

# Turbochargers

## An expanding market that's yours for the taking

The turbocharger service market in North America has historically been dominated by the diesel service industry. While the 1980s showed some promise of potential from the automotive service sector, it was relatively short lived. We have typically characterized the majority of what's been called the "Independent Channel." This would be non-OEM or aftermarket for turbochargers, and for good reason. The turbocharger, along with the fuel system, supplies and controls the engine's mass flow from which horsepower is produced. Further, the fuel system and the turbocharger both contain the most precision machining tolerances within the engine assembly.

Historically, the lines between service providers were pretty well drawn in diesel versus gasoline, meaning that most service shops that actually worked on the vehicles predominately specialized in one or the other, with a few exceptions. This also allowed for different methods of product distribution between each side of the service market.

The dramatic growth in the light-duty diesel pick-up has spawned a significant new market subset. In the past, "diesel" virtually meant "commercial" and "gasoline" virtually meant "consumer". Today there is a dynamic market sub-set commonly referred to as "consumer diesel". The value of labeling this distinction is to understand that developing the consumer diesel market is

### Early 21st Century Trends

- Since 2004, 75% of all heavy-duty pickups sold have been diesel powered.
- In Europe, emissions standards drive sulfur out of diesel fuel, U.S. follows in 2007.
- The 97% reduction in fuel sulfur becomes great enabler for diesel exhaust after treatments.
- Advanced diesel fuel pilot injection and advanced turbo charging make diesels clean, quiet and high-performance.
- In 2007, over 50% of all new passenger cars sold in Europe were diesel powered.
- North Americans are now feeling Europeans' "fuel pains".
- The probabilities of fuel prices remaining high appear to be long term.
- New diesel engines begin to receive more press about "clean diesel" technology and diesel begins to become known for their high-performance potential.
- The turbocharger replacement market in Europe has grown over 900% in the last five years... NORTH AMERICA IS NEXT!

done differently than the historical ways our commercial diesel business was developed. We're all aware of the dynamic forecasts of where diesels are likely to be headed. The forecast of 12-15% diesel penetration into the automotive market by 2015 has many implications to our businesses through the dramatic impact it will have on the "consumer diesel" sector. If these forecasts come to pass this will mean instead of just over half a million new consumer diesels entering the market

each year, there will be approximately 2.2 million diesel powered vehicles entering the North American market.

All of these consumer diesels will have to have turbochargers in order to meet emissions and consumer expectations of performance to accept diesel as an alternative to gasoline. The traditional division between service providers will also begin to blur as more OE auto dealers and independent auto service shops see increasing demand for diesel service.

These facts have a significant impact upon the future service market for turbos, but there's more! The vehicle builders' push toward smaller turbocharged gas engines during the 1980s was a response to rising fuel costs and consumer fears that gasoline may exceed \$1.00 per gallon! Today that price would be a joy as we face the fear of \$5.00 per gallon.

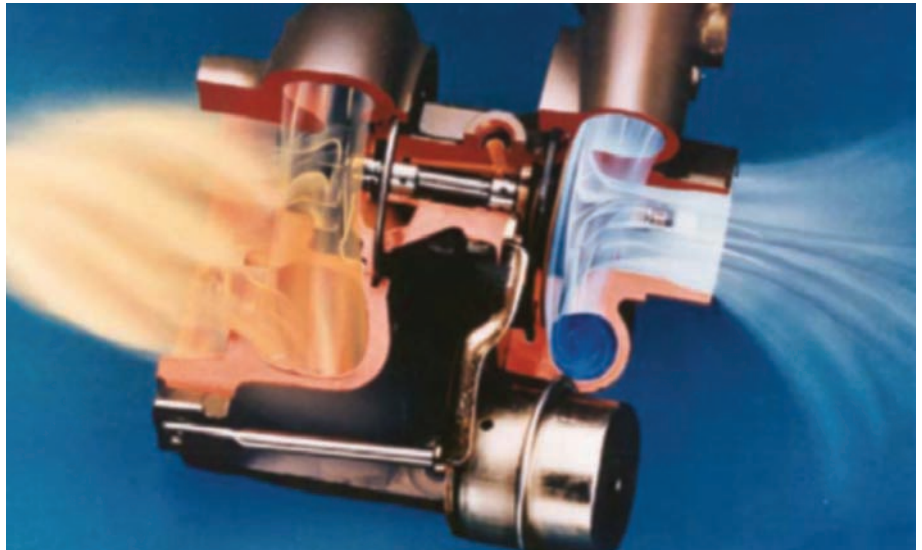
European buyers have been faced with similar fuel costs much longer than have North Americans and the result is greater diesel penetration (over 50%) and more usage of smaller displacement gas engines that are turbocharged. As a result the European independent turbocharger service market has grown 900% in just five years! North America is next.

