



OIL MATTERS

WORDS AND IMAGES
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**WE GO INSIDE
MAXIMA RACING
OIL TO FIND OUT
WHAT MAKES
IT SLICK**

Oil is oil is oil, right? If you buy into that, well then you probably believe the world is flat and all blondes are natural. All kidding aside, different brands of oil and other lubricants may look the same, but they certainly don't perform the same way. Some are better than others, and we went inside Maxima Racing Oils to find out exactly what makes its product as good as it is.

First, let's get a little background on

Maxima. It all started back in the 1960s with successful drag racer Dick Lechien and his partner Roland Reed. The two were developing custom blends of better castor oils to support their racing efforts. Together they owned and operated a Honda/Kawasaki dealership and also got into boats. However, when Dick's son Ronnie (a top motocross rider) began racing motorcycles, the drive to create better racing oils was the genesis of Maxima in 1979. The com-

**ABOVE:**

Base oils as well as special additives are delivered by tanker truck or in 55 gallon drums and stored at Maxima Racing Oil's facility for use in the company's proprietary blending and formulation processes. All base products and additives are examined with particular scrutiny prior to blending, and all formulations are tested the lab and the field prior to development for packaging and sale.

RIGHT:

The horseshoe-shaped rings are barrel warmers. They are wrapped around the 55 gallon drums to heat the fluids up to the desired temperature before blending. Some oils and additives must be blended at certain temperatures to produce the proper result.

**LEFT:**

Maxima Racing Oil uses a number of different sizes of blending vats in the production of its various lubricant products. This is one of the smaller vats, and you can see the blender mounted for work in this photo.



pany name was derived from the speed limit signs in Mexico, where Lechien did a lot of riding for fun and racing that read "... Velocidad Maxima."

The continued development of high end products has set Maxima apart from your typical "racing oil" company. Maxima strives to continue the development of new age synthetics, modified castors, and petroleum base stocks, helping to establish new standards for a multitude of products such as engine oil, gear oils, shock fluids, and more. It's a completely vertical company offering complete quality control from blending to bottling on every Maxima product.

We met with Maxima's president and owner Danny Massie. Massie walked us through the Maxima facility to get the low-down on the what, where, and why of Maxima Racing Oils.

The first thing we learned was that Massie began working for Lechien more than 25 years ago. His first years at Maxima had him sweeping the floors, loading bottles on the production line, packing products, and filling in anywhere Mr. Lechien needed help. Eventually Massie became involved in the blending department, which led to today's formulation strategy. He told us, "I am still part of the formulating team that creates new products and blends. This is the most exciting part of what I do."

Massie continued, "We begin the chemistry on paper with an idea, then we move to small samples that we test in cooperation with one of the most respected testing labs in the world (located in Ohio). Once we are confident with the lab results, we put our racing partners to the test. All of Maxima's products are tested in real world racing situations. No product is commercialized without testing. Once we are satisfied with the performance of that lubricant product and its specific purpose, we move to commercialization, which is all done in-house here at our Santee, California facility."

The base oils are brought into Maxima's facility from very select refineries that produce the highest-quality Maxima desires. Then those base oils are blended with any number of additives to enhance the lubricant's ability to perform its specific task. When you see labels on Maxima Racing Oil products

**ABOVE:**

Samples are taken at various stages during the blending process of all Maxima Racing Oil products for testing to make sure that the proper formulation is taking place.

**ABOVE:**

Once a product, whether it be engine oil, ATF, shock fluid, or any of the different lubricants created by Maxima Racing Oil has been properly formulated, huge and fast-working pumps are used to transfer the product to smaller tanks for the packaging process.

ABOVE:

Consumer-sized bottles wait their turn to be placed on the automated packaging line where they will be filled, weighed for proper measure, securely capped, and then labeled. They are then boxed for delivery to Maxima Racing Oil distributors.



such as “Triple Shield Formula,” they are more than just marketing terms. The old “just add a lot of zinc and your problems are solved” Mantra just doesn’t hold water anymore. There is a purpose behind every Maxima blend.

