Treading into new territory

by Mark_Maynard

Kevin Arima reads tire treads much like a palm reader.

The Toyo Tires engineer sees long life in multiwave siping. He sees saved lives in an asymmetrical, nondirectional tread. And he sees periods of quiet and comfort with reduced "pipe resonance" and a "groove wall."

TOYO TIRES - Toyo Tires' Versado LX is a competitive replacement for such brands as Michelin, Continental and Pirelli, with sizes for luxury-class sedans and minivans. CNS Photo courtesy of Toyo Tires. Arima, 29, was with the company in San Diego recently for the national media launch of its new premium luxury touring tire, the Versado LX.

Toyo Tires is seeking a bigger footprint in U.S. replacement tire sales and is beginning its largest TV and print advertising campaign in many years.

Based at Toyo's U.S. headquarters in Cypress, Calif., Arima is product manager for ultra-high-performance tires.

All tires have sipes, but not all sipes are created equal.

Sipes are the little lines among the larger groove pattern on the face of the tire. They help move water out of the tread in inclement weather and form rows of biting edges for grip.

Multiwave siping used by Toyo is designed to interlock and boost the strength of the tread blocks, Arima says. Because the multiwave sipes give more support, the tread block moves less, generates less heat and helps the tire last longer.

Pipe resonance and groove wall may sound like surfer speak, but they are terms for quieting the ride of the tire. Pipes and groove walls are the deepest channels running the circumference of the tire between the tread blocks. Air whistles through those pipes as the tire rotates.

The noise level of a tire can be about 500 hertz, Arima says, "which can be particularly irritating to the human ear." And as tires wear, they make more noise.

Through computer simulation, Toyo came up with "Silent Wall" technology, which serrates the sides of the groove wall to interrupt the air flow. The serrations considerably reduce noise, Arima says.

And a quiet, comfortable ride is all-important to any car manufacturer trying to be recognized in the various automotive satisfaction reports and surveys by J.D. Power and Associates.

A ride-and-drive showcased the Versado LX on BMW 750iL, 760iL (the 12-cylinder model) and Cadillac DTS sedans. The tire was designed to be a competitive replacement for the Michelins, Continentals or whatever is originally sold on full-size luxury sedans. But there are tire sizes for just about any uplevel, luxury mid-size sedan or minivan, too.

The tire rolled quietly on the test vehicles, but we did not have vehicles with competing tires to compare ride qualities. Overall, the Versado felt supple and even rolled quietly on grooved concrete interstate, which can be unforgiving of even the best tires.

The Versado tire is available in 43 sizes in 15- to 18-inch wheel diameters. More sizes will be added. Pricing for a common tire size such as a 15-inch 215/60 starts at about $91. A 225/60 16-inch is about $121. The mileage warranty goes up to 80,000 miles.

Toyo has been in business in the United States since 1966 and in Japan since 1945. Unlike other manufacturers, it does not sell to wholesalers (Costco, Sears, etc.) or to online tire sellers. All sales are done through the traditional dealer experience.

Copley News Service Tire safety

When shopping for tires, it's best to follow the vehicle manufacturer's replacement tire recommendations. Consumers can get online help matching car and tires at such Web sites as www.tirerack.com and www.discounttire.com.

Other sites for tire information include:

- www.rma.org, Tire Industry Safety Council (Rubber Manufacturer's Association)

- www.tiresafety.com, sponsored by Bridgestone Firestone

- www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/brochure.html

- www.goodyear.ca/tireschool/safety

The mechanics of a replacement tire

Toyo did not provide vehicles with competing tires to compare with the Versado LX, but the company did present Tanner Foust. He's a top-rated driver in Formula Drifting and rally racing, a stunt driver for films (including "The Fast and the Furious: Tokyo Drift" and "Dukes of Hazzard"), a TV commentator, an ice driver and a private coach.

He was driving the BMW 760iL on the first leg of the ride-and-drive. I had started taking notes when he said: "A tire's sidewall is the first link of the suspension."

A light went on in my head as I connected the lines from tires to struts to springs.

Buying a more expensive replacement tire for your car isn't always an improvement. If the new tire has more grip than the spring rate of the suspension, the car will have more body roll as the tires grip but the springs allow the body movement, Foust says. And when tire performance is softer than the suspension, there will be more flex and instability of the rubber.

Sport-tuned suspensions are popular on even the most inexpensive cars, but a stiffer suspension requires a better-performing - and more expensive - tire.

When it's time to replace the original equipment tire, the consumer faces possible sticker shock when buying performance tires. Opting for a cheaper tire, not rated for the performance level of the car, jeopardizes control in emergency maneuvers and ride quality.