Today's buyers are more accepting of higher revving smaller displacement turbocharged engines than the buyers of the 1980s who felt low-end torque was king. The average engine size in displacement for North American automotive engines is twice that of European engines today. The flash in the pan automotive turbo craze of the 1980s will likely pale in comparison due to many positive stresses now upon us such as total vehicle manufacturing cost, higher demand for fuel efficiency, and a different buyer who accepts low torque / high horsepower engines.

It's cheaper to build a turbocharged 4-cylinder gasoline engine than a V-6 naturally aspirated engine of the same horsepower. This will cause a competitive return to turbocharging by most all auto makers in the very near future because that's what consumers want.

The turbocharger service market will contain more unit volume up-side than the fuel injection service market, and the we can be well positioned to benefit from this rapidly developing opportunity. But it won't just fall into our lap. The automotive service aftermarket manufacturers and retailers will be attracted to these volumes and will formulate a formidable channel for competition. Off-shore Pacific rim reverse engineered product is now fighting, and will continue to fight for position as well.

While many of us have been involved in turbocharger service for several years, there are still many who are only casually in the market or do not even sell turbochargers at all. Much of the successful marketing of any member of a channel is about the positioning of your business relative to where the market is



## Consider...

- As of 2008, every major automaker has announced plans for production of "clean diesels" for sales in North America. Diesels must be turbocharged.
- Gasoline and diesel turbocharged engines are a key part of every major automaker's North American plan.
- Forbes forecasts that production of turbocharged gasoline direct-injected engines will hit 7.5 million by 2013.
- Borg Warner, a world leading turbocharger manufacturer, has announced board approval for a \$125 million turbocharger expansion to support new business in North America, Europe, & Asia.
- The worldwide request from automakers to major component suppliers to consider entering the turbocharger market for expanded capacity has spawned a joint venture between the Robert Bosch Corporation and Mahle, which will enter production in 2010 and be called Bosch-Mahle Turbo Systems.
- Tim Manganello, Borg Warner's Chairman and CEO, has said his company's need for increased turbocharger capacity is "essential" to meet customer demands for their turbocharger technology.
- It is cheaper for automakers to build a turbocharged four-cylinder engine of the same horsepower as a naturally aspirated six cylinder.
- Worldwide 80% of new engines developed between now and 2014 will be four cylinders.
- The average size engine displacement today in Europe is half that of the average size engine in North America. That will change, but turbos will be the power compensator.
- To date, European OEM's have under-estimated North American demand for diesel pass-cars. The Mercedes E320 sold out even at its \$1,000 premium over its gasoline counterpart. VW's Touaregs sold out its limited quantity at \$60,000 each. The Daimler Jeep Liberty diesel sold out of model year 2005 at \$25,000 each, and actual estimated demand is around 40,000 units.

## POWER & PERFORMANCE

BY JAY K. MILLER

headed so that its path has a head-on collision with your preparation.

### Proof that the future is turbocharged

In the first part of this article, we discussed the fact that the turbocharger market is rapidly changing, and that these changes have a potentially dramatic impact upon members' businesses. However, one could logically challenge that while all those previously mentioned issues are fact, what proof is there that these changes are actually going to take place? Certainly businesses need to deal in facts, not crystal balls because definite trends are something you devote time and expenses into in order to properly position your company in the direction a market is headed. So, just what are the facts?

