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*What are the highlights of your summer?
Did you do anything especially memorable?
Spend time with anyone incredibly wonderful?
See anything extraordinarily beautiful?*

If you asked these questions of my mother-in-law she would emphatically say yes to each of them and she would tell you that a big part of it all was my third son, Jace. For the past three summers, Jace has gone to Wyoming to live with her and his grandfather—he helps with their property and house while also enjoying his favorite pastime (fishing) in the river in their backyard. Jace was the highlight of his grandparent's summer and together they took in the Grand Tetons in western Wyoming to round out the last question of seeing something extraordinarily beautiful.

Have you had the pleasure of visiting the Grand Tetons? What about the Grand Canyon? It seems many people have the latter on their bucket list if they've not already been there but the Tetons tend to not be as well known or talked about. With their breathtaking beauty, how can this be?

In the same way, my Jace tends to fly under the radar. I've written about my older two sons and my daughter in past articles but not this special young man. Jace is just a few weeks shy of his sixteenth birthday but is already my biggest, tallest son—with a whopping size 13 shoe! He has a gentle, quiet spirit, the very best sense of humor and a heart of pure gold (okay there might be some impurities where his sister is concerned). He is our neighborhood helper, grandparent caretaker and he is an extremely hard worker. With these qualities, how can it be that he is the least written about?

This had me thinking ... what have I failed to write about where the auto industry is concerned? After considering this question I realized I have missed a "Grand Teton" during my seven years of monthly articles—diesel-powered vehicles—specifically, the diesel truck.

Do you own a diesel truck?

Do you have a fleet of diesel trucks for your business?

Or are you considering purchasing one?

Why should you choose diesel?

What costs are involved with ownership?

How much are specific services?

What are things you need to be aware of as an owner?

**Let's look at the beauty of the diesel truck
and dig into the important things to remember
if you have one (or many) or are considering purchasing one.**

BIG AND BEAUTIFUL

Just the sound of a diesel engine might put a smile on the face of its driver and make his or her heart rate increase with excitement because of the magnificent power it exudes. Besides that, diesel trucks are also chosen and known for their durability, reliability, towing capability and long life. No matter your make of choice—Power Stroke, Duramax or Cummins, to name a few, diesel engines are built to withstand extremes. But because of how well they are built, these big beauties also come with a hefty price tag that might make your jaw drop. That being said, the upfront purchase cost might be choked down a little easier knowing that you'll have the power to do the heavy work and you will get many more miles/years out of your diesel than those who choose gas-powered trucks—potentially saving you money in the long run.

COSTLY BEASTS

Besides the upfront cost to purchase a diesel truck, do you know the depth and breadth of other costs involved? Wouldn't it be great if buying a more expensive truck also meant a low cost of ownership? Unfortunately, the opposite is true.

- A more expensive vehicle always means a higher insurance premium so you need to make sure you factor this into your monthly budget.
- Diesel fuel is typically more expensive, although, since it is much more efficient it requires less fuel than its gassy counterpart.
- Maintenance and repairs are always higher with diesel trucks—which also means that your truck will cost you more time in having it serviced.

MOUNTAINOUS MAINTENANCE

With the superior performance of the diesel engine also comes the need for superior maintenance. Diesel owners must understand that maintenance is absolutely critical to keeping your engine healthy in the younger years, performing well in the middle years, and still running in the geriatric years. It is not uncommon for a diesel engine to triple or quadruple the life expectancy of a gas engine—but it is likely impossible if maintenance is minimal or forgotten.

PEAK PROBLEMS

There are several foreseeable problems with a diesel engine that can be limited with scheduled routine maintenance and a few extra powerful services that can reverse the damage naturally occurring in diesel engines. The cost for services to combat the following problems varies widely depending on many factors including make/model, brands of products chosen and capacity of different systems. Therefore I am only able to list a ballpark range—you will need to drill this down based on your particular diesel truck and preferences.

#1: A diesel engine is chock full of power and therefore

the engine runs extremely hot. Consequently, the coolant is one of the most important needs of the diesel engine. It should be continually monitored because it has a tendency to become more acidic as it ages. If the acid level becomes too high it can cause other parts of the cooling system to rot—which will ultimately lead to expensive repairs. It is imperative that you take time to not only check it but to have it flushed as a preventative measure between 50K-100K miles and no more than every 5 years for most makes—but it truly depends on the coolant chemistry and severity of use. Coolant flushes for a diesel truck start at around \$180.

#2: Dirt is an enemy of your diesel engine components. When dirt and grime are present and enter the system, performance will be compromised and the life of the engine will be significantly shorter. The best way to combat the enemy is to keep it clean—clean oil, clean air, clean fuel. Failing to do these services regularly will lead to significant engine problems and expensive repairs.

