



PERFORMER

FOR MICHELIN MOTORCYCLE TIRE PERFORMANCE CENTER DEALERS



Pilot® Sport rear tires emerge from curing molds at the Michelin plant in Lasarte, Spain.

Chamber of Secrets

A rare look inside the Michelin motorcycle tire factory

Ask anyone who's attended a Grand Prix or World Superbike race in Spain, and you'll quickly learn that no fans are more rabid than the Spaniards. So it's only fitting that most of the Michelin® motorcycle tires sold worldwide are made in Spain.

Though Michelin has its headquarters in Clermont-Ferrand, France, its 70-plus tire factories are located in 16 countries, the U.S. among them. The bulk of the company's motorcycle tire output, however, comes from a single plant located in the Basque region of northeastern Spain. The Lasarte factory builds some 2 million tires annually, for on- and off-road bikes, scooters and racing.

The factory opened in 1934, but continuous updates in technology and machinery – much of it developed by

Michelin for its own use – ensure that Lasarte is one of the world's most modern and efficient tire production facilities. Indeed, the plant has been certified to ISO 14001 environmental management standards.

The seasonal nature of the motorcycle market means that the 500 or so Lasarte

employees engaged in the development and production of motorcycle tires must be highly flexible to respond to market demand. During the busiest times of the year, the factory operates with three shifts, seven days a week.

In a highly competitive market, Michelin has a well-earned reputation for making high-quality, high-performance tires, so it's understandable that the company closely guards its production methods. Relatively few outsiders have been granted permission to tour the Lasarte facility. A *Performer* staff member was among the recent visitors.

Tire production at Lasarte involves four major steps: preparation, assembly, curing and inspection. Let's take a closer look...

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A worker inspects rubber strips as they leave the extruder.



INSIDE THIS ISSUE...

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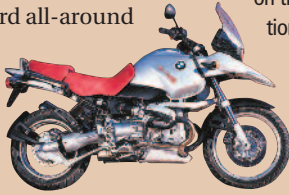


Selling Points

Anakee™

New adventure touring tire

Large dual-purpose bikes were originally designed to invoke the image of Dakar-style rallies, but in recent years, these bikes have become more oriented toward all-around use. Trail-styled bikes with sport-bike-derived engines, such as the Suzuki V-Strom, have exposed the need for a new type of tire. The Michelin® Anakee™ is the first tire to combine rugged off-road styling with serious all-season road performance.



improved wet grip and durability compared with the T66.

4 Tubeless or tube-type in all sizes, thanks to a redesigned bead.

4 Bias-ply or radial construction on the front; radial construction exclusively on the rear.

4 A versatile tread with deep channels for water evacuation and a high ratio of rubber surface to grooves for stable handling.

4 Homologated as original equipment on the Suzuki V-Strom and Triumph Tiger.

4 Improved lateral rigidity and stability through additional casing reinforcement compared with Anakee's predecessor, the T66.

4 Silica-based tread compound, a first for this type of tire, for



ANAKEE

Pilot® Sport HPX

Extreme bikes need an extreme tire

When you're putting 150-plus horsepower through the rear wheel of a 500-pound sportbike, you're asking a lot of your tires. That's why Michelin developed the Pilot® Sport HPX.



While it uses the proven Pilot® Sport tread design, the internal construction of the Pilot® Sport HPX is considerably different. It's specifically designed for the demands of heavy, large-displacement hypersport bikes like the Suzuki Hayabusa, Kawasaki ZX-12 and Honda CBR 1100XX.

4 Special tread compound developed for sustained high speeds.

4 Rear tread pattern combines large tread blocks and uniform distribution of the tread grooves, for excellent grip, efficient water evacuation, and optimized wear pattern.

4 Front tread pattern similar to that of the rear tire, for powerful braking, grip on wet roads, and even tread-wear.

*Michelin does not condone the use of its tires in excess of posted speed limits.

4 Engineered for high-speed stability, the rear Pilot Sport HPX has been certified by European authorities for speeds up to 200 mph* (320 km/h).



PILOT® SPORT HPX

...Factory Tour (Continued from page 1)

Preparation

Some 200 different raw materials can go into the construction of a single tire, so it's critical that every individual component is precisely cut and formed before assembly. In the preparation stage, textile fabrics such as polyester, nylon or Kevlar are cut into strips of predetermined angles and widths, using computer-controlled cutting machines. These strips are joined end-to-end in order to form the plies that make up a tire's carcass. Also in this stage, raw rubber compounds are rolled or extruded into strips that will be used to build up the tread, sidewalls and interior of the tires.

Assembly

It all begins on the tire-building drum, which is a rotating cylinder with a flexible center, so that its edges can be brought closer to each other. First, a thin, airtight sheet of synthetic rubber must be laid down on the drum. This serves as the inner surface of the finished tire. The second layer is the casing ply, which comprises the fabric core that makes up the vital sub-structure of the tire. Next come high-strength steel hoops, embedded in profiled rubber strips; these are



Though the Lasarte factory is highly automated, assembly still involves a good deal of skilled labor.

the tire beads. The edges of the casing ply are then folded over the beads to hold them in place. At this point in the process, if the tire were removed from the drum, it would look more like a rubber cylinder open at both ends, rather than a tire.

