**1) Do you remanufacture injectors?**

At this time we do not remanufacture injectors. The time and component costs of doing this correctly are equivalent to purchasing a new Genuine Bosch remanufactured unit. From what we have seen to date they are the only ones remanufacturing them correctly.

We can however repair injectors for items such as broken stators, damaged high pressure fittings, worn nozzles, or a no fire condition caused by gummed up fuel or extended downtime.

**2) Can you just modify my nozzles and send them to me, my truck is a daily driver and I can't pull it out of service to send you the injectors?**

WE DO NOT MODIFY OR SELL NOZZLES ONLY. Anything stock or modified we do will be a complete injector set when it goes out the door.

As much as we would like to help out we really wouldn't feel comfortable with sending nozzles out without final assembly and testing on our side. We have done thousands of injector sets and can say that most of the time we find an issue with a used set of injectors that requires attention. Sometimes major adjustments are needed and sometimes minor but we correct them, if possible, at the final balance calibration. We have done a few (very few) nozzle only sets in the past but based on our experience, when we did, we were playing with fire.

Same goes for new and reman injector sets. Yes, the injectors are calibrated at Bosch to their standards as stock, but once the nozzles have been modified and re-installed onto the injectors was almost always have to make adjustments to them in the final balance calibration to get them back into our specifications. When adjusting in microns the smallest change can create a large effect.

Our suggestion is to keep running until your injector set needs attention. We could then work up a set of new/reman oversized injectors and send them to you, at which point you install and send your old injectors back as cores. We allow a 30 day window for core return so this works out well for most in your situation.

**3) Is testing and balancing really necessary?**

Take a look at the comments from some of the most prominent tuners and builders in the country shown on our "Why Exergy" page. The real question is can you really expect top performance without it? Do you want to take the chance that all is well on an install only to find later you have a bad injector and have to do it all over again? Take a look at the top mechanical fuel system users in the country (P-Pump 12 and 24V) they balance the pump and injectors as a set. Bottom line - equal fuel and equal timing for all cylinders wins. Also take a look at the top common rail fuel system users in the country, from truck pullin, drag racing and even competition street trucks that do it all while staying clean and efficient. Almost all of these top competitors rely on consistent, reputable and balanced injector sets to stay at the top of the games.

When we test and balance we adjust internal assembly dimensions that may have drifted over time from their proper specifications. We measure and correct for proper operations across the operating range from idle to full power. This becomes increasingly important with higher nozzle flows.

With mechanical systems on mild builds testing is not as important as the systems are often easier to service, and the failure modes are much "softer". If something is not correct, typically it only leads an odd noise, or excessive smoke. Should something go wrong on a common rail system it can lead to complete engine destruction.

**4) How do you test and what does it mean to me?**

We fully test from idle to full power using factory calibration points and a few of our own added for the high performance market (see sample datasheet). We can fully map injector sets and have done so for a number of customers who want to best utilize their stand alone ECU or EFI Live capabilities.

We use equipment developed and used by Bosch for the design and development of diesel fuel systems (specifically Common Rail) and have the expertise on staff to properly operate and maintain this very sophisticated equipment. Some on our staff were involved in the development of this equipment and Common Rail Injectors when we were at Bosch. Our "toolbox" is very extensive along with our knowledge base. Most of us have been in the diesel business in excess of 25 years and have worked on the design and development of diesel fuel systems for everything from ships to single cylinder utility engines.

With our equipment we are able to measure not only injection quantity and timing, but shot-to-shot consistency. From the injector sets we have analyzed from others neither is being controlled let alone measured. Changes are made that bring the injectors into calibration at a few low pressure test points, but in doing so the hydraulic response of the injector to the electrical drive signal is affected. We have seen the beginning and end of the injection event vary in excess of 3 degrees crank on a freshly "rebuilt and blueprinted" injector set. Our testing capability is far beyond normal service center capabilities.

If you choose to work with another performance supplier, ask first for a copy of a typical test summary sheet. Do they provide injector output at multiple test points? Do they test at full rated pressure and output (23,200 psi for 5.9/LB7/LLY and 26,100 psi for 6.7/ LBZ/LMM)? Do they measure injector stability? Can they provide an output vs pulse width map at various rail pressures? Can they measure injector response time to drive signal?

If we test your injectors and find them to be within factory specifications for output timing and consistency it does not always mean they are as good as new. The wear and mileage they had when they arrived is the same as when we are done testing. We cannot lesson the mileage and wear that already exists. In general, original 5.9 and LB7 injectors are worn out at 100k miles. LLY/LBZ/LMM and 6.7 injectors typically last longer and are starting to show signs of wear at 150k miles. We have tested many sets that meet specifications with over 200k miles on them but have also seen sets come in with 50k miles that do not. This is a VERY general number and depends on many factors including fuel, how well the fuel system was maintained, duty cycle and modifications. Keep this in mind for your end use. If you are building your dream vehicle with top of the line components, using old, worn injectors may not be the best way to go. If you are on a tight budget, and the injectors test fine, then that may be the best way to go. Something in-between is a more difficult decision. It is easy to put 1/2 to 2/3 the cost of a set of reman injectors into baseline testing and repair of a worn set. When we are done, the injectors function as they should, but the time to "wear-out failure" is the same as when we started.