- Oil—The oil you choose will decide the interval for changing it. The oil needs to be changed on time, every time. Also, the interval will need to be shortened if you live in a harsher climate with the temperature extremes we experience in SE Minnesota and also changed more frequently if your diesel is used for hard-driving and towing. Depending on engine size and oil choice, a diesel oil change can range in cost from \$70 to \$200. Additionally, BG offers a service called the Performance Oil Change where strong chemicals are used to powerfully clean everywhere oil goes in the engine. This is an add-on service technicians highly recommend because the cleaning is superb. Many diesel owners are shocked by the restored performance and incredible increase in MPG's. As with anything, you get what you pay for but even with the \$180 price tag, the fuel savings quickly pay for the service.
- Air— The frequency of air filter replacement will depend on the climate and environment you typically drive in (about every 12K-20K - with fuel filter is most typical). But no matter what the conditions are, it is important to monitor it closely and inspect

it frequently as it can become clogged faster than you might think. Timely replacement is needed so that the air entering your diesel engine is clean and effective. Cost for a replacement air filter can range from \$25 to \$100.

- Fuel—Many diesel problems originate within the fuel system. The first line of defense is paying attention to the fuel filters. Most newer diesel engines require two filters (a primary filter and a secondary water separator filter). Water contamination in the fuel can quickly ruin injectors—so it is also important to regularly drain that filter. Replacement of both should be done at the same time for optimal clean at approximately every 15K miles. Costs for these filters are \$100+ for each.

#3: The cause associated with the fuel system problems is due to the way the fuel system operates naturally but it can become even worse if the quality of diesel fuel is poor. Today's fuel quality varies widely so it is important to be mindful of which gas stations supply quality diesel fuel and use that as your first defense. Buildup will develop on fuel injectors, intake valves and ports and in the combustion chambers. These deposits can cause major problems if they fail including high internal leakage, lack of fuel injection, excessive fuel injection and excessive wear on injectors. Thankfully, there is a

service that can be done that will chemically dissolve the majority of these detrimental deposits before they get too thick and lead to more expensive repairs. The BG Diesel Injection Service does the following:

- Removes baked-on carbon from fuel lines, the injector pump, valves and ports, piston crowns and combustion chambers.
- Reduces emissions—limiting the effects your diesel truck has on our environment
- Improve throttle response
- Restores power and fuel efficiency

This robust BG service costs \$250-\$450. For optimal performance, it should be performed every 18K-24K miles. The BG Diesel Injection service will considerably improve your ride if the only cause of these symptoms is due to the buildup.

#4: The final common problem with diesel trucks lies within the induction system—everywhere air travels within the engine. The technology developed within this system for the reduction of oxides of nitrogen (NOx) is the exhaust gas recirculation or EGR. The EGR works by reducing the amount of oxygen in the cylinder, which lowers combustion temperatures. This is an efficient process for reducing NOx but it does not come without issues. Here's the big problem: the exhaust gases from the diesel's engine contain dozens of chemical by-products that occur naturally and are left behind after the fuel was burnt inside the engine. One of the by-products is known as particulates (a fine dust called soot). Soot is mostly carbon fuel that has not burned. The more efficiently the diesel burns its fuel, the less carbon soot is produced. But because diesel engines are not fully efficient, over time the soot begins to clog the EGR system.

You might be wondering if there is hope for this hot sooty mess before it completely wrecks this system that was meant for good. The BG Diesel Induction Service has proven chemical technology that is introduced to the induction system to blast away the caked on soot. This remarkable service will definitely make your pocketbook lighter at the price of \$500+ but the results will have your jaw dropping and a smile forming in triumph as power, performance, and fuel efficiency are restored.

NO BLUFFING

There are definitely awesome benefits to owning a diesel truck, but there are also some hefty costs associated with it. The good news is, if you take maintenance seriously, you will likely spend much less on diesel repairs because your systems will be performing well for many years with your dedicated upkeep.

If you are a diesel owner and are experiencing the fallout of your lack of maintenance, it's not too late! You can have them serviced well today with exceptional filters, cleaners, and fluids and then commit to continue with these services from here on out. If you are a future owner of a diesel, you're welcome—I've just laid out a beautiful plan to keep your truck running for many years to come. And if you don't have nor plan to purchase one of these Tetons of the auto industry, take this paper, fold it up and give it to one of your diesel friends—they will thank you for it!

As with anything, even if the main point of a story isn't relevant to your life, it is my belief if we read between the lines, we can find something that is. Yes, maybe this article was mostly about diesel trucks ... but between the lines, you might just see it's about the Tetons in life—those things that you don't always show gratitude for or highlight to others. Now's your chance. Do something especially memorable, spend time with someone incredibly wonderful and go see something extraordinarily beautiful. Enjoy the Tetons in life!