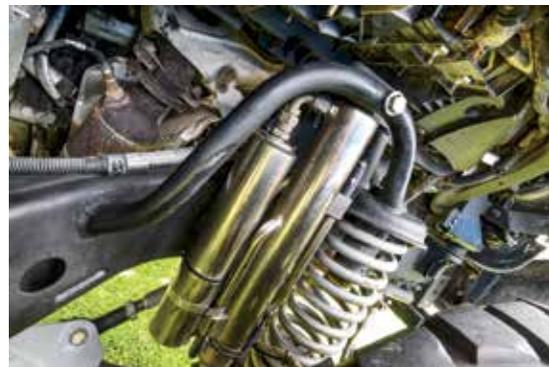
Zinc dialkyldithiophosphate (ZDDP) is a common anti-wear agent. Zinc reacts with the metal surface when the energy (temperature) is high enough. This reaction provides a sacrificial layer to protect the metal surface. Maxima goes a step farther by using a 2X Zinc formula. It’s two different types of zinc in the same formula. The first zinc activates at low temperatures to protect your engine at cold start-up and carries through until the second zinc activates at higher operating temperatures, protecting the engine and strengthening the oil. After all, your engine doesn’t start up at 180 degrees F. Every engine oil Maxima makes contains its 2X Zinc formula.

You have probably read about esters, but what are esters? Esters are synthetic base oils that provide lubrication, friction reduction and act as anti-wear agents by reacting to the metal surface due to their polar nature. Think of esters as magnets in your engine, bonding to the metal surfaces. Esters are man-made synthesized molecules produced by reacting fatty acids and alcohol chains. These molecules have a polar end (head) and an oil-soluble end (tail). Once placed into service, the polar end of the molecule finds a metal surface and attaches itself. So how does this benefit the end user? Not only do the esters’ polarity create a barrier between the tolerances of your engines contact surfaces, but they can also be manipulated to perform very specific tasks.

Maxima RS full synthetic engine oils are triple ester formulas. Three different esters are embedded in the formulas for specific purposes. One ester helps to seal the rings and stabilize them at high rpm. The second ester has proven to rapidly build film thickness relative to engine RPM. This gives a racer options to increase horsepower by possibly dropping down a viscosity grade. The third ester that makes up the triple shield protection is a very special ester that’s shown positive results on coated parts like DLC (Diamond like Coating) commonly found on wrist pins and coated bearings.

RIGHT:

The triple ester formulas in Maxima Racing Oil's engine oil products can bind themselves to metal surfaces such as crankshaft bearings to provide long-lasting and superior lubrication properties.

**LEFT:**

The high-performance shock fluids from Maxima Racing Oil come in a variety of weights (viscosity) to help you better tune the damping qualities of the shock absorbers to match the needs of your specific vehicle.

RIGHT:

Among the many lubrication products created by Maxima Racing Oil, its motor oils and shock absorber fluids are some of its most popular. It also produces gear oils, and a cornucopia of other automotive, motorcycle, and bicycle products.



Among the many lubrication products that Maxima creates, its use of ester synthetics have put them on the map for high quality products. These products include, but are not limited to, engine oils, gear oils, and suspension fluids. Maxima's engine oil line-up consists of 100 percent ester based synthetics, semi-synthetics that are a true 50/50 blend, highly refined conventional oils, petroleum break-in oils, heavy-duty diesel 15W-40, and a variety of two-stroke oils.

The gear oil's that the company produces includes Maxima's 100 percent synthetic Pro Gear oil that comes in a variety of viscosities: 75W90, 75W140 and 75W190. Mineral based Performance gear oil includes an 85W140 and 250WT. Maxima's ultra-successful hydraulic fluids include Synthetic ATF 20WT and 30WT, a full ester synthetic power steering fluid, and a full range of shock fluids available both in a synthetic and a mineral based platforms. By having the choice of Maxima's 0WT, 3WT, 7WT and 10WT, you can fine-tune any damping situation.

Maxima divides operations into three segments: Powersports, Performance Auto, and Bike. To complement its

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line of lubricants, Maxima also offers a complete line of

aerosols. These products include detailing sprays like SC1 and Speed Wax, and product-specific cleaners such as Suspension Clean, Contact Cleaner, and Clean Up. Chain waxes, filter oils, and penetrant sprays round out the lubricant-based product line.

The people at Maxima ride and drive on- and off-road, use the products, and demand it be the very best they can possibly provide. The tell all of a product's quality is often times the use of that product by professional athletes, but that can often be a matter of sponsorship. However, there is no sponsorship money coming. All of the riders, drivers, engine, and drive-train builders we spoke to use Maxima Racing Oils' products because they want to. **DS**