The future, widebase use of turbocharging is inevitable and the indicators of this fact are numerous. Within two to four years there will be

literally millions more turbochargers in service in almost every type of consumer vehicle whether gasoline, diesel, or hybrid powered; and the trend will be upward for years. Following is some of the overwhelming and compelling proof that turbochargers are a critical part of tomorrow's passenger car technology.

### Challenges & Opportunities

The challenges now are to take a fresh look at how you go to market. Historically our businesses were business-to-business type companies because diesel meant "commercial users" for the most part. But every fuel shop has had a glimpse at what's in store by way of the light-duty diesel pick-up performance diesel boom. That market segment now approaches \$100 million in size in North America. This doesn't mean you need to enter the performance diesel segment if you're not already in it. However, the real strategic value from performance diesel is the revenue earned today will pay for

marketing expenses to educate consumers about who you are and what you can do for them, so that when they do need services that are your core competencies, they know where to go!

If you are not presently in the turbocharger replacement market you should be taking a new look at it. Turbos and fuel injection have been successful product partners since the beginning. The challenges for fuel shops will continue to be staying in tune with current technology which means continued investment in capital equipment to maintain your company's technical capabilities to stay in step with where technology is going. Additional revenue earned by successful service sales of related components can be a critical element for our businesses to stay on top of our game.

As turbo diesels and turbocharged gasoline automobiles dig deeper into the passenger car market share, an ever greater share of our total business volume will come from consumers. Thus mass-merchandising tactics (such as radio,

## Specializing in Used/Rebuilt Engine Rebuilding Equipment

FARRIS EQUIPMENT SALES is one of the largest dealers of used/rebuilt engine rebuilding equipment in the United States. We have been blessed to ship our equipment to nearly every state in the USA and to over 40 other countries around the world.

We invite you to visit our website for photos and pricing:  
**[www.farrisequipment.com](http://www.farrisequipment.com)**

The photos will give you an idea of the quality of our machines and also show you our facilities and people. Warranty provided with every rebuilt machine we sell.



Contact SAM FARRIS or DON STONE  
3001 Interstate 27, Lubbock, TX 79404  
E-mail: [sam@farrisequipment.com](mailto:sam@farrisequipment.com)

**Buy the Right piece, at the Right price,  
FROM THE RIGHT PEOPLE!!**

**Call 800-882-1808 for the FARRIST DEAL around!**

# POWER & PERFORMANCE

BY JAY K. MILLER

television, and direct mail) will systematically become ever-more necessary to provide what's called "top-of-mind" awareness in the consumer market.

The traditional split between the automotive service and diesel service sectors will begin to overlap more and more as well.

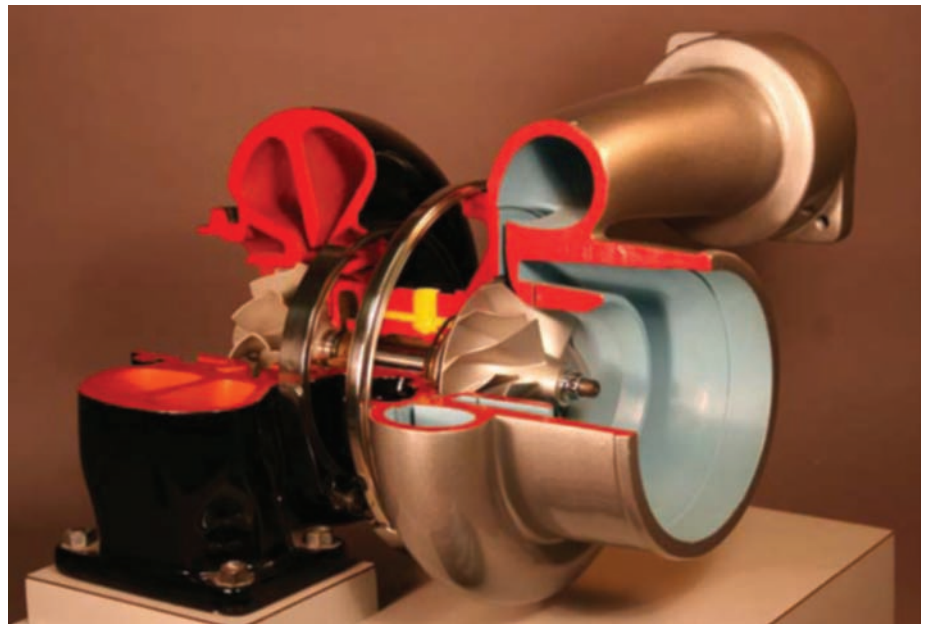
Up to this point the typical independent automotive service center has had very little need for what the typical authorized diesel fuel and turbo shops had to offer. As both diesels and turbochargers become more commonplace, these businesses will become a growing opportunity for every Authorized Diesel Service (ADS) member.

The environmental and market stresses are driving rapid change just as the rate of change in technology is influencing our businesses. "Business as usual" is an out-dated term that needs to be replaced with "Business as required". Markets are not created, they are satisfied. Successful future market satisfaction will require your strategic preparations to begin today.

The challenges are much different than in the past. Domestic market pressures will come from off-shore like never before and we are all seeing its beginnings right now. In the past it was the OEM service channel versus the independent channel. That will continue, but the off-shore supply chain will spawn a whole new front due to sheer market size.

## The "Component OEM" Concept

The term "authorization" has historically held great value and will continue to. But that position will not likely carry the same broad appeal to consumers unless we, the authorized independent channel, market that value to our customers of tomorrow. Historically the OEMs have painted all non-vehicle OEM (VOEM) and non-engine OEM (EOEM) dealers with a broad brush thereby creating a picture of OEM vs. independents. The trade publications have assisted with this distinctive nomenclature. It benignly casts a doubt upon our collective credibility as independents. But that's not an accurate reflection of fact. The typical ADS member company sells and services products designed and manufactured by component OEMs such that we are the "Component OEM" channel. As such we specialize beyond what the typical VOEM



and EOEM dealers are capable of doing in many cases. As a network, we and our suppliers under-market this concept and the end-users therefore don't know the difference. Take a stand and market the truth!

## The Manufacturers

Turbocharger and F.I.E. manufacturers have challenges as well. It's not business as usual for the channel members or the manufacturers. We need to collectively stay competitive to fend off competition that is a threat to our future businesses. This will likely mean a paradigm shift in what pricing strategies need to take place. For an off-shore competitor there are only three ways to successfully enter the market, price, availability, or a combination of both. The ADS network goes a long way toward addressing the availability concerns, but there still needs to be greater turbocharger participation from more members. World-wide competitive prices will need to enter into the service market equation more than ever before to stop competitive erosion before it gets started. Manufacturers and ADS service members alike should partner to technically evaluate will-fit look-a-likes where consumers are not capable of judging for themselves performance, durability, and even safety concerns. Holset brand turbochargers has bravely led the way thus far, to technically evaluate this off-shore threat. This proactive approach needs to continue by

all. Competitive product evaluations are encouraged by the Federal Trade Commission because they are in the consumers' best interest.

Tomorrow's turbocharger service replacement market will be less about which brand of component OEM to use simply because the OEMs compete with each other for aftermarket change-outs. In tomorrow's market it will be all the OEM turbo component manufacturers can handle to stay up with their own OEM production plus the rapidly developing service market. Our collective job is to help keep it all captive as "Component OEM" business partners. ■



Jay K. Miller began his career in the turbocharger industry straight out of Indiana State University's Automotive Technology Department. He currently lives in Louisville, Kentucky, where he is the director of sales and marketing for Diesel Injection Service Company, the largest turbocharger distributor in North America. He is also the former executive vice president and general manager of Gale Banks Engineering, one of the nation's top designers and retailers of aftermarket turbocharger systems.