Other components are then added with extreme precision; some tires have dozens of them, including sidewall reinforcement, zero-

Winning Formula

From MotoGP to AMA outdoor nationals, Michelin riders rule

When the 2003 AMA National Motocross Championship began in May, Honda's **Kevin Windham** hadn't competed on a national level in 15 months. But if he was at all rusty, it hardly showed. Windham reeled off a string of podium finishes and moto wins, culminating in two consecutive overall wins at Unadilla and Washougal that broke Ricky Carmichael's two-year unbeaten streak.

While Windham has the use of a factory-spec CRF450R, he races out of his own truck. The arrangement allows Windham

to choose the sponsors he wants to work with, including Michelin. "With the power of the Honda four-stroke, tires are a big issue," he says. "I'm convinced that Michelin gives me the best chance of running up front."

• **Branden Jesseman** (SoBe Suzuki-Michelin) gave Suzuki and Michelin their second AMA 125 East Supercross Championship in three years. Just a year after posting his first-ever supercross main event win, Jesseman made the series his own, winning

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Kevin Windham's sabbatical seems to have made him faster than ever.



Rossi (left) and Bayliss are battling for the 2003 MotoGP crown. Actual helmets may vary slightly from photos.

Win A Race-Replica Helmet!

This month, all Michelin Performance Center dealers are automatically entered in a drawing to win one of two race-replica helmets: an AGV with the colors of MotoGP world champion Valentino Rossi, or the Suomy of former World Superbike

champion Troy Bayliss.

This is just one of the ways that Michelin would like to thank you for being part of its Performance Center program. The drawing will be held October 15, 2003. The winner will be notified by mail or by phone.

degree belts and crown plies, just to name a few. After all these components are layered on the drum, its edges are moved closer together while a flexible bladder in the middle of the drum inflates, which gives the tire assembly its basic shape. The textile tread plies are then added, followed by the strips of synthetic rubber that will ultimately become the tread pattern. At this stage, the tread is still completely smooth. Each tire's tread pattern is formed in the curing process.

Curing

The unfinished, or 'green' tire is then put into the curing mold, which impresses the tread pattern and sidewall markings, gives the tire its final shape, and vulcanizes the various rubber components. A bladder inside the tire, filled with hot, pressurized water, forces the rubber into the mold cavities. This process intimately binds the rubber compounds to the casing reinforcement components. During this chemical reaction, the tire goes from a plastic to an elastic state.

Curing is one of the most important steps of the manufacturing process, as it determines the performance characteristics of the rubber compound. Temperature, pressure and curing time can all vary, depending on the specific tire being manufactured. At Lasarte, the process for curing radial tires is completely automated.

Inspection

Because the safety and satisfaction of the end user are of paramount importance to Michelin, every single motorcycle tire undergoes a rigorous manual and visual check. Additional checks are performed by machine, and a tire can be rejected for even a minor imperfection. Sample tires are also pulled from production, cut into sections and inspected internally to ensure they're within specified tolerances and dimensions.

While selling motorcycle tires is all about helping customers get more enjoyment out of their bikes, it's easy to forget that producing tires is serious business. As we saw in Spain, Michelin is committed not only to making tires that push the boundaries of performance, but also to employing the most advanced techniques to ensure that quality and reliability are never compromised.



Every tire is thoroughly inspected before it leaves the factory.



MICHELIN

PERFORMER

...Racing Roundup (Continued from page 3)

three of the seven races, and never finishing lower than sixth.

• In the **Moto Grand Prix** World Championship, Michelin is again the dominant tire maker, supplying the Honda, Ducati, Aprilia, Yamaha and Suzuki factory teams. Michelin has won road racing's premier championship the last 11 years running, and is all but assured of an even dozen in 2003. After 10 of the season's 16 races, Michelin riders held the top 11 positions in the points standings and had won every single GP.

Unlike 2002, however, defending world champion Valentino Rossi (Repsol Honda-Michelin) is faced with a serious challenge for the title. At press time, both Rossi and Spain's Sete Gibernau (Telefonica Movistar Honda-Michelin) had won four Grands Prix apiece, though the Italian's consistency kept him atop the championship.

Adding interest to the series this year is the

presence of no less than four Americans: Nicky Hayden (Repsol Honda-Michelin), Colin Edwards (Alice Aprilia-Michelin), Kenny Roberts Jr. and John Hopkins (both Suzuki-Michelin). GP rookie Hayden in particular has been the subject of intense interest, as the reigning AMA Superbike champion. But the Kentuckian has withstood the pressure well, with a best finish to date of fifth, and tenth place in the points.

• At the end of 2003, Michelin will finish its involvement in the **World Superbike Championship** with ten consecutive titles. Through 18 of this season's 24 races, Neil Hodgson and his Ducati Fila-Michelin teammate Ruben Xaus had won 14 times, mathematically eliminating the rest of the field from championship contention. This dominance has led WSB organizers to arbitrarily exclude Michelin from 2004 onward, by limiting all competitors to the use of a single tire brand.



AMA 125 East Supercross champion Branden Jesseman

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