the exhaust pipe.

A typical exhaust brake consists of a butterfly valve inserted in the exhaust system to slow the engine down. When you take your foot off the gas pedal, this butterfly closes and the back pressure created slows the engine down, which in turn slows down the drive shaft, resulting in brake horsepower helping you to stop your truck and load.

Shop after shop said the one they sold was the best. Good to hear, but I needed more than that. I did some more research and decided against the standard fixed orifice exhaust brake. A fixed orifice exhaust brake has a butterfly valve which has a hole in it so that the engine can only build up so much back pressure, thus creating only so much braking. A fixed orifice brake by its design, has diminishing returns. This is because as the exhaust brake begins to work and slow down the truck, the RPM's of the engine begin to drop which creates less exhaust pressure and therefore less brake horsepower. Fixed orifice brakes are made by most exhaust brake manufacturers.

The PRXB self regulates back pressure.

In my research, I discovered the PRXB (Pressure Regulated Exhaust Brake) by Pac Brake. This is not a fixed orifice exhaust brake, but a self regulating exhaust brake designed to maintain the maximum exhaust back-pressure at low engine RPM. The PRXB utilizes a bypass plate over a larger orifice actuated by an external regulator spring, and works much more effectively at lower engine RPM's when the exhaust brake is needed. The Pac Brake PRXB has a patented air valve that is designed to close as the engine's RPMs begin to drop. The closing of this valve creates higher back pressure and therefore higher brake horsepower. At 1,200 RPM the PRXB will create the same braking power as a traditional fixed orifice exhaust brake does at 2,200 RPM. The net result is that the PRXB provides much better braking over a much wider RPM range than any fixed orifice exhaust brake manufacturers.

With all this known, I called a local dealer here in Placerville, CA, called Wards Automotive and spoke to Cory. He was very helpful and very knowledgeable, explaining all the pros and cons to doing this myself or having them install the kit. My biggest concern was voiding the warranty of my new truck. Cory assured me that this would not cause any warranty issues, and I had chosen the best kit. So I went ahead and ordered a PRXB exhaust brake from Wards. To much of my surprise, they called me back that afternoon with a next day appointment.

I was very impressed when I arrived at their shop. The place was immaculate! I was greeted by Cory the sales guy, and little did I know he would also be the one installing my exhaust brake. I mentioned to him that I wanted to document the install, and he said that would be fine as long as I didn't get in the way.

At 8:30AM my truck was pulled in the shop and Cory had put on his coveralls to get started. I helped open up the boxes and we inspected everything. Cory tossed out the instructions and laid out all the parts. Of course I had to ask, "you sure you don't need those instructions?" He said he had them memorized. That pretty much put my mind at ease, and that my truck was in the best of hands. Cory began by installing the air compressor with the supplied bolts, aluminum spacers, washers and nuts. The kit came with everything needed, and Cory knew exactly which spacer went where.

Next was the mini air tank, air connections, and solenoid. Cory located it under the drivers side frame rail by drilling (2) 5/16 inch holes, and the supplied bolts.

By 9:30AM Cory was removing the (2) V clamps that were connected to the turbo and down pipe, and then removed the old cast iron piece that the new exhaust brake would replace. He then installed the new PRXB Exhaust brake, V-clamps, holding bracket and was out from under the truck in 30 minutes

Next was the pressure line for the air cylinder on the PRXB to the solenoid on the air compressor. Cory installed the air filter and air line down to the mini air tank. The kit even came complete with plastic "conduit" to cover the air lines and protect it from heat and abrasion.

By 10:30AM Cory had installed the wire harness relay assembly using the 2 Tex screws provided, and routed and hooked up the wires to both solenoids.

Now the Pac Brake interface needed to be hooked up to the truck's computer (ECM). Cory removed the torx screw that held on the main connector B that attached to the ECM unit. He removed 2 little red pins on #42 and #39 and inserted the wires. He reassembled connector B and was done in no time. At this point he hooked up the main power wires to the battery from the relay assembly. One relay is for the air compressor and one for the Pac Brake air ram actuation. Cory then tied into the ignition switch using a T-Tap connector that was supplied, and even used Permatex #22058 di-electric tune grease so the connector would never corrode and fail. Talk about meticulous! Cory went back through each air line and wiring loom with zip ties putting everything together all neat and tidy.

DRIVING IMPRESSIONS

As they wrapped up the final small details, Cory asked me, "You ready to take it for a spin?" I looked at the clock and to my surprise, it was only lunch time! We went for a test drive and Cory explained how to use the exhaust brake, how it will immensely help my brake/rotor life, and most of all make me safer while towing any type of load. The difference was awesome! I pulled the big red knob and heard the click of the brake engaging, and the truck actually lurched us forward in the seat without even touching the brakes. Ok, so it isn't as violent as slamming on the brakes, but it is very impressive! I also found out that when you start your truck up in the morning, you can actuate the exhaust brake and it will warm your engine up in 1/3rd the time. I have been driving with my Pac Brake for a couple of months now. I can honestly say that I can't imagine driving my truck without it. I suppose Dodge feels the same now, as their new 2007.5 trucks come from the factory with an exhaust brake!