When buying a replacement tire, it pays to shop, but the spring rate of the sidewall should match the spring rate of the car.

And this tip from tire engineer Kevin Arima: Original equipment tires can be different from their exact replacement tires. The reason, he says, is in the manufacturer's specifications for the tire. They can have a slightly shorter tread or differences in the rubber compounds to meet various requirements for quiet or comfort.

Generally, the replacement tire will have a longer life than the tires that came on the car, Arima says.

That's useful information for those who lease cars. Some drivers might prefer to remove the original equipment tires after one year and install the identical replacement tire. It's likely the replacement tire will carry through the end of the lease, sparing the owner from a costly bill to stay in compliance with the tread-depth requirement of some new-vehicle leases. Getting ready for the roll-out

Building brand awareness won't be easy or inexpensive for Toyo Tires.

Toyo is not a big player like an "original equipment" supplier of tires to carmakers. Mazda, Toyota and Lexus are among the brands that use Toyo tires on some of their vehicles.

But expect to hear more from this Japanese brand that has had a U.S. base since 1966. To introduce its Versado LX replacement tire for full-size luxury sedans, there will be a new series of print ads in lifestyle magazines - Golf Digest and Wired, among them - and the popular car enthusiast publications. The company will have a national broadcast campaign of 400 30-second spots in the next year. Cable network placement includes ESPN, CNN, The Golf Channel and TLC.

"This is the largest investment in many, many years," marketing chief Steve Hutchinson says. "From TV spots, to print ads to point-of-purchase kits for our dealers, Toyo has committed several million dollars to the introduction of Versado," he says.

The replacement tire market adds up to about 200 million tires a year. Forty-three percent of that market is controlled by three companies - Goodyear, Michelin and Bridgestone.

"The only way to grow your business is to take it away from somebody else, because there is no new business out there," says Kevin Rohlwing of the Tire Industry Association in Bowie, Md. "And there are 20 other companies trying to do the same thing." Toyo ranks 11th among tire makers.

"A half-percent gain by one of these makers is literally a million tires," Rohlwing says. "And the big three makers are hoping for a half-percent growth a year."

Toyo doesn't have the network of nationwide dealers or high-profile accoutrements to grab consumers' attention, Rohlwing says. "They don't have a blimp. They don't have fancy commercials with the Michelin Man or Mario Andretti - and that's what it takes to build brand awareness in the replacement tire market," he says.

Toyo is smart to get away from the common-size, cookie-cutter cheap tires to focus on marketing a more expensive, quality tire, Rohlwing says.

"In the luxury segment, Toyo can be a lower-price alternative," he says. "They may not pick up that many more tires sold a year, but they will sell those tires at a higher profit margin."

It makes sense for them to go after that market for growth, but this isn't something that's lost on the other 20 makers on the list." Plying their trade

The top 15 global tire makers, based on 2005 sales (in millions):

1. Bridgestone Corp. (Tokyo): $18,333

2. Michelin (Clermont-Ferrand, France): $17,920

3. Goodyear Tire & Rubber Co. (Akron, Ohio): $17,500

4. Continental (Hanover, Germany): $6,350

5. Pirelli (Milan, Italy).: $4,513

6. Sumitomo Rubber Industries Ltd. (Kobe, Japan): $3,616.4

7. Yokohama Rubber Co. Ltd. (Tokyo): $2,965.8

8. Hankook Tire Co. (Seoul, South Korea): $2,477.5

9. Cooper Tire & Rubber Co. (Findlay, Ohio) $2,155.2

10. Kumho Tire Co. (Seoul, South Korea) $1,911.4

11. Toyo Tire & Rubber Co. Ltd. (Osaka, Japan) $1,773

12. Cheng Shin / Maxxis International (Yuanlin, Taiwan) $1,170.7

13. GITI Tire Co. (Singapore / China) $1,154

14. Triangle Group Co. Ltd. (Shandong, China) $980

15. MRF Ltd. (Chennai, India) $752.7

Source: Tire Business

Manufacturers' shares of the North American replacement-tire market for passenger cars, based of February 2007 figures:

Manufacturer Percent

Goodyear 12

Michelin 9

Firestone 6.5

BFGoodrich 6

Bridgestone 5.5

Cooper 5

Hankook/Aurora 4.5

General 3

Uniroyal 3

Kumho/Marshal 3

Toyo 2.5

Yokohama 2.5

Dayton 2

Dunlop 2

Continental 2

Kelly 1.5

Mastercraft 1.5

Falken 1

Pirelli 1

Sumitomo 1

Others 25.5

Source: Tire Business

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