**5) Do you sell injectors?**

All the injectors and pumps we modify and sell are originally sourced from Bosch as remanufactured or new units for Duramax, Cummins and the new 6.7 Ford Powerstroke. We can also source most Bosch fuel system components. All we would need is a Bosch part number or an engine serial code to look up pricing and availability. Our prices may not be the lowest on these unique parts and the lead times can be long but we only sell injectors and components that are the best available. Normal core requirements apply.

**6) Are reman injectors any good?**

When done properly (and at this time in our opinion, the only proper remanufacturing is done by Bosch) these injectors are better than the original injector design. All wear components have been replaced with new, and in most cases improved parts, making Genuine Bosch Remans an excellent value.

**7) If a body is cracked the injector is bad, are there other reasons for having to replace an injector?**

There are components in the injectors that wear over time with the LB7 Duramax and 5.9 Cummins having the shortest life of all Bosch Common Rail injectors. After introduction of these groundbreaking products Bosch continued to tweak the design in an effort to improve fuel control and durability. The LLY/LBZ/LMM and 6.7 injectors are the fruits of this labor and hold up much better than the first generation series. In talking with service shops, customers and others across the country the general consensus is under normal conditions you can expect to need injector replacement at 100k miles with the original 5.9 or LB7 series (give or take, there are exceptions to everything). The replacement injectors (Genuine Bosch remans or new) are more durable than the OEM versions but are still not as good as later model (LLY/LBZ/LMM 6.7) design iterations.

**8) Are stainless steel 5.9 injectors better than standard 5.9 injectors?**

Stainless steel bodies do not exist, the new 5.9 series injectors have been changed over to the same material used for the higher pressure rated 6.7 series injectors. With the new body material the new 5.9s are stronger but still not as good as the 6.7 injector which has been designed from the ground up to handle higher injection pressures. This new material has a higher nickel content giving it a shinier look that people are mistaking for stainless steel. In terms of reliability and strength the new body material is an improvement over the original but is not, stainless steel.

**9) Do you do 12 and 24 Valve mechanical Injectors?**

No, we do not work with mechanical diesel fuel systems anymore. We have done some performance work in the past with them but we have been more focused on the development of the newer systems like the Chevy LML Duramax, Chevy Cruze TDI, Ford 6.7 Powerstroke, Ram Eco Diesel, Cummins Powered Nissan, etc...

**10) Do you test or repair high pressure CP3 Pumps?**

No, we do not test or repair used stock or modified high pressure pumps. We have tried in the past but it is typically more time consuming than it's worth. Unfortunately, when running one of these used pumps on our test bench, the bench must be partially torn down and thoroughly cleaned of all possible debris and contaminants before we run our new modified pumps. Note: We will still test our own pumps as needed for possible issues per customer request.

**11) How big of an injector (or flow of nozzle) do I need?**

Making a set of injectors to achieve your power target as smoke-free as possible is no problem. However, specifying a set that best meets the targets for your application is best done by a dealer, especially at high power levels. There are a number of variables to consider, and our specialty is more in building the injectors than specifying them. The price from a dealer, or direct from us is the same, so it is best to get as much dealer application experience involved as possible.

**12) Do you make larger bore custom High pressure lines?**

Typical line sizes are 8mm OD with a 3.5mm bore and 6.35mm OD with a 3mm bore. 12x1.5, 14x1.5 and 18x1.5 fittings are available. We have a large assortment of different length HP lines in stock and we can order most custom lengths as needed. We also have a large assortment of custom HP fittings for rails and pumps as well as HP outlet relocation kits for pumps that are mounted in tight locations. .

**13) Do you service Ford 6.4 injectors?**

No, we do not currently work with or test 6.4 Powerstroke injectors. In 2008 - 2009 we spent several months developing test equipment and a test procedure for this injector. Throughout this time we were unable to match the results on our test bench with those in the vehicle. In other words, the outputs/performance on bench did not match the power levels observed in the truck. After this time and effort we decided to stop the development work. Rather than conducting further development "on the back" of the customer and risk getting a "black eye", we do not test them. We recommend you strongly question any company that can promise accurate testing of these injectors. In our opinion, if the diagnostics on the truck say it's bad, it probably is.

**14) Should I install a "race valve (rail plug)" in place of my factory PRV (pressure relief valve) to get more rail pressure??**

No, we do not recommend eliminating the factory PRV in your HP fuel system. The PRV is there for a reason; to eliminate the damage that can be caused by pressure spikes. When a "race valve (rail plug)" is installed these pressure spikes have nowhere to go except into the injector. The only time plugging the rail will fix a rail pressure issue is if the factory PRV has been blown off multiple times and is starting to wear out. At this point we would suggest replacing the worn PRV with another factory unit. For higher pressure applications we can modify a new PRV to a higher blow off point so you're not on the edge of the stock factory unit while still retaining the safety function of the PRV. We have seen many injector sets come back from rail pressure spikes while running these plugs causing pre-mature wear of the internal components of the injectors, stators lifted or even worse blown off the top of the injector. In extreme cases rail plugs have also resulted in cracked injector bodies.

**15) Do I need to replace my High Pressure cross feed tubes when I replace my Cummins injectors?**

We re-use the same high pressure feed tube in the fixture on our test bench. However, if it leaks on our bench it is easy to spot and fix. We are also installing and uninstalling many Cummins injectors a day and change feed tubes out on a regular basis due to wear over time. If you do not want to change the feed tubes, at a minimum, a careful inspection of the end of the feed tube is necessary. If there is any scratch, ding, dent or other signs of damage, you should replace them. If you suspect the system may have been contaminated with debris or water, replace them all. With the edge filter in place there is no way to be sure you have cleaned the inside of the tube and we do not recommend the removal of any edge filter. If it is removed, there is nothing stopping a piece of debris from getting into the injector, becoming lodged in the injector control system, holding it open, and dumping as much fuel as the pump(s) can produce. The "Official" Cummins, Bosch, and Ram recommendation is to replace all feed tubes when the injectors are removed. Some shops always replace the tubes as they have been burned too many times with old leaky feed tubes. Our recommendation is to change the feed tubes when you install a new set of injectors, but the choice is yours.

**16) Can I remove the injector edge filter for better flow?**

The injector output is increased slightly by removal of the edge filters, but in our opinion the cost of the smallest piece of debris locking the injector open is not worth this small gain in output. This holds true on all of the Duramax applications and Cummins applications that use the side feed connector tubes. It's better to properly size the nozzle to hit your desired fuel level. If the high pressure fitting has been damaged on your LLY/LBZ/LMM injector, we can replace it with a new fitting, edge filter and properly crimp the collar in place.

**17) What about extra filtration?**

Typical stock filters are rated at 5 micron and are generally sufficient enough for stock applications when serviced at proper intervals, but additional filtration and water separation is always recommended for even stock vehicles. For higher output, and higher flow, staged filtration, as used extensively in the heavy duty diesel world, is the best. A 10 micron primary filter followed by a 5, or even 2, micron secondary filter is recommended. End use and geography comes into play as well. In northern climates fuel waxing must be taken into consideration with lower micron rated filters subject to quicker plugging with gelled fuel.

As a rough guideline, the filter package should be able to flow 150 Gallons per hour without generating excessive backpressure for each CP3 pump (stock or modified). This assumes each one is being fully utilized.

**18) Can I send my unknown companies modified injectors in and have them repaired or balanced?**

If they are out of balance, nozzle or body issues, have debris internally, etc... We will not fix them. We do not work with or repair any other companies modified products. Typically these products do not meet our quality control standard which makes it nearly impossible for us to work with them. Our baseline function test consists of an external cleaning of all injectors using key factory calibration points like pilot, idle, low and midpoint quantities as well as checking the return flow of each injector. This information gives us a really good idea of how the injectors are performing and what might be wrong with the injectors. Also how these issues may correlate to the symptoms you are having in the truck.

**19) My balance rates are off, what can I do?**

GM balance rate limits with the vehicle at operating temperature are +/-4 at idle in park and +/-6 at idle in gear.

Balance rates are an indicator of how evenly each cylinder is accelerating the crankshaft. Anything that affects cylinder firing "strength" will affect the balance rate readings. We have heard of normal things, such as valve lash and low cylinder compression (copper seal, loose injector cup (LB7), rings, head gasket, etc...) affecting balance rates. Incorrect injector output codes or NIMA codes can throw off balance rates as well (see question #20). We have also seen a few unusual things such as bent connecting rods causing high balance rates. So, there are a number of things besides injectors affecting balance rates, and they should be eliminated as possible contributors before removing the injectors.

To help determine if the root cause is related to the injectors, or one of the other items mentioned above, exchange the injector in the questionable cylinder with one from another cylinder. If the excessive balance rate does not follow the injector to its new position, begin checking the engine related items listed above. If the balance rate does follow the injector, the injector may need to be repaired (if possible), or replaced.

**20) Do I have to enter the injector output codes or also identified as the "NIMA codes"?**

When installing a set of modified injectors in an engine that is equipped with injector output codes or NIMA codes, it helps to set all of the cylinder codes to the same value. Once modified, it is likely the injector no longer has the output characteristics that are mapped in the factory NIMA code. Since Exergy has already balanced the injectors on the bench, it is best to have the ECU treat them all the same rather than try to compensate for an output characteristic (high or low) that is no longer there. Pick any one of the codes off any one of the injectors and enter that code for all in the ECU.

**21) Do you modify the latest Piezo injectors for the 6.7 Ford, LML Duramax and the Chevy Cruze Turbo Diesel?**

Yes, we can increase the injector output on the latest Piezo injectors. We completed our initial development testing in 2013 for these modifications and have moved forward with several injector sets to assure excellent set balance and consistency with great results. Email our sales department for the